Developing sustainable business models for institutions' provision of open educational resources: Learning from OpenLearn users' motivations and experiences

Conference or Workshop Item

EADTU

Lifelong Learning Programme

PROCEEDINGS

The Open and Flexible Higher Education Conference 2013

Hosted by the FIED and the UMPC in Paris

"Transition to open and on-line education in European universities"

MINISTÈRE DE L'ENSEIGNEMENT SUPÉRIEUR ET DE LA RECHERCHE

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Presidential Address EADTU 2013 Conference
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Introduction

From Zermatt, high in the Swiss Alps, to Eskisehir on the Anatolian Plain, to Paphos on the coast of Cyprus, and now to the left bank of the Seine in the heart of Paris. Next year, we head to beautiful Krakow in the south of Poland. Never let it be said that that EADTU does not reflect the remarkable diversity of Europe today.

Also reflecting that rich diversity, this is a perfect setting for our conference. In Les Misérables, a novel as vast and sprawling as Paris itself, Victor Hugo said that to breathe in Paris was to preserve the soul, and I hope that you will have an opportunity to go in search of the intellectual and spiritual sustenance that Paris has to offer. I hope as well that you will find within the confines of the conference programme, intellectual sustenance of a more immediate kind.

The conference programme reflects something of the sense of disruption that is steadily seeping into the pores of the higher education institutions of Europe. With that not terribly attractive acronym 'MOOCs' ringing in our ears (I much prefer the Spanish equivalent COMA, which rolls of the tongue with rather more grace), we might just be on the cusp of a period that will challenge ways of being and doing in universities that have remained remarkably stable for so long. And if we are at the beginning of a period of disruption, what does that mean for the special concerns of EADTU: the missions, roles and offerings of the open and distance teaching universities of Europe, whether single or dual mode?

These are the questions that have dominated debates over the past year in and around EADTU, and they have created an environment in which the Association has been very active internally and externally. We come to the end of the year with a sense of some satisfaction at what has been achieved, but we are very aware that this is no time for complacency. The period between now and when we meet again for our conference in Krakow may turn out to be one that will shape the role and identity of EADTU for many years to come.

Our work over the past year has been focussed around four activities. In each of them, we can count solid achievement. In each of them, we have created a sense of direction. And in each of them, we have really only taken the first step. In the rest of what I have to say, I want to share with you what we have achieved, why these four activities matter, and what our next steps will be.

The first is about EADTU's intervention in the world of MOOCs, under the title of OpenupEd. The second concerns our work in quality assurance and enhancement. The third is a major review and update of EADTU's strategy, and the fourth, now embedded in our strategy, is our work with the European Commission to secure the future contribution of the open and distance sector to the modernisation of higher education across Europe.

OpenupEd

Let's be honest with ourselves: MOOCs have left the open and distance learning world a little

perplexed. We have accumulated more than 40 years of expertise in teaching and learning when students and teachers do not share the same time and space. We know how to do this, and the rest of higher education knows less than we do. But suddenly, three years ago, a few academics in elite institutions in the US realized that in one way or another, they can do this as well. Scales fell from eyes across the higher education world: there is nothing magical about the confines of the lecture theatre and the seminar room. In no time at all, distinguished universities across the world were attaching themselves to the emerging brand leaders, and Coursera, EdX, Udacity were on everyone's lips.

There is much about this that we should admire: the ambition, the speed, the vision, the business sense. Governments in Europe are nervous, for higher education is a global market, and MOOCs are dominated by the US. So responses have begun to emerge in Europe. In the UK, the Open University has placed itself at the centre of innovation once again, and Futurelearn has been born. In France, only three weeks ago, Geneviève Fioraso, Minister of Higher Education and Research announced the creation of the first French MOOC platform under the banner of France Université Numérique, FUN for short (and I am sure the minister was aware of the attractive anglophone resonance of that acronym).

But we are nervous as well. There are two reasons. First of all, we are often unimpressed by the pedagogy we see on offer. The big name institutions have taken face to face pedagogy and put it online. We know that this is not a recipe for effective distance education. Second, we hold to a set of values which we suspect might not be driving the global expansion of MOOCs. The elite universities of the world have thrived by being highly selective. We have sought out those who fall by the wayside in the rush to join the elite, and those who never ever get to the start of that race. Highly selective research intensive universities want the brightest students they can find, and MOOCs offer a way to track them down across the world. They need their academics to engage with e-learning, and MOOCs are one way to make that happen. And then, when venture capital makes its presence felt, we know that higher education as a social good is not what they have in mind.

So what to do? Last year in Cyprus we felt a sense of urgency. We needed to create something that embraced the diversity of Europe. We needed something that declared our presence, and our commitment to openness, and we needed something that demonstrated the quality in distance and online learning that marks out our sector.

With limited resources and time, we have made a start. On April 25th, we launched the OpenupEd initiative. At launch, 40 MOOCs from 11 partners in 12 different languages were available. Now the list stands at 80 MOOCs, of which some 25 include the opportunity for formal credit. Another 20 institutions have shown serious interest in becoming partner of OpenupEd. The project has been further boosted by our successful bid for funding for the HOME project (Higher education Online: MOOCs the European way) which will give us the resources to strengthen the pedagogic and business models underlying the initiative.

OpenupEd is not seeking to compete with the likes of Coursera. To quote a well-known British advert, it exists to do exactly what it says on the tin: to open up education. It is built on a framework of eight common features that characterize the values and pedagogy of the European open and distance sector. The model is decentralized and diverse, but based on well-defined quality standards

that draw on the EADTU e-xcellence instrument. OpenupEd is not a new platform. Members already have stable learning environments that supports students online, at scale. The added value of OpenupEd lies in the brand that speaks to openness and quality, in providing a route to market for partners, and in the sharing of practice.

Let's be very clear: OpenupEd is a modest proposal with modest resources. Last year, we decided to begin in a practical way. We have defined the initial framework for partnership, governance and quality, and the start-up business model. We have positioned the sector well with the European Commission, which has been very supportive. Member institutions have given their backing to the venture. But this is only the beginning. In the next few months we have to review our level of ambition, assess the opportunities and threats we face, and decide what OpenupEd needs to become if it is to assume an enduring position in this turbulent marketplace. We hope to learn much from dialogue in the next two days that will inform our strategic position.

Quality

Let me move briefly to quality. Last year in Paphos we launched the second edition of the E-xcellence manual, based on a series of projects over seven years with the active involvement of more than 50 universities and several national quality assurance agencies. Increasingly, it has become a reference document for quality in e-learning.

I am delighted to announce that, in partnership with European Association for Quality Assurance in Higher Education and the European Foundation for Quality in eLearning, we have obtained funding and will coordinate the new project SEQUENT in 2014. The project aims to promote excellence in the use of ICT in higher education, with the goal of assisting European Universities to respond to the European Commission's Modernisation Agenda, and to enhance cross-border collaboration in the implementation of innovative and ICT enhanced partnerships.

I am particularly pleased that we will be working closely with ENQA and EFQUEL in this venture. We will achieve much more together than we can do separately. We seek to build on what we and they have already achieved, and together we hope that we can move closer to a systematic embedding of e-learning quality standards across the nations of Europe.

Strategy

Next I turn to EADTU's work to renew its own strategy. As you would expect, our new strategy, approved yesterday by the General Board with just a little bit of work still to do, is a mix of continuity and change.

The continuity lies in the fact that we remain an organisation dedicated to serving the interests of its members. We will continue to be a valued source of information and policy intelligence to members. We will continue to develop and maintain tools and services of benefit to members and to develop and maintain models for cooperation between members.

The change lies in a new level of ambition for our role in the wider ecology of European higher education. The sense of disruption that MOOCs have created is only one of the reasons for our sector to take stock collectively. The economic crisis is forcing many higher education systems to do more with less. The demands from governments for higher education to respond to economic and

social needs will not go away. We are not immune from any of these pressures.

Added to all this is a particular issue for us: in a world where conventional universities are increasingly using the means at their disposal to teach online and remotely, how we will as distance teaching institutions adapt to the new ecology as it emerges. No-one is taking our niche for granted. But equally, higher education has a genius for absorbing change and preserving its core identity, and none of us can predict how and when our environment will eventually find a new equilibrium and stability.

Faced with what many have characterised as a blurring of the boundaries between our sector and the rest of higher education, we are faced with two broad options. One is to stand on the border and defend the ground we hold from all attempts at incursion. The other is to recognise the tendency of the besieged eventually to capitulate, and instead to join forces across the boundary to create the future together. This is the option that EADTU has chosen.

It is captured in the first three of our new strategic objectives:

1. Develop a vision for the role of open and flexible education in the development of European higher education, and influence European policy in accordance with that vision.
2. Promote high quality open and flexible learning within the European learning space, to identify and serve the target student groups for open and distance learning.
3. Empower European universities in the deployment of open and flexible learning.

(Although we may yet modify the wording of the third objective.)

Through these commitments, we seek to position ourselves, as an association, and as a sector, as leaders in the transformation of higher education in coming years between now and 2020. Our aim is to offer our expertise to the wider sector, but certainly not as the people who have all the answers and are in search of a compliant audience willing to learn. Our expertise is only useful if we offer it in a spirit of partnership and mutual respect with willing partners in the conventional sector. We believe that there is an appetite for such partnerships, and we are convinced that an active engaged stance is the option that will best protect the interests of EADTU members.

Opening up Education

And this brings me to the final part of this address. In late September, the European Commission published its Opening Up Education initiative. What it seeks to achieve is captured in the subtitle: “Innovative teaching and learning for all through new technologies and Open Educational Resources”.

Out of 16 actions that the Commission will take, I want to highlight just two:

The Commission will carry out a comprehensive exercise of foresight scenarios for education in Europe 2030, in consultation with relevant actors such as ERT, EADTU, LERU, EUA and European Schoolnet

The first of these serves to demonstrate that EADTU has already successfully positioned itself as a

prominent actor in this domain. Earlier this month, following publication of the Opening Up Education initiative, we organised a high level summit in Brussels, attended by EADTU members, leading players in the Commission, representatives of national governments and partner European associations. The summit displayed our expertise, and our commitment to an active role in the modernisation agenda. Everyone there could see that EADTU speaks with authority on behalf of its members and is serious in its intention to play a leading role in support of the Commission's goals – not because they hold the purse strings, but because their goals are consistent with what we seek to achieve, and the values and practices which define us as open and distance learning institutions.

Through the new programmes Erasmus+ and Horizon 2020, the Commission will support educational institutions in developing new business and educational models and launch large-scale research and policy experimentations to test innovative pedagogical approaches, curriculum development and skills assessment

The second action points to a major opportunity for EADTU to exercise leadership. So we have begun work to develop proposals for an action programme to promote and accelerate the modernisation of higher education in the EU by sharing our expertise in open and flexible education to support institutions and systems of higher education across Europe. This is what we have come to call the EMPOWER programme. We envisage partnerships in a number of nations, consisting of existing institutions and networks with expertise in open and online teaching and learning, and other institutions that seek to become more flexible and responsive.

So we have a demanding, challenging and exciting year to look forward to. So please come back next year and find out in Krakow how we have done!

Thank you for listening.

Jean Chambaz

Jean Chambaz is President of our host university for the conference. He is Professor of Cell Biology at UPMC, and Head of the Endocrine Biochemistry department at the Pitié-Salpêtrière hospital. He has played a particularly prominent role in the development of doctoral training in France. He founded the Institute of Doctoral Training at UPMC, the first of its kind in France, and this led to his becoming the first president of the Council for Doctoral Education at the European Universities Association from 2008 to 2011.

Despite the fact that he is on record as saying that university rankings have little value because none of them is rigorous, I am sure he will not mind me saying that he leads a university that is ranked 2nd in France, 8th in Europe and 42th in the world in the Shanghaï 2012 rankings.

Pierre Jarraud

Pierre Jarraud is a mathematician and maître de conferences at l'Université Pierre and Marie Curie. Pierre also leads the département des Formations Ouvertes et à Distance, in English the Department for open and distance training. He has played an active role in the development of les TICE (technologies de l'information et de la communication pour l'éducation, or ICT in education) at local and national level. He was one of the driving forces behind the l'Université en ligne that began in the

1990s, and is now in charge of the campus numérique CampuSciences.

Most important, Pierre is now President of FIED, le Fédération Interuniversitaire de l'Enseignment à Distance, one of our partners in the organisation of this conference.

Simone Bonnafous

Simone Bonnafous is directrice générale de l'enseignement supérieur et l'insertion professionelle du ministère de l'Enseignement supérieur et de la Recherche. To translate, she is the Director General of Higher Education and - well l'insertion professionelle is a challenge, but my best attempt is entry into the labour market - in the Ministry of Higher Education and Research. She has a distinguished record as an academic in the field of information science, political and public discourse. In 2006 she was elected President of l'Université Paris-Est Créteil, a post which she held until March 2012. In an article that month in Le Parisien, she was reported as hoping for a sabbatical year after the six years of institutional leadership. Somehow that never quite happened, because it was only three months later that she took up her present post at the head of the French higher education system.

Antoine Rauzy

Antoine Rauzy is a mathematician and systems engineer. He is currently Professor at Centrale-Supélec, a strategic alliance between the École Centrale Paris and the École supérieure d'électricité, two leading grandes écoles in the field of engineering. His research activity concerns Reliability Engineering and System Safety. Throughout his career, he has worked in close association with industry and he has had a particularly close relationship with Dassault Systèmes, where from 2008 to 2010 he was head of the research and development department in charge of developing System Engineering solutions.

On the Ecole Polytechnique website, where we worked from 2010 until this year, his profile still survives, and in it he includes the following quotation: 'In theory, there is no difference between theory and practice. In practice, there is.' If his presentation is as intriguing as that, we have much to look forward to.

Clara Danon

Clara Danon is Head of the Mission Numérique pour l'Enseignement Supérieur (MINES), a part of the Ministry for Higher Education and Research. Le MINES is, alongside le FIED, our partner in the organisation and hosting of this conference. Clara and her colleague Anne Boyer attended the conference in Paphos last year, and I am delighted that we have been able to build on the relationship we established there, to bring this conference to fruition.

Clara's task of as Head of her mission is to support and steer the development of online resources and services for French higher education to promote the sharing of expertise and resources in increase the accessibility of higher education to all. In this capacity she has overseen the establishment of a network of collaborations amongst French higher education institutions known as universities numérique thématiques.

Keynote Speech: Maria Amata Garito

A Strategy for Europe in the Age of the Knowledge Society: Building New Knowledge Networks among Traditional and Distance Universities. New Internet-based Contents for a Global Labour Market

The context

A generational clash of enormous scope is emerging within our institutions. The criticisms TO university advanced 15 years ago were "waiting ideas'': waiting for the new Web and a new generation of students able to effectively put in question the old model of University. University in the knowledge society globalized and interconnected has reached a turning point, we are at a crossroads between stagnation and renewal, between atrophy and the Renaissance.

Universities can make use of the most powerful platform in history to make available the expertise, the knowledge, the skills to defeat ignorance.

In 2016, according to Cisco Systems, there will be 10 billion mobile devices connected on Internet compared to UN world population estimated at about 7.3 billion of people. This means that, on average, each person will have more than one device for the connection.

Unfortunately, we must see that the political world has not really become aware of the value o this great transformation and all school and university reforms of the various countries are still focused on their own models of schools and universities. While Society moves into global economy, School and University still produce local competencies. At present, however, there are very interesting facts going on worldwide: a number of prestigious universities, such as Harvard, Stanford, M.I.T., are tearing down their ivory towers by networking with other companies to make their content available on the Web. The technological network is also working to create a network of universities and people, with the purpose of transmitting and sharing each other's knowledge.

In the "virtual classrooms" students of different cultures and languages confront and interact with each other without frontiers and borders playing an active role and becoming active builders of new knowledge according to collaborative dimension of learning. Therefore, the problem, share by all universities worldwide, is not whether education reproduces or not social inequalities, but how to better adapt to this system and how to create, within the context of a globalized economy, systems that could develop integrated teaching and learning processes, using different languages for communication of knowledge, and open, operating without boundaries and limits of space and time.

University systems should be able to develop an educational space "intra muros” and "extra muros”. Distance university, in the new context, is not an alternative to traditional university, but it represents a new opportunity, a way to acquire new vitality in the processes of teaching and research in traditional universities.

The rebirth of the University

Today, new points of access toward knowledge are everywhere, with the Internet, the PC, iPhone or iPad anyone can have access to knowledge without limits of space and time. This reality highlights the fact that all face-to-face students will become, more and more quickly also at distance students, because they will try to read up themselves outside university. Many universities around the world fail to meet the learning needs; the majority of undergraduate courses churn skills that are not required by the labour market, more and more students around the world enrol in college courses online or distance universities.

In fact E-learning is a reality in full growth; nowadays the market of e-Learning is estimated approximately $ 91 billion[1], and is expected to get around 168.8 billion dollars by 2018[2].

In the United States, according to the National Centre for Education Statistics[3] is progressively growing - for the ninth consecutive year - the number of students enrolled in at least one online course and at the end of 2011 had exceeded 6.7 million [4], among the student population. In 2011 69.1%[5] of Deans and Presidents of U.S. institutions of higher education considered online learning a key factor in the change of traditional universities.

The European Union in 2011, is the second largest market for e-learning, it has a growth rate of 5.8% per year, which leads from 6.1 billion dollars in 2011 to the expected 8.1 billion dollars of 2016. There are approximately **3 million students enrolled in online courses**, half of whom were enrolled in Telematic Universities and Open Universities, while the other half at traditional universities that offer distance learning courses.[6].

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1 Global e-Learning Investment Review - IBIS Capital - January 2013 http://edxusgroup.com/wp-content/uploads/2013/05/13-01-08-IBIS-Capital-e-Learning-Lessons-for-the-Future.pdf

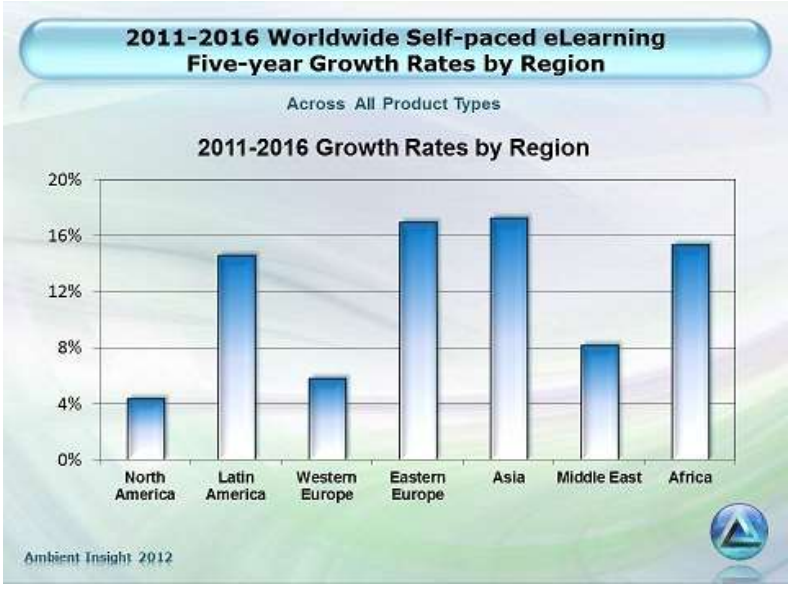
2 http://www.prnewswire.com/news-releases/global-market-for-elearning-to-reach-169-billion-by-2018-private-tutoring-nears-103-billion-in-market-value-180027521.html

3 http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012174rev

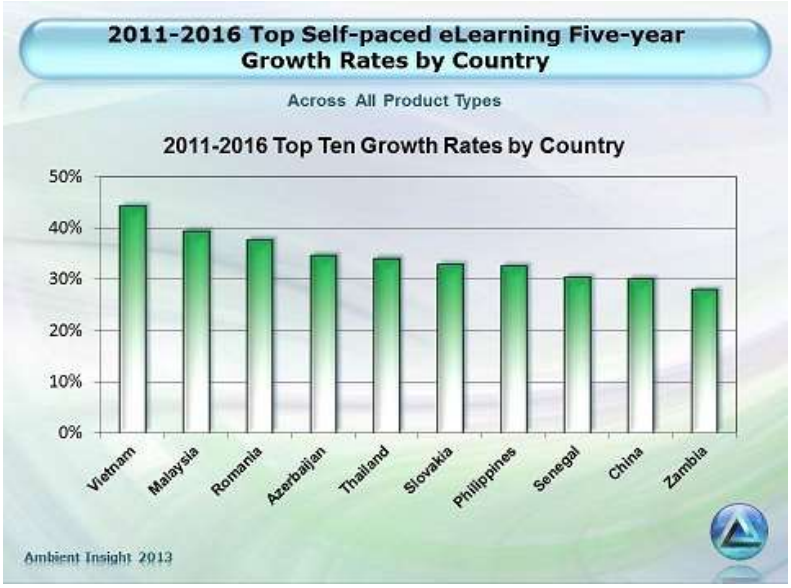
4 http://sloanconsortium.org/publications/survey/going_distance_2011

5 http://www.prnewswire.com/news-releases/babson-research-study-more-than-67-million-students-learning-online-186023812.html

6 http://www.distancelearningportal.com/articles/191/why-learning-at-a-distance-or-online.html



Growth rates for 2011-2016 global macro-regions



10 countries with the highest growth rate in the field of e-learning[7]

A real change for the University

The generations of new students, the digital natives, will no longer do unless you use the network to develop knowledge and skills. The transformation of the University is really happening. The creation of a global network for Higher Education in which teachers and students from different parts of the world participate in the collaborative construction of knowledge is not a utopia, indeed it can be a solution to bring a new vitality to the University by featuring them on the networked economy global.

The University of the 21st Century should increasingly be characterized as a global network, an

7 http://www.ambientinsight.com/Reports/eLearning.aspx

ecosystem, should make deep structural changes and its future should result in different operating models:

1. Exchange of educational content: teachers publish their course materials available free on the Internet for everyone:
2. Co-creation of educational content. The collaboration between teachers of different universities of the world together to create content and new teaching materials using wikis and other tools;
3. The Consortium for collaborative learning. The University should stop being a place to become a node in a global network of teachers, students and institutions engaged in collaborative learning, without losing its own identity, its own campus and their brands.

Alliances for Knowledge

Over the past years, there has been a flurry of some relevant initiatives by the main American universities and, recently also of Europe, with the OpenupEd Portal of the EADTU, and the Knowledge Alliances and the MOOCs (Massive Open Online Courses) to offer online university courses including free-access videolessons, texts and practice work.

American Universities invested tens of millions of dollars to MOOCs development and were financially supported by the American Government itself as well as by the World Bank.

Coursera, an initiative promoted by Stanford and supported by 85 global partners, by now, having a catalogue of 433 courses can count on over 4.5 millions of enrolled students[8] with courses followed even by 100.000 students. Today the new "gurus" of the university, the Saint Thomas of the present world, are professors who, through their video lectures, are the most accessed on the Web. A point to think about is represented by the business value connected to these courses that is getting apparent; American teachers are creating their own start-ups, the main companies, Coursera and Udacity, edX, have already started their own for-profit companies and are already rely on profitable business models, such as the screening of the curricula of the most brilliant students, to be submitted to the interested companies for a job placement purpose or for filing purposes of the data concerning the aptitudes and competences of the enrolled students, that represent an interesting business value for marking and advertising companies.

In addition, we should consider an aspect that could become ever increasingly challenging in a globalized society: the cultural monopoly of those who have the economic power to post contents on the Web, cultural monopolies that, actually, are not always a synonym neither for freedom nor democracy.

Reinventing the university

MOOCs or online videolessons are not replacing universities as such. There are many short-comings in pedagogic-didactic models and in MOOCs evaluation systems. I am worried about some remarks made by Daphne Koller, who designed Coursera, when she states: "*Now, how do you grade the work of 100.000 students if you do not have 10.000 tutors? The answer is, you need to use technology to do it for you. And the solution we ended up using is peer grading*". Through these assessment model, credits or certifications are awarded. In my opinion, without a true educational model and a true evaluation model it is impossible to deliver certificates stating the acquired skills.

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8 https://www.coursera.org/ verificato il 29/8/2013

We have to place free online video lectures and all MOOCs contents into the proper historical and cultural setting; they should be considered as new encyclopaedias democratizing the access to knowledge and offering quality contents worldwide. This is certainly a greatly valuable element, however without a strong supporting system, without a new organizational and pedagogic framework we cannot think to replace university as such, as a real and virtual place where the experience and competence of the professor is transmitted to the students through continuous interaction models, an interaction between students and teachers, youths and adulthood, experts and non-experts enabling a critical development of knowledge and therefore, its transformation into knowledge. A new the pedagogic model is developing, that of the "flipped classroom", model in which the teacher posts on the Web videolessons and more-in-depth study materials, and the students follow them at home and then discuss the issues treated in the videolessons during classroom time interacting with their teachers and colleagues. This model is widely acceptable since it allows for interaction among teachers and students enabling traditional universities, that carry on part of their activities at distance, to keep their role of special places where people cultivate the Life of the Mind. Certainly, the sharing of materials is the first important step, since as the Global University Network will develop, the amount of published materials will become enormous: digital texts and books, but also materials such as notes on lessons, exercises, exam texts, video lessons can grew ever more and supply different perspectives and interpretations of a same content. The following level of collaborative creation of knowledge is beyond discussion and sharing of ideas, getting to a true co-creation of contents. A platform in which all the universities of the world can post their own contents and the students can interact with these contents and enrich them with their thoughts, thus creating new interpretations and this could actually allow the universities to become places for producing the global knowledge, without losing the local richness and characters; this model can be concretized with the birth of new consortiums among universities.
American universities keep on acting by themselves, relying on their prestige and on the fact of having from their side their technological leadership as well as that on contents. I have always hoped that European universities could understand the value of achieving a global leadership on contents; unluckily, it is difficult to make the universities of different European countries cooperate since many of them keep on protecting their own national identities.

The new knowledge markets

In the market of the twenty-first century Europe is aware of the fact that hardware and software are developed mainly by American, Korean or Japanese industries; American industry has now almost completed its colossal implementation of a global telecommunications network that ensures the entire coverage of the planet. Mastering and make profitable this network will not be a smooth transition. In this context, Europe has a card to play: developing a policy of the knowledge industry, create a network with the contents of its Universities: its culture that has been and is the basis of human development.

Europe through new technologies becomes a strong player in the creation of cultural content on the Web. Knowledge networks among the best universities in Europe, linked to those of other countries, especially with the universities of the countries of the Arab world and Africa, can create new wealth; the best universities can offer to all, in an open and democratic way, the teachings of the greatest scientists and intellectuals of the world. We will be able to build in a virtual way the university model that led to the emergence of European culture: the medieval university.

In the medieval universities, the curricula were common, students did not belong to a single university, but they could take courses in all universities existing; they moved from one location to another in order to follow the lectures of the best professors, facing exhausting travel by foot or horseback to take a course in law at the University of Bologna or a course of theology at the University of Paris. Even the teachers travelled from one site to another; the best professors were called by the universities since their presence gave prestige and power, but also attracted masses of students and young people from all over Europe.

New technologies allow mobility of ideas and, besides the physical displacement, virtual displacement of professors and students. The distance university allows interaction between professors and students from different universities of the world and can actually give quickly an adequate response to the needs of internationalization of university training system, in order to prepare for the skills required by the new labour markets, but also to implement products required by the Net Economy.

The creation of a European distance university can give substance to the proposals outlined in the White Paper of Jacques Delors, former President of the European Union, "Growth, Competitiveness and Employment - The challenges and ways forward into the twenty-first century"; in the 1993 Delors proposed EU member countries to build a new competitive and inclusive economy, based for its growth on "*human capital, the main resource for all forms of development."*

Education and training are identified as key factors for European economies development and to cope with the challenges of international competition. The fundamental principle behind every action concerning training and education, according to the Delors Report, was to enable the development of human capital throughout the period of active life . The goal should be to "*learn to learn throughout the course of life*".

In the " White Paper ", one of the root causes of unemployment is found in the inadequate level of education and vocational training facing both the rapid changes in technology and the challenge of economy globalization.

The central role of education and training seems to be the last chance to remedy the issue of employment. In the European Council in Lisbon in March 2000, all EU countries seemed aware that 'politics' on the 'centrality' of educational policies and training were winning strategies for sustainable economic growth. Each country appeared convinced that economic progress, employment, internationalization would have resulted from the ability to innovate, and that innovation itself depended on the links between the production of knowledge through research and its transmission through education and training.

Unfortunately, these principles and beliefs have not yet largely applied. With regard to the training we have seen that these proposals are not standard practice.

The European Union has succeeded in creating a common economic and monetary area, a common area making borders increasingly weaker for goods, capital, services and people movements, but it was unable, however, to weaken the boundaries for the education and research sectors. Member States, with a more or less long history of nation states, have decided to protect their national identity in terms of education, research, culture without actively relate with the real cultural history

of Europe, where in the Middle Ages Universities were born. A true European higher education are has not be realised yet. Today the strategy to build the future should rely on cooperation between university and industry aimed at creating alliances to jointly build an Internet-based portal of competences for the European labour market. The paradox is that we are living in the European countries is that there are thousands of job position that are vacant because of lack of the corresponding professional competences. In 2015 we expect 900.000 new posts in emerging fields and distance education should play an essential role to training these competences.

A strategy for EADTU: creating alliances between European traditional and distance universities to develop a new European Distance University model

The idea I'd like to suggest here is to stimulate EADTU in creating a new network with the best European distance universities, the best European traditional Universities, and the European small and medium enterprises, with the aim of creating an European Consortium for the development of an European Distance University. This network could be the starting point for common curricula design and sharing, according to the Bologna and Sorbonne guidelines, and for the design and development of academic didactic contents for the Web, but also for implementing new pedagogical models that put in practice both distance and face-to-face teaching-learning processes, that give answers to the internationalization needs of the higher education systems, that satisfy new global labour market needs, and that create a global competition using European MOOCs. I think that the EADTU should engage in the promotion and coordination of web-based shared knowledge spaces not to clone or mac-donaldize educational and training systems, but to assure a new balance between unity and diversity: unity of values and tradition that memory leaves us, but also the diversity of cultures and languages. Involving several, different universities offers a pool of human resources and knowledge so rich as to allow choices of excellence in a wide range of sectors. Involving enterprises, furthermore, offers the opportunity to face the gap between training and production, stimulating the collaboration between trainers and users and answering to the need for continuous education of the human resources.

When the contents of the courses on the Internet and the course delivery models are defined by international level academics, users are guaranteed as "consumers of education" since that course designers and providers are easily identifiable.

If it is true, as I believe, that the quality mark will determine the competitive challenge in the higher education and training global markets, a distance university based on a network among the best traditional universities of different countries will surely win the challenge and will be the absolute protagonist of the new frontier of e-commerce and new knowledge markets. So today, consortia for distance university can meet the needs of the new knowledge market: exposing a brand of quality; guaranteeing users and students; helping traditional universities in the transformation from an isolated system divided into classes and study materials and a repetitive system of pre-established knowledge, in an open system, capable of updating and integrating all information available on the network and realize the exchange of knowledge in the world.

Distance University today allows to innovate traditional universities and make them move under open skies, with no boundaries, creating new knowledge, but also new values.

Keynote Speech: Sir John Daniel, Stamenka Uvalić-Trumbić:

Do MOOCs announce a new paradigm for higher education?

Introduction

It is a pleasure and an honour for Sir John Daniel and me to give a keynote address at this important conference. Let us begin by congratulating EADTU on great work that it is doing to alert European universities to the importance of online learning. The principal development in higher education this decade will be the increasing use of eLearning, so the particular focus that EADTU has given to quality assurance is vital. I am particularly pleased to have been part of the launch of the Global Task Force on Quality in eLearning, which brought together partners worldwide in cooperation with UNESCO around the E-xcellence initiative led by George Ubachs.
Our title today is: Do MOOCs announce a new paradigm for higher education? Any new paradigm must fit the challenges that higher education faces in the contemporary world. Earlier this year The Economist newspaper devoted its cover article to youth unemployment. This is probably the greatest challenge that higher education now faces. The Economist article concluded: "Policymakers know what to do to diminish the problem – ignite growth, break down cartels and build bridges between education and work. New technology gives them powerful tools too." We shall focus on two parts of this advice, building bridges between education and work and exploring a new tool that technology provides: Massive Open Online Courses (MOOCs). Our presentation will be in three sections and we shall alternate in presenting them. First, I shall present some global and regional figures on the impact of the crisis on young people. Then I shall recall trends that emerged at the 2009 UNESCO World Conference on Higher Education. This conference convened just as the current global economic crisis began, although few realised just how deep and long the crisis would be. In section two, Sir John will look at MOOCs – a remarkable development that burst into the consciousness of global higher education last year. Finally, I will ask how we can ensure the quality and relevance of these recent developments in higher education: new curricula, new types of awards and new delivery systems. I shall highlight a new Guide to Quality in Online Learning and a new body, the International Quality Group of the US Council for Higher Education Accreditation, CHEA.

Part 1: Generation jobless

First: some figures. This chart taken from The Economist shows the number of young people who are neither employed nor in education or training. The world total is nearly 300 million – or one quarter of the world's youth. The situation is bad enough in Europe but, even in percentage terms, South Asia, the Middle East and North Africa fare much worse. Yet at the same time employers complain that they cannot find graduates with the right skills and competences. There is a serious gap between education and the job market. What is higher education doing – and what should it be doing – about this huge problem?

The 2009 World Conference on Higher Education

UNESCO organizes world conferences on higher education every ten years. The last one was held in 2009 and I had the privilege of being its Executive Secretary. The conference participants identified the new dynamics impacting on higher education. The predominant trend is increasing demand, much of it unmet, especially in the developing world. To address the challenge the range of providers is diversifying. They range from so-called 'world-class' universities in an elite tradition

focused on research to vibrant new and different providers more focused on developing skills and competencies. The private for-profit sector is playing an increasing role and nearly all providers are making use of ICTs and eLearning, some of them to teach across borders. We also see the emergence of what we shall call 'post-traditional' higher education. New curricula and shorter qualifications attempt to address the crisis in the relationship between higher education and the labour market. Not long ago we used to joke about Hamburger University, the McDonald's training centre that has campuses in seven countries. Margaret Thatcher shocked the other UK universities when she gave it her seal of approval with a visit in 1989. But today, in partnership with Manchester Metropolitan University, McDonalds is training dozens of staff in a custom-designed foundation degree in managing business operations, building on already recognised courses. This is just one example of many links being developed between business and education. At last year's conference of the European Association for International Education, Allan Pall, then president of the European Students Union, talked about the death of long degree courses. The foundation degree is a good example of a shorter qualification. We shall return to this later. Sir John will now suggest how MOOCs and related developments can be helpful in addressing these challenges.

Part 2: MOOCs: a new paradigm?

We now move to the second part of our talk: MOOCs. Do they announce a new paradigm for higher education? I shall first give our answer and then our arguments. MOOCs are not a new paradigm for higher education – but they may accelerate other trends that will lead to a new paradigm. We shall be brief on the history. A MOOC is a Massive Open Online Course. OER were the long fuse that detonated the MOOCs explosion. Most MOOCs are basically OER with some computerised assessment questions. The University of Manitoba, Canada, first used the term MOOC for a course Connectivism and Connective Knowledge in 2008. Two thousand members of the public took the course free online. But MOOCs really made news last year when elite American universities like Harvard, Stanford and MIT joined in. I use the first MIT course, Circuits and Electronics, as an example. It was massive, attracting over 150,000 learners. It was open, meaning free and without admission requirements. It was online worldwide and attracted learners in 160 countries. You might question whether it was really a 'course' because if you passed the computerised tests you could buy a certificate of completion but you could not receive credit for use to study at MIT. And, of course, we would hang our heads in shame if our distance teaching universities had dropout and failure rates like these. That was last year. Since then there has been a stampede to join the mooing MOOC herd. This is a copycat phenomenon. Few universities have a clear idea of why they are offering MOOCs. Professor Tony Bates, the respected blogger on educational technology, predicts a shake out in MOOCs next year as evaluation results come in and financial officers start to ask harder questions about cost and benefit. Already, with so many providers piling in to offer them, the definition of a MOOC has become much more fuzzy. One joker remarked that the meaning of every letter in the acronym MOOC is now negotiable. But in terms of the global economic and youth unemployment crises, this diversification is good. As MOOCs multiply they could reinforce some helpful trends. Many of those taking the first MOOCs already had university degrees, so they provided informal professional development for well-qualified people. Two things are needed to make MOOCs more useful. First, we need MOOCs in employment related topics at all levels. Second, people need credible qualifications for successful study. Both are happening. The range of topics is diversifying fast and various bodies are giving recognition for MOOCs, even where they did not offer the course themselves. At the beginning of next month I shall have the honour of presiding at the launch of the Open Education Resource university, the OERu. This is a global consortium of institutions, although with only three European members so far. It is dedicated to helping students who want to learn by studying through OER or MOOCs to get tutorial support and proper recognition for their learning. This is an example of the wider trend of the 'unbundling' of higher education, with different organisations handling different parts of the process. Let us note three

trends that are being accelerated by MOOCs. Calling them a new paradigm for higher education may be exaggerating, but they will give universities plenty of challenges of adaptation. The first trend is shorter courses. Online courses seem to work best – that is to say students succeed in them better – if they are between five and six weeks in duration. This favours intense concentration on a particular topic. We also note a second, related trend. The qualifications that define the output of higher education are being put into new bottles. New types of awards, such as Open Badges, are emerging. These badges, which are placed on the Web, carry more information about what was studied and how it was assessed than the usual university transcript. They allow learners to get recognition for short-cycle studies on economically relevant topics and to aggregate a series of badges into a conventional qualification such as a degree or a diploma. But the greatest impact of MOOCs is to accelerate the trend to online learning. Until recently online learning, like the rest of distance learning, was thought to be of low quality. You know that is not true and you have been working to improve the image and the reality of distance learning for years, particularly in the distance teaching universities. Happily, the rush of Harvard, MIT, Stanford and company into online learning has shaken the traditional belief that distance learning is inferior. Online teaching and learning is now part of the future of all universities. MOOCs should be seen as a pilot project for the offering of regular credit programmes online at scale. eLearning has been spreading steadily for years and its growth has been well documented by Tony Bates in his annual surveys of the scene. He believes that 2013 is a breakthrough year for both the volume and the quality of regular online offerings. We don't have precise figures for the students taking courses online because many universities do not report them separately. However, it is likely that 80% of US students will take some of their courses online next year. So in the world as a whole the number of students taking regular courses online is probably already larger than those taking MOOCs, although the MOOC numbers attract most of the attention. So let me end by asking what must happen for MOOCs to stimulate rapid developments in the teaching of regular programmes online? The simple answer is that universities must develop policies for doing that, execute them determinedly and pay close attention to quality. I hand over to Stamenka, who is at the centre of some recent developments in quality assurance.

Part 3: Quality development in eLearning

Let me now look now at some responses to the challenges of quality in online learning. I shall talk about the work of two organisations with which I am associated: Academic Partnerships and the US Council for Higher Education Accreditation. Various organisations partner with universities to help them offer courses online. We are both advisors to one of these, Academic Partnerships or AP. We took on this role because AP's mission to increase access to quality higher education at low cost matches our own values. AP's aim is to to lead students into online award-bearing programmes and have them graduate at rates at least as good as those of the students on campus. The foci of AP's contribution are quality and viability. This means the quality of the transformation of courses into online formats, the effectiveness of the organisation of student support, and the viability of a model with lower tuition fees and larger enrolments. In this spirit AP commissioned A Guide to Quality in Online Learning. Two distinguished South African experts, Neil Butcher and Merridy Wilson-Strydom wrote the Guide, which Sir John and I edited. It was published in June in English and Chinese. The Guide references some of the important work that EADTU has done on this topic that I mentioned at the very beginning. We are very pleased that it carries a Creative Commons CC-BY-SA licence. It is an OER that you can translate, adapt, distribute and use as you like. Copies are available to you at this conference. In the light of the success of this Guide to formal online learning the same team is now embarking on preparing a guide to the more informal types of learning, such as OERs and MOOCs, which Sir John just mentioned. For want of a better term we are calling this 'post-traditional' higher education. What about the quality assurance of informal online offerings such as MOOCs, OERs,

experiential learning and other innovations that are emerging worldwide? We believe it that both new course formats and new qualifications require fresh approaches to quality assurance. In this context I mention my work as Senior Advisor on International Affairs to CHEA, the US Council for Higher Education Accreditation. In this capacity I helped CHEA to launch an International Quality Group last year. Although organised from the US, it has a global outreach and is open to membership from a wide range of higher education stakeholders worldwide. Its mission is the quality implications of the new developments in higher education that I just mentioned. Our provisional term to designate them is 'post-traditional' higher education. The US Council for Higher Education Accreditation (CHEA) is looking at developing a "quality platform" to review the quality of post-traditional provision. Such reviews would begin by judging the provision against its primary purposes: what is it offering to the student? They could use standards to judge the provider's success with regard to student learning and might benchmark the capacity of provider and its performance in relation to comparable providers. Peers with expertise in this non-traditional sector would conduct the reviews. A provider that successfully completes the review would be identified as a "Quality Platform Provider." Colleges and universities could use the Quality Platform designation as an indicator of quality when considering the award of credit or recognition. Quality assurance agencies could refer the Quality Platform in reviews of these providers that they might conduct.

Conclusion

We shall leave it there. We have avoided excited talk about a revolution. Evolution rather than revolution is the historic pattern for universities. Even talk about a new paradigm is probably an exaggeration. Nevertheless, as higher education reaches a larger proportion of a growing world population it is effervescing with new approaches. Although technology is not the primary driver of these approaches, it is certainly giving them greater momentum. In the process it may help higher education to address the scourge of unemployment among young people.

Abras de Medeiros Maria Cecília, Felgueiras Louro Margarida:

Innovative pedagogies

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Abstract

This article describes a pedagogical experience with a video to explore the school patrimony. The experience was held with university students from the History course and reflects the pedagogical possibilities of the Proposed Virtual School Museum. This experience intended to show the cultural heritage present in the school. Having the TIC as mediators, data was collected and materials produced in order to be used both in the classroom and as distant learning. The methodology adopted promoted the work with media, the local History, the school History, its spaces and objects. With this experience it was possible to discuss the teacher's training processes, to rethink pedagogical practices and to produce a flexible working environment for the teacher trainees either in basic or higher schools. Using videos, blogs and photographs it constituted an enriched learning environment and contributed for debates about curricula involving blended teaching and learning. The creativity of the teacher trainees was evident in the way they surpassed the more routine stances and constituted good practices of transitions to open and flexible learning. In conclusion, the experience showed that educational practices can and should focus more on the learning beyond the classroom. Furthermore, the use of informational technologies was an important tool in the process of mobilizing school communities.

Keywords: Innovative pedagogical practices; virtual museum; school patrimony.

1 INTRODUCTION

The article originates from a methodological proposal by the Supervised Internship II module, developed with students of the History course, within a Brazilian public university. It lends itself to a reflection of the obtained results from the guidance of that pedagogical training practice, starting with the emancipatory elements deemed significant for teacher education.

The methodological proposal, as structured for the Supervised Internship II module, intends to be an innovative view of the pedagogical practice, by the way that it was accomplished and, specifically, by the way that the cultural heritages of schools were incorporated. The use of media was thought of as

an interventional way to preserve the memory and the history of an institution within the scope of the History teacher education. To the student interns, it was proposed that they would learn the history of the school, its objects and spaces, in order to use that knowledge in their own classes, during the practical training by adopting a local History perspective.

The proposal was characterized by the need to re-think the traditional practices of the student interns, as well as the changes to be implemented. By following Kortagen, Loughran and Russel (2006, p. 1022), it tried to "(arrive) at a pedagogy of teacher education that is both empirically based and practically oriented". Therefore, we gathered the students on a collective discussion over some of the issues referring to the school collections already menaced in three of the oldest schools of São João del Rei, and over some of the themes to be explored on the completion of their works with such concepts as: school equipment culture, school patrimony, school objects, spaces and educational times. The student interns chose the following topics as their initial proposals: a) The school time and space — the past and present of characters, environments and materials; b) Bullying — the violence of students on those who "deviate from the pattern" in the everyday history of the school; c) The spaces and the memories of the primary school.

The aim of these proposals was to reach the teachers and technicians of those schools. All would end up participating in the video "school virtual museum" — this required some training in the domain of communication technologies. We invited a media student[9] and designed a workshop to provide them with — Video-Museum, composed by four online oriented modules: 1) Introduction to video-museum (and presenting the workshop), 2) Planning the screenplay, 3) Techniques and subsidies to the recording, and 4) Editing — the pacing of the video (and a tutorial of Movie-Maker).

The development of these proposals was differentiated depending on the techniques and approaches used. Not only the knowledge as well as the affections and feelings of the student interns were set into play. In all cases videos were made, some combined it with photography and others complemented their work by the creation of a blog. Different approaches were used: from the material culture embodied in the school objects and buildings; to wall writing graffiti in walls, courtyards, toilets and classrooms of a public middle school; and to the memories experienced by a former student with African descent.

This didactic proposal originated by the necessity to revise the already crystalized pedagogical discourses and was embodied by the execution of the practical dimension of the student interns at their assigned schools. This approach was not intended as a modernization of History classes but as an articulation of the historical knowledge with new languages, by reflecting on the process. (Jesus, 2007, p.97). As Nalme Jesus states, "video is an instrument of memory and documental registry, transmitter and maintainer of facts happened". (Ibidem). It was also necessary because of the unsatisfactory and troublesome conditions that occurred after the alteration of the academic calendar of a Brazilian federal public institution, where the Supervised Internship II module was taking place. This situation would be seen as problematic because of the change of beginning and ending of the academic year of 2012[10]. Such a change would disrupt the completion of the curricular

9 The online workshop was oriented by Eduardo Gaio, a student finalist of the Communication course of the UFSJ, in four sessions in the span of four weeks.

10 Those activities were planned for the months of December, January and February, usually school holiday.

proposal, both pertaining to the guidelines as to the implementation of projects within the scope of the public school.

With the new didactic and pedagogical proposal the guidance of the Supervised Internship II module was developed through the months of November 2012 to February 2013, accordingly to the adapted calendar to supress the academic months occupied by the university teachers strike. The aim of the project was to develop a pedagogical action close to primary and middle school students within the context of the discussion for a new teacher education model.

The Licentiateship and the Bachelor's Degree are understood as two different teaching platforms within the educational institution, articulated but enjoying a relative autonomy. A Bachelor's Degree will train a student at the level of the acquisition of specific knowledge, of the discipline of thought and skills, by the way in which a question is made and a problem is addressed, always in view of a certain range of professional occupations. Nevertheless, in Social Sciences, one of the most immediate occupations is teaching, to all levels of education each with its own specificities. Education, as a main field of action within contemporary societies, faces specific issues and constitutes a complex and precise empirical field. The search for solutions will necessarily lead to complex approaches and research methodologies, as well as multi-referential interventions that characterize the Education Sciences.

To erect the field of knowledge as the sole variable of the teaching activity is to ignore not only a vast field of scientific knowledge, but also the reality of the student as a person and its insertion within the social context. Although the changes can represent processes that generate insecurity, anxiety and opposition, they are necessary so that new teaching attitudes are implemented — taking into account that to reflect on their own practices it may point to new pedagogical possibilities. The quality of pedagogical practices is, mostly, the responsibility of teachers and the organizational climate of every department. These will sometimes become hermetic structures, keepers of lore necessary only as knowledge in their own professional field of action and their own political options.

2. Overcoming issues and work planning

It is worth of mention that there was an initial opposition towards the proposal set in place by the course students, who consider themselves historians at the end of their training, as well by the insecurity of the teaching staff (of the same course) towards the pedagogical discourse. The fear of the new, the unknown or of a subject that is not mastered, appeared as the focus of opposition within this context — particularly the classroom space and the familiarity with a given school.

On the first focus of opposition, the students, we can say that the students have a difficulty in placing themselves as future teachers in the discussion of teacher education. Being within a History

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The removal of a teacher for postdoctoral studies, made the monitoring and the establishment of guidelines for the Supervised Internship II module even more troublesome.

licentiateship, structured by historians, they build their own identity as historians and will not recognize themselves as future teachers. Teaching is seen as something to which they have to recur in order to work but will appear devalued to their eyes as a field of practice, not to produce knowledge. In addition, the seats of power, coordination and academic legitimacy in their course are occupied by historians. With this predispositions and the symbolic devaluation of the teaching profession, they are not in a position that allows them to understand the most pressing pedagogical necessities for the intern, which needs to be trained in the conception of practical activities, so that he can act in a public school.

The classroom, in a licentiateship, can be understood by many as a doubly neglected space, since both the teaching practical activities and the activities on specific knowledge theories — History, in this case — do not attend to the necessities of teacher training. If, on the one hand, the classroom space can be used to create a chronogram of directed readings, most often made by the historian (according to information given by the students themselves), on the other hand it will not be used as a laboratory to question the issues referring to the teaching practice in satisfactory conditions. The discussion with prior readings, referring to the school and the subjects involved therein, would enable those interested in teacher training with a different perception of the classroom, hailing from either the specific or the pedagogical training.

The premise for training at Brazilian universities is a three year course, pertaining to a specific scientific domain (Philosophy, History, Math, Sociology, etc.), followed by one year of pedagogical modules. At the end of the third year the student will obtain a Bachelor's degree and, at the end of the fourth year, it is designated by a Licentiateship. The perception that the student has of his role consists of his identification with the teachers of the Bachelor's degree and ignores his condition as a future teacher of primary and middle school. The scientific domains structured into courses has been understood by students and teachers as the "arena of power", which opposes the conservation of a classical Bachelor's degree model against the integration of specific and pedagogical training in view of the professional — the teacher. This is explained, to Oliveira (2007), with the heritage of standardized training within the curricular structure.

"We are heirs to a Napoleonic model of university training, where we have the initial training at the substantiation disciplines; those specific to the field and, at the final years, we approach ourselves from the theoretic field of pedagogy and education, through the study of disciplines such as Didactics, Methodology and, finally, Internship." (Idem, p. 33)

To believe that a disarticulated approach of the Bachelor's degree with Education through a short list of modules can provide the discourse and, above all, can create dispositions to alter the pedagogical practice is to ignore that the education sciences represent a pursuit to elucidate the problems existing within the teaching strategies. To maintain the belief in that way of approach can be the fertile condition for the negation of the pedagogical knowledge. Such belief will be incapable of training subjects to reflect on their own teaching condition or to make them involved with education (teaching/learning) strategies, to which they are destined as future teachers.

In the proposal to work with media, the local History, the school History, of its objects and spaces, everything is offering the conditions to discuss over teacher training strategies, to rethink the

pedagogical practice and to make the work of the student intern more flexible. The option to work with the students with the use of modern media created an enriched learning environment, into a pedagogical condition where it is permitted to meditate and debate critically over its pedagogical practice. Therefore, "[…] such a course must establish the minimum of skills to be obtained, and function in such a way that combines the demands set forth today by the initial training with the requirements discussed by those who work on continuous training" Abras (1998, p.116)

Other agents responsible for the teacher training are remembered by Sacristam (2002), as they carry ideas for the practice contributing for the educational experience, therefore participating in the construction of the practice. These agents can be the educational policy, those who legitimize it, parliamentarians, teacher unions or other organizations, individual teachers, opinion makers, parents associations, technicians, specialists, the students. To conclude, he states that "If the operability or authorship over the practice is split, the knowledge and the practice connection will have as many agents as those who share it". (Idem).

Before this, how can we not think of the teacher as an opinion maker, including towards his own praxis? In a practice that offers the possibility to create new elements to respond to the challenges of distance accessibility, that the media technologies make available today, we can think that such a reflection can help towards the change of student practices by including the role of mediator. The accomplished work allowed for the collection of data and the production of materials susceptible of being used in both the classroom education as well as distance education. The script structure was specific for each school, so that by knowing it better we could overcome some deficiencies in the debate over the training of the pedagogical practice.

3. The school cultural heritage as a work proposal for Supervised Internship II

The aim of the proposal presented to the students of the Supervised Internship II module was for them to work with communication media in education, while testing at the same time the pedagogical possibilities of these new tools. It was defined as the main goal to select activities of the pedagogical practice, organize them and develop them in the scope of the primary and middle school teaching, while considering the viability of the same process in other educational spaces as well.

It was also considered the necessity of facing the student interns against challenges that would make them to position themselves as education professionals, in training. It was intended that they should analyse the possibilities, the limitations, the rights and wrongs of uniting the compromised pedagogical practiced with the humane training of the interns and their students, targets of their educational action. Simultaneously, it was predicted that the work to be developed would mobilize each school, in its institutional entirety and in its learning context.

The proposal contained, as a way of evaluation, the elaboration of a final written text that would respect three stages and respective items: 1. pre-project with the stages to accomplish — collection of data, organization and discussion, presentation to the teachers and to the pedagogical team; 2. structure of the project — proposal goals, proposition/theme, specific conceptual elements, methodological elements conductive of the relation between the educational heritage and the didactic transposition; 3. production of a "virtual museum" video to be used in the classes by the student interns in their appointed schools; 4. exhibition and reflection over the "virtual museum"

and results obtained; 5. presentation and analysis of the different experiences of the University — one session with all the student interns involved; 6. self-evaluation, which demanded that the student interns would describe in their final report the way by which they completed the proposal, and systematize the achieved results with their students in the relation teaching/learning and other impacts of their work.

The school, understood here both as the physical and the social space, would be mobilized as a resource and as an element for the co-participation in the teaching/learning process — following the propositions of Gramsci, in the establishment of a unitary school, capable of reacting to privatization, so fashionable in our culture. A public school which would develop a general and humanist culture, beyond the simple specialized technical training. Nevertheless, this current tendency seems to be losing ground towards a more utilitarian view, if we consider the participation of the parents and the students, evermore demanding of education and the reception of a specialized knowledge to respond to market demands. Meanwhile, the school rebuild in its History and the use of information technologies proved to be an important instrument for the mobilization of school communities.

It is impossible not to observe this critique of Gramsci (1989) to the way of distributing work within the school and its consequences on the learning of students — namely, in the sense of analysing a school where the organization of time-space does not respect the rhythm of psychological and behavioural development of the students. By evaluating the complete disarticulation, existent in the Italy of his time, between the school and the university, he observed:

"This is why, in the unitary school, the last stage should be *conceived and organized* as the decisive stage, in which one learns to create the fundamental values of 'humanism', the intellectual self-discipline and the moral autonomy necessary for a late specialization, be it of a scientific character (university studies), be it of a immediate productive practice (industry, bureaucracy, market, etc.)". (Idem, p. 124).

The pedagogical proposal elaborated by us contains in its process the restructuring of the work of future teachers beginning with the introduction of new technologies for the production of materials and in the communication, the easing of the creative production process, the mobilization for the cooperative work and the alterations in the usual system to guide a student intern.

The proposal, while an instrument of training, was not structured with basis on a methodological option admittedly different from the 'classical' patterns. Its conducting wire was to propose "situations that would put into conflict the knowledge, the beliefs and the feelings, in a way adjusted to the level of development" of the student interns. (Nolasco, 2013, p.40). The criterion was to start from the reality of the training experience in a given school to then introduce a critical reflection and a process of changing of attitude. More than immediate results, we were trying to test the possibilities of the implemented training instrument, to follow the process and analyse its impact in the training. The proposal aimed to contribute towards the production of knowledge that would help to think and install alternatives to train teachers.

For the guidance role we have tried to create new pedagogical possibilities in order to go further than a simple challenge: the courage to face already crystalized groups, to question one's own practices, to be coherent with the demands of the curricular plan and the pedagogical discourse.

This set forth the obligation to evaluate the institutional conditions so that it would be possible to develop this instrument successfully. Therefore, the resort to a basic ethical demand was taken into account — the freedom of choice to participate from the person in training. As their mentor, I proposed myself to develop an accompaniment practice that would satisfy the undertaken collective commitment with the students and the schools. A coherent commitment with the academic project of promotion for a conscious society, that wants for a better life and work conditions.

"It is in that troubled reality that the teacher will have to develop his own pedagogical practice, and the great challenge that presents itself is how to deal with such a diversity of situations and singular problems for which one does not have an answer or a solution *a priori*." (Cerezer, 2007, p. 23).

4. The practice of educational work on school cultural heritage by the use of a virtual museum

As a requirement of today's world, the great majority of students and teachers use the computer to acquire the benefits of quick and updated information, for organization and communication. Through the use of PowerPoint, they find support in methodological resources by its use as an illustrative information carrier, so it is often used as a didactic tool. However, its use as a requirement to react to new behaviour, as an interventional tool, has been quite restricted. The student intern faces a new situation when acting in the classroom and brings a new look to the teaching/learning process as well as proposals of new connections to knowledge.

The pedagogical proposal presented to the student interns in the context of this module was to work over a theme about the very own school where the internship would be taken part by using the possibilities of media. With it, our intent was to valorise the History, memory and patrimony of the centenary São João del-Rei schools. Like in "distance education the institution teaches"(Lentell, 2012, p. 25)-These concepts use elements of the school material culture (Felgueiras, 2010), that aggregate knowledge and can be pertinently used in the study of educational and cultural (general and particular) heritage.

The school patrimony will I considered as a cultural instrument in very different senses: as diffuser of ideas, as generator of new concepts, memorialistic or aggregator of new knowledge. Through its various approaches, the patrimony is a flexible pedagogical medium that allows us to come closer to History: local History, school History, of teacher training, of teaching strategies, of organization models, of ideas and pedagogical utopias. The school virtual museum originated from the aforementioned experiences.

By studying the school it becomes a cultural object that can be explored in several ways, by the use of different medium: video, photography, paintings, magazines, etc. The school patrimony as a theme becomes museum material when you exhibit its reality, physically or virtually. The option was to mediate the relation between the student interns and their teaching training through the virtual museum. The goal of the proposal was to **present and reflect** over the several pedagogical possibilities that could be explored by this new look on the school. It contemplates historiographical research practices, collections preservation, school material culture studies, History safeguard and institutional memory. The student interns had all the liberty to define criteria and select objects and spaces, based in their History training.

These practices enabled different experiences, as well as the enlargement of the school vision

(previously restricted to the universe of the classroom), by underlining its importance to other educational and training dimensions, and to cultural actions within muselogical spaces. These spaces contemplate within themselves the idea of being the trustees of material patrimony, meanings and immaterial and educational values. The school space has been valued in History of Education as the public patrimony that sets forth behaviours, meanings and *cultural habitus* to the new generations of researchers (Viñao Frago, 1998, Escolano Benito, 2000, Felgueiras, 2004, 2010, Lawn, 2009). The proposal of a pedagogical work starting within that same school space with patrimonial value and, in a way, turned into a museum, allows for new readings according to the roles of the subjects involved: students, teachers and student interns. This practical training seems to give answer to the necessity of the educational system to train teachers with a differentiated cultural view. This can be characterized as a historical view, attentive towards an ample and multicultural educational horizon, which brings possibilities of connexions with other knowledge acquired by their students. This kind of training brings new elements to the scientific debate in its pedagogical and historical dimensions; it enlarges the reading of the world and the very quality in the writing of the final report. Accordingly to Felgueiras (2011, p. 67):

"In Portugal, the preservation of educational patrimony and its collections emerges almost simultaneously amongst teachers and education historians. The school memories, the search and guard of collections of teachers were introduced in Portuguese and Brazilian historiography in the 1990s".

The conscience of a national identity, which appears as a legacy to be passed on, demands an education for the preservation and respect of both public and private patrimony. These contain practices and knowledge that intervene in the historical reality of the subjects involved in the pedagogical process. Given that the everyday school also involves the intervention of that same reality, if becomes imperative to consider it as an essential element in the construction of educational strategies and training processes of student interns and the very students with whom they work. It becomes clearer in the case of the proposal b), in which a current theme (bullying) relates with the preservation of the school space today and the public space that is the school.

5. A contribution for the pedagogical training

The content of the didactic proposal "Pedagogical innovation with the school virtual museum within the school" (at the final stage of their training) provided, in a complex space of articulation of theoretical and practical knowledge and plural disciplinary knowledge, the mediation between student interns and elementary and middle school students, from the spaces where the schooling takes place. It allowed for the development of teaching/learning activities and for the debate on the teaching practice. The student interns saw this special moment in their training as a unique stage of autonomous creation, which involved everyday school experiences, shared with the teaching of History field of knowledge. The final report considerations of one of my students corroborate this statement:

"Without any doubt, the presence of the educational dimension in the school space, in view of the fact that not only in the classroom but outside, in the courtyard, the refectory, the library and in other environments, the relations between people take place naturally, revealing the everyday school life and its schooling function. (…) This spatial and educational dimension of school, analysed

as a fruit of the internship experience, allowed for the enlargement of our perception of the school in all its dimensions. In this way, the innovative internship proposal revealed to us, as future teachers, the understanding that the teaching practices can be revealed in the multiple functions and uses of the school space." (Nolasco, 2013, p. 48).

Still accordingly to the aforementioned student, not only the spaces, but also the objects found within possess a representative and symbolic meaning, as:

"They serve as effective tools in the training of the human being, pertaining to the behaviour both inside and outside the school. Therefore, a new interpretation can be developed from material elements that constitute the school space, which is dealt with naturally and daily. Such an interpretation carries different aspects: social, economic, cultural and political, and it focuses in its structure the historical dimension of education. The fact is that all the school environments can be used as teaching instruments, a behaviour appropriation tool that define the human being, therefore its complexity." (Ibidem).

This student intern, in this stage, had the opportunity to address the sociocultural reality of the school, understanding it as the generating source of the work produced to educational and cultural levels. The school where this student undertook his internship as a teacher in training no longer was the devaluated place for the teaching profession but it acquired the status of complex sociocultural reality that becomes an object of cultural heritage in their curricula. For the primary and middle school students it is a new content that makes accessible the social historical time, be it national or communitarian. For the university student, as a teacher trainee, it becomes a curriculum content that articulates academic knowledge of a varied nature.

The experiences quoted here extrapolate the proposal of the conventional internship, as the student interns could involve the necessary observation, with the teaching activities in the classroom and the overview of their students' works (identifying sources, critical analysis, deepening of national History contents and patrimonial education).

The way suggested for the use of media in the internship permitted the creation of blogs and the production of videos with the school cultural patrimony, which provided the school communities with the organization of guided virtual trips within their own schools. The products of their research (debates on films, theatre plays and other cultural products) were used at the final presentation of the internship at the university space, allowing the systematization of those experiences in different school contexts.

The presentation of this work as made visible that the cultural reality in the schools, proposed by the models of a historical memory exploration where the student intern is capable of intervene with new theoretical elements, is an innovative contribute for the teaching/learning relation. It turns the school, an everyday place, into a place of patrimony. It also makes the school community to participate in the symbolic construction of the experienced reality, changing the student intern from a stranger to a collaborator by mediating his students learning with his own training.

As a training strategy, it demanded of the student interns the knowledge of the usual languages for the communication with new technologies. It constituted an enriched learning environment for the training possibilities of producing a video, writing a blog or taking pictures. The produced material

shows the potentiality of being used in distance education. It contributes for the debate of curricula involving blended teaching and learning, which is a current concern of the University.

The creativity of the student interns while overcoming workaday routines established good practices of transitions to open and flexible learning. These products can be used at the online presentation of schools, as well as be used as suggestions for the creation of cultural products, such as films or theatre plays. This very process can be replicated in other schools or distance education environments.

In the case of distance education, this proposal can also be developed by the recurrence of video conference, be it in full, as a start or at the final stages only, or even as a tutoring option.

5.1 Training elements with emancipatory potential

The freedom of the student interns to accept or reject this new proposal idea generated an attitude of autonomy and responsibility in the pedagogical practice. This autonomy was translated in audacity to face their challenges and in creativity in the use of media, both pedagogically and transdisciplinary.

In the training process, as mediators between the university and the schools, the student interns had to assume different roles. Between themselves they had to submit all the material in first instance to the board of their assigned school and its teacher group, whilst showing historic and education knowledge. Presenting the **virtual school museum** proposal to their middle school students, in such a way that would involve them in a teaching/learning situation, awoke the curiosity to research, establish connections, and raise questions. By proposing a differentiated intervention in spaces outside the classroom, without hurting the pedagogical project and the regulatory demands of the licentiateship, they have shown capability for critical reflection and moral autonomy.

It is by strengthening these principles and its practical expression that, we believe, we can achieve a change in the attitudes and behaviours in the education acting.

The guidance of the internship work in such a manner as made possible for the student interns to recognize their professional role by discovering themselves as teachers. A teacher that is conscious of the material conditions of his own existence and believes in his own creative potential as a man or a woman by living the plurality of the social and cultural relationships.

The insight, the scientific accuracy, the systematicity of the knowledge produced on the school reality demanded for the serious acceptance of his training: as future teachers, as autonomous subjects in continuous training, where the new technologies represent a vast field of possibilities for the production of knowledge and communication.

“Information technologies (ITs) are, nowadays, one of the main pillars of the transformation in knowledge and in culture. As educators working with the issues of cultural heritage, we are driven to think of ways to use these instruments to promote a polyphonic world, integrative of human diversity, as a basis to a culture of Peace” (Felgueiras, 2009,p.43).

References

Abras, M.C.M.(1998). O impacto do curso emergencial na formação do professor. Belo Horizonte:

UFMG, Br.[Dissertação de mestrado]

Cerezer, O. M. (2007). Estágio Supervisionado e Formação em História: entre incertezas e possibilidades. In: Jesus, Nauk et al., (orgs.) Ensino de História: trajetórias em movimento. Cáceres: Editora Unemat, pp.21-31.

Escolano, A. B. (2000). Tiempos y espacios para la escuela. Ensayos históricos.Madrid: Biblioteca Nueva.

Felgueiras, M. L. (2011). Herança educativa e museus: reflexões em torno das práticas de investigação, preservação e divulgação histórica. Revista Brasileira de História da Educação. Campinas-SP. V. 11, n 1(25), jan/abr. pp.67-92.

Felgueiras, M. L. (2010). Cultura Escolar: da migração do conceito à sua objectivação histórica. In Felgueiras, M. L. and Vieira, C. E. (ed.), (2011) Cultura Escolar, Migrações e Cidadania. Porto: Sociedade Portuguesa de Ciências da Educação, pp. 17 - 32.

Felgueiras, M. L. (2008).Sharing European Cultural Heritage. In Ferreira, A. G. and Felgueiras, M. L. (2009).Buildings telling European Heritage. Pedagogical perspective. Coimbra: Centro de Estudos Interdisciplinares do século XIX, 2008,pp. 43 -56.

Felgueiras, M. L.(2004).“Educational Heritage: The School Buildings. A travelling through the times and cultures”, in Claudia Saccone (ed.), ICT and communicating cultures. Roma: Aracne Editrice/Università degli Studi del Molise,pp. 255-260

Gramisci, A.(1989). Os intelectuais e a organização da cultura. Rio de Janeiro: Civilização Brasileira.

Korthagen, F. et. Al.(2006). Developing fundamental principles for teacher education programmes and practices. In Teaching and teacher education, (22), pp.1020-1041.

Lawn, M. (2009)Modelling the future: exhibitions and the materiality of education. Oxford: Symposium Books

Lentell,H. (2012)Distance learning in British universities: is it possible?. Open Learning: the Journal of Open, Distance and e-learning, 27:1, pp. 23-36. (http://dx.doi.prg/10.1080/02680513.2012.640782)

Nolasco, E. A. (2013) Relatório de Estágio: Escola Municipal de Goiabeiras (Relatório apresentado como exigência na disciplina Estágio Supervisionado II no curso de História da Universidade Federal de São João del-Rei), fevereiro, 60p.

Oliveira, V. F. (2007).Práticas do Ensino de História: entre saberes e sabores. In Jesus, N. M. et al. (orgs.). Ensino de História: trajetórias em movimento. Cáceres: Editora Unemat, pp.33-40.

Sacristan, G. (2002). Educar e conviver na cultura global: as exigências da cidadania. Porto Alegre: Artimed.

Viñao Frago, A.(1998*)* Tiempos Escolares, Tiempos Sociales*.* Barcelona:, Editorial Ariel.

Viñao Frago, A. and Escolano Benito. A. (1998). Currículo, espaço e subjectividade. A arquitectura como programmea. Rio de Janeiro: DP&A.

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The role of E-learning satisfaction in the acceptance of technology for educational purposes: a competing models analysis

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Abstract:

Social Web or Web 2.0 has become very popular among new generations that use this type of tools on a daily basis. Published results indicate these tools can be used to support educational activities.

However the success of educational usage depends on the acceptation by students. The Technology Acceptance Model (TAM) has been widely used to study such processes. A parallel approach to predict the use of technology is focused on user satisfaction. The main aim of this paper is to integrate both approaches on a conceptual model. Given that the literature provide support for different alternatives of integration (learning satisfaction as antecedent or mediating variable) we propose a competing models strategy.

The sample is composed of 202 students enrolled at a Business degree in a Spanish University. The study was inserted in a course designed to integrate the use of several web 2.0 tools (Facebook, Twitter, blogs and a wiki) for educational purposes (Personal Learning Environment).

Our results indicate that the model that integrates "e-learning satisfaction" (e-SAT) as direct antecedent of the "behavioural intention to use" (BIU), mediating the classic effects between "perceived usefulness" and "attitude towards using" to BIU, obtains a significant better fit in comparison with the model that considers e-SAT as an antecedent of "perceived ease of use".

Keywords: Technology Acceptance Model, e-learning satisfaction, Personal Learning Environment, competing models

1. Introduction

The last two decades have experienced a significant increase in the development of new and different approaches to education with the use of information communication technologies –ICT- (Lee, 2010). The popularity of Social Web or Web 2.0 fosters this trend, particularly among new generations that use this type of tools (v.g. social networks) on a daily basis. Available data from the Pew Research Center (2010) indicate that, in the United States, 83% of "Millennials" (generation born between 1977 and 1992) use Social Networking Sites and 95% go online. In Spain, the last data reported by the AIMC (October-December 2012) indicate that 85.5% of the respondents accessed to Internet every day at least once (98% almost every day or more frequently) and more that 80% accessed a social network during the last week. A second question to be considered is that Web 2.0 services are remarkably effective in connecting people and in facilitating the exchange of information, providing new opportunities in higher education (Romero-Frias & Arquero, 2013).

These two ideas were also connected by Mazman & Usluel (2010) who highlighted that the literature showed that social network tools support educational activities by making interaction, collaboration, active participation, information and resource sharing, and critical thinking possible (Ajjan & Hartshorne, 2008; Mason, 2006; Selwyn, 2007), thus using social networks in educational and instructional contexts can be considered as powerful idea simply because has an educational potential and students spend a lot of time on these online networking activities.

However, the final success of any educational use of web 2.0 tools depends upon the reactions and acceptance of users towards e-learning; an area that, as Teo (2010) suggests needs further study.

The Technology Acceptance Model (TAM; Davis, Bagozzi, and Warshaw, 1989) explains the determinants of technology acceptance over a wide range of end-user computing technologies and user populations and is shown to have good predictive validity for the use of ICTs in education (Sanchez-Franco, 2010) and has been used extensively in the literature.

Based on the TAM, and its predecessor, Theory of Reasoned Action (TRA; Fishbein & Ajzen, 1975) other models have been proposed –for instance, TAM2 (Venkatesh and Davis, 2000), UTAUT (Venkatesh et al., 2003), WAM (Castañeda, Muñoz-Leiva, and Luque, 2007)- and successfully used. However, the TAM is still considered to be the most parsimonious (van Raaij and Schepers, 2008).

TAM provides sound predictions of usage by linking behaviours to attitudes and beliefs (ease of use and usefulness) that are consistent in time, target, and context with the behaviour of interest (system usage) (Wixom and Todd, 2005).

A parallel development to technology acceptance (TA) focuses on the role of user satisfaction (Bailey and Pearson 1983, Ives et al. 1983, Melone 1990). This approach received less attention by researchers because beliefs and attitudes towards the ICT itself (instead to the usage as proposed by TAM) are weak predictors (Ajzen and Fishbein, 2005).

Both approaches can be integrated in a conceptual model with an increased predictive power (Wixom and Todd, 2005).

In this line the present paper proposes a theoretical model of technology acceptance of an e-learning system that integrates the concept of learning satisfaction on a TAM scheme.

A remarkable novelty is the use of competing models in order to test if learning satisfaction has (I) a mediating effect between intention to use and its antecedents or (II) should be considered and antecedent of the perceived usefulness (and therefore has an indirect effect on the intention to use).

2. Theoretical background

2.1. Personal learning environment and Web 2.0. in education

The positive impact of Web 2.0 on education has been claimed by many voices (v.g. Solomon & Schrum, 2007; Richardson, 2009). In this line, (Redecker et al., 2010) social software is considered to be effective in developing essential skills (selecting relevant information, critically interpreting and analysing the socio-cultural context, working collaboratively, sharing knowledge, etc.). Arquero & Romero-Frias (2013) highlighted that recent research has looked into social constructivism as a way to interpret and assess some of the potential benefits of Web 2.0 in education (Sturm, Kennell, McBride & Kelly, 2009). Social constructivism situates learning in communities of learning and practice (Brown & Adler, 2008), where the learners' need to create meaning requires a balance between (a) autonomy (Jonassen, 1991), and (b) community (Duffy & Cunningham, 1996).

A personal learning environment (PLE) is, following Atwell (2007), comprised of all the different tools we use in our everyday life for learning. Therefore, as Romero-Frias & Arquero (2013) state a PLE is a concept that refers to the set of tools, devices, connections and networks that we use to learn, and many of these tools are social online services. The development of a PLE integrating Web 2.0 tools allows students to face the real world context by exploring services that could be re-used for personal and professional purposes after the end of the formal education period.

2.2. Technology Acceptance in Education

From the seminal work of Davis et al. (1989) proposing the TAM, Perceived Usefulness (PU) and Perceived Ease of Use (PEU) are hypothesized and empirically supported as fundamental determinants of user acceptance of a given ICT (Sanchez-Franco, 2010).

PU captures the extent to which a potential adopter views the target technology as offering better value over alternative methods of carrying out the same task (Liu et al. 2009). PEU encapsulates the degree to which a potential adopter views the usage of the target technology to be relatively free of effort (Davis, Bagozzi, & Warshaw, 1989). Additionally, the model integrates as antecedent of PU and PEU external variables such as previous experience, enjoyment or tendency to innovate. Lee, Kozar, and Larsen (2003) analysed 101 papers including some of the relationships proposed by the TAM, concluding that in the vast majority of the cases those relationships were significant.

The structure and variables comprised in the TAM made it suitable to investigate the acceptance of ICT in learning contexts. Leem & Lim (2007) points to the existence of barriers in terms of e-learning utilization in universities or colleges and, consequently, stakeholders, such as developers and deliverers of e-learning need more understanding of how students perceive and react to elements of e-learning along with how to most effectively apply an e-learning approach to enhance learning (Koohang & Durante, 2003). In addition, Park (2009) suggests that knowing students' intentions and understanding the factors that influence students' beliefs about e-learning can help academic administrators and managers to create mechanisms for attracting more students to adopt this learning environment (Grandon, Alshare, & Kwan, 2005). Therefore, there is a consistent body of research applying TAM to virtual learning environments (v.g. Martins and Kellermanns, 2004; Ong,

Lai, and Wang, 2004; Pituch and Lee, 2006; Selim, 2003; van Raaij and Schepers, 2008).

Moreover, numerous papers using TAM in educational contexts included further variables to increase the predictive power of the model. For instance, Pituch & Lee (2006) added three system characteristics as external variables (functionality, interactivity, response) to explain use for distance education. Ngai et al. (2007) examined the adoption of WebCT using a TAM that incorporated technical support. Liu et al. (2009) included media richness and concentration (flow) to study the acceptance of streaming media for e-learning. Arteaga & Duarte (2010) extended the TAM including technical support and computer self-efficacy to model the usage of Moodle and Sanchez-Franco (2010) studied the quasi-moderating effect of perceived affective quality in an extended TAM for WebCT that also included flow. Finally Liu et al (2010) extended the model including online course design, user interface design and previous online learning experience to explain the intention to use an online learning community.

2.3. Learning satisfaction: mediator or antecedent

User satisfaction has been studied as a mediator in the processing of on-line information (Athanassopoulos et al., 2001; Flavián et al., 2006; Casaló et al., 2008a, 2008b; Castañeda et al., 2009; Szymanskiand Hise, 2000) and also as a determinant of success and usage of ICT (Bhattacherjee, 2001a,b,c; Bailey and Pearson, 1983; Ives et al., 1983; Doll and Torkzadeh, 1988; Delone and McLean, 1992; Hayashi et al., 2004; Lin et al., 2005).

An equivalent concept in education (learning satisfaction) can be defined as a student's overall positive assessment of his or her learning experience (Keller, 1983). Hui et al. (2008) identified three antecedents for learning satisfaction: (1) perceived learning effectiveness (which refers to the extent to which a student believes he or she has acquired specific skills), (2) perceived course learnability (the degree to which a student considers the course materials delivered easy to learn), (3) perceived learning community support (the extent to which a learning environment creates an active, strongly bonded community that encourages and facilitates knowledge exchanges among peers and their instructor). Perceived learning effectiveness, as defined above is similar to PU in the TAM and perceived course learnability is directly related to the concept of PEU. Other authors found PU and PEU to be antecedents of learning satisfaction (Hui et al., 2008; Martin-Michiellot and Mendelsohn, 2000; Sun et al., 2008) and Roca et al. (2006) and Shu-Sheng and Hsiu-Mei (2011) found a significant relationship between learning satisfaction and the intention to keep on using e-learning. Therefore, a first alternative is to consider learning satisfaction as a mediating variable in the TAM.

The second alternative is to consider learning satisfaction as an external variable antecedent in the TAM. This approach is supported in the work by Wixom and Todd (2005). These authors developed an integrated model that distinguished beliefs and attitudes about the system (i.e., object-based beliefs and attitudes) from beliefs and attitudes about using the system (i.e., behavioral beliefs and attitudes) to build the theoretical logic that links the user satisfaction and technology acceptance. Object-based beliefs and attitudes (such as reliability, flexibility, integration, accessibility, and timeliness) are related to the overall satisfaction about the system (Ajzen and Fishbein, 1980) and this overall satisfaction is considered an external variable loading directly on PEU, and indirectly through PEU, on attitude towards using and behavioural intention to use.

3. Methodology

3.1. Proposed theoretical learning 2.0 acceptance model

Departing from the basic TAM scheme, a competing models strategy is set out for two alternative models for the acceptance of e-learning 2.0 (see figure 1). The first alternative (M1) integrates learning satisfaction (eSAT) as an external variable, antecedent of PEU, in line with Wixom and Todd (2005). The second alternative, in line with Bhattacherjee (2001a,b,c), Hayashi et al. (2004), Rai et al. (2002), Bailey and Pearson (1983), integrates eSAT as a mediating variable between perceived usability (PU & PEU) and attitude towards use (ATU) and behavioral intention to use elearning 2.0 (BIU).

Figure 1: Competing models of learning 2.0

3.2. Sample and context

The sample is composed of 203 students enrolled in a Business & Administration Degree at the University of Granada (Spain). By gender, the composition of the sample is 31% male, 69% female. Students age range from 20 to 43 years old, with a mean of 23.

The Web 2.0 services that integrated the PLE were the following:

- Facebook (Social Network). A private group was set to communicate and coordinate activities in the course.
- Twitter Microblogging (Information Network). To disseminate information and to interact with other users.
- Blog (Publishing platform). To create content with a critical point of view.
- Descuadrando, the open enciclopedia of accounting and business (wiki). To create academic/professional style entries.

3.3. Measures

All measures were obtained by using scales adapted to educational settings from scales previously used in relevant TAM literature (items are presented in annex 1).

Perceived usefulness (PU) and Perceived Ease of Use (PEU) were measured using adapted scales (3 and 4 items, respectively) from the Koufaris et al. (2002) reduced versions of the original scales from Venkatesh & Davis (1996). Attitude Towards Using (ATU) scale used in this paper is an adaptation of the scale (3 items) proposed by Chen et al. (2002) and to measure the Behavioral Intention to Use (BIU) the classic scale (4 items) by Zeithhalm et al. (1996) was used.

The items used to construct the e-Learning Satisfaction (eSAT) scale were based on the 2 items scale proposed by Szymanski and Hise (2000), later used in Szymanski and Henard (2001), Evanschitzky et al., (2004) and Jayawardhena (2004).
Except for eSAT, all other constructs are measured on a seven-point Likert scale, ranging from (1) strongly disagree to (7) strongly agree. eSAT is measured in a scale ranging from (1) very unsatisfied to (7) very satisfied for eSAT1 and from (1) very upset to (7) very happy for eSAT2.
Questionnaires were obtained via the Internet from all participating students in the experience. Confidentiality was assured, in order to obtain sincere answers and students were told that no correct answers existed.

4. Results

Results obtained using robust maximum-likelihood procedure (Satorra and Bentler, 1988) showed acceptable values for the global goodness of fit indicators for both models although M2 appears to present slightly better fit indexes (table 1).
In order to assess the presented competitive models (nested models, where the constructs are the same, but proposed relationships change) the adequate procedure is to use a Chi-Square to test for differences in fit.

Table 1.Testing for a significant difference between nested models M1 and M2.

M1	M2	Satorra-Bentler Scaled Difference[1]
Degrees of Freedom = 71 N-T Weighted Least Squares Chi-Square = 219.37 (P = 0.00) S-B Scaled Chi-Square = 188.33 (P = 0.00) RMSEA = 0.091 ECVI = 1.28 Model AIC = 256.33 Model CAIC = 402.82 Normed Fit Index (NFI) = 0.96 Non-Normed Fit Index (NNFI) = 0.97 Parsimony Normed Fit Index (PNFI) = 0.75 Comparative Fit Index (CFI) = 0.97 Incremental Fit Index (IFI) = 0.97 Relative Fit Index (RFI) = 0.95 Critical N (CN) = 109.46	Degrees of Freedom = 69 N-T Weighted Least Squares Chi-Square = 108.69 (P = 0.00) S-B Scaled Chi-Square = 97.07 (P = 0.01) RMSEA = 0.045 ECVI = 0.84 Model AIC = 169.07 Model CAIC = 324.16 Normed Fit Index (NFI) = 0.98 Non-Normed Fit Index (NNFI) = 0.99 Parsimony Normed Fit Index (PNFI) = 0.74 Comparative Fit Index (CFI) = 0.99 Incremental Fit Index (IFI) = 0.99 Relative Fit Index (RFI) = 0.97 Critical N (CN) = 206.48	S-B Scaled Difference = 40.67 df = 2 p-value = 0.00
[1]The Satorra-Bentler scaled chi square statistic is recommended for evaluating the fit of models when the data depart markedly from multivariate normality. However, when comparing models, it is not legitimate to carry out the standard chi square difference test and simply replace chi square with the Satorra-Bentler chi square. Satorra and Bentler (2001) have devised correction factors that permit testing for a significant difference between nested models.		

As it is shown in table 1 M2 presents a significant better fit than M1 (ΔS-B Scaled Chi-Square: 40.67;

p<0.01). This results suggest that the integration of learning satisfaction in the TAM in our learning 2.0 context is more adequate as mediating variable between PU and BIU that as external antecedent for PEU.

Once M2 is considered to fit better; the next step is to analyse the measurement model. Throughout the estimation process the item (PEU1 and ATU3) presented a low loading and an individual reliability (R^2) below the acceptable cut-off level of 0.50 (Del Barrio and Luque, 2013; Hair et al., 1995) and therefore were discarded. The psychometric characteristics of the scales included in the M2 model finally estimated are shown in table 2.

Table 2: Analysis of the psychometric properties of the scales (non-standardized parameters)

Observed Variable	Latent Variable	Param.	t-value	R^2	Variance extracted	Composite reliability
PEU2	PEU	*	---	0.86	0.8233	0.9331
PEU3		0.92	15.73	0.74		
PEU4		0.99	23.65	0.87		
PU1	PU	*	---	0.54	0.6120	0.8252
PU2		1.25	9.82	0.69		
PU3		1.34	9.33	0.61		
ATU1	ATU	*	---	0.85	0.6369	0.7739
ATU2		0.82	10.16	0.43		
BIU1	BIU	*	---	0.78	0.7201	0.9111
BIU2		1.13	16.35	0.78		
BIU3		1.07	14.40	0.73		
BIU4		0.95	13.08	0.59		
eSAT1	eSAT	*	---	0.67	0.6802	0.8096
eSAT2		1.21	10.30	0.69		

Note (*): Value not calculated since the parameter was established at 1 in order to set the scale for the latent variable

All parameters appear to be significant and the individual reliability for all items is acceptable. Also, the values for the variance extracted and the composite reliability for each scale are higher than the proposed cut-off levels (0.5 and 0.7 respectively: Del Barrio and Luque, 2013; Hair et al., 1995).

Not only there is a god fit for the model (as appears in table 1). The variance explained for the intention to use (BIU) e-learning 2.0 is 72%, which is indicative of the predictive power of the proposed model.

The estimated structural model is presented in figure 2 and the Standardized Total Effects are shown in table 3.

Figure 2: Estimated structural model (standardized solution)

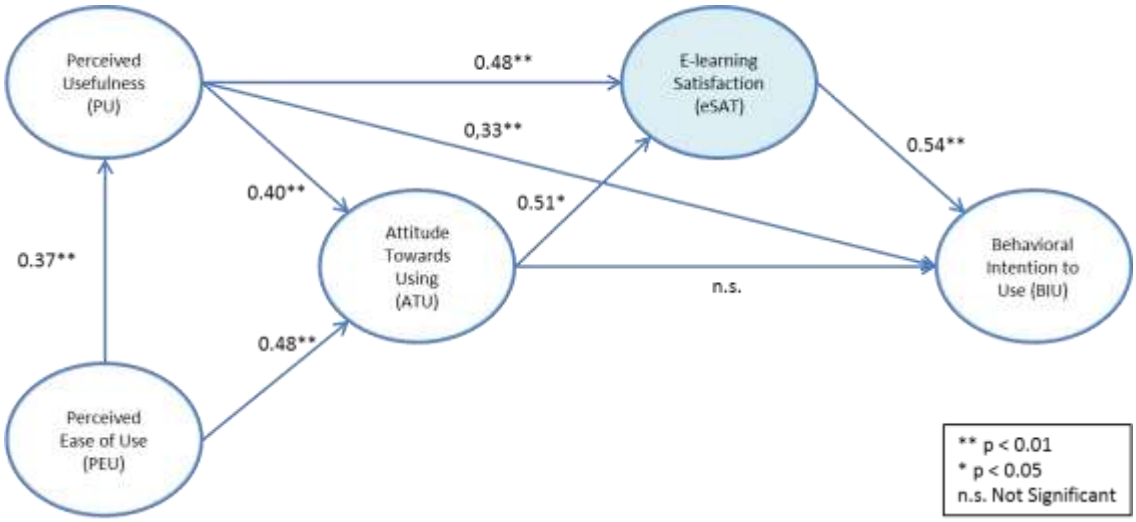

Table 3: Standardized Total Effects

PEU-->ATU	0.63	ATU-->BIU	0.32
PEU-->BIU	0.42	ATU-->eSAT	0.51
PEU-->eSAT	0.50	PU-->ATU	0.40
PEU-->PU	0.37	PU-->BIU	0.72
eSAT-->BIU	0.54	PU-->eSAT	0.69

The results suggest that the relationships between the classic TAM variables (PU, PEU, ATU) were significant, of a moderate level, and in the expected direction. However, the direct relationship between attitude (ATU) and use (BIE) is not significant, being mediated by learning satisfaction (eSAT).

It is to be noted that the variable that has the strongest effect on the intention to use (BIU) is perceived usefulness, (PU-->BIU: 0.72) followed by eSAT (eSAT-->BIU: 0.54) being those variables also strongly connected (PU-->eSAT: 0.69).

5. Discussion

The educational potential of social software as well as the high degree of implantation of its use among students implies that the use of those tools in education is a powerful idea.

However, the final success of any educational use of web 2.0 tools depends upon the reactions and acceptance of users towards e-learning; an area that needs further study (Teo, 2010).

The TAM (Davis, Bagozzi, and Warshaw, 1989) explains the determinants of technology acceptance over a wide range of populations and is shown to have good predictive validity for the use of ICTs in education (Sanchez-Franco, 2010).

User satisfaction has been proved to be the determinant of success and usage of ICT. In this line the equivalent concept in education (learning satisfaction, eSAT) is considered in the proposed modification of the TAM.

Comparing two alternatives to introduce eSAT in the model, the alternative that obtains a significant better result is M2, where eSAT is a mediator variable between attitude (ATU) and intention to use (BIU). This model obtains a remarkable explanatory power (R^2: 0.72) of BIU.

From the analysis of the total effects on BIU it is to be noted the strong influence of perceived usefulness and learning satisfaction (variables that are also strongly connected). The relevance of those variables on the whole model is indicative of the importance of further investigation on the factors or perceptions that could affect them.

References

AIMC - Association for the research In Communication Media (2013) 15 encuesta AIMC a usuarios de Internet. Retrieved (June 2013) from http://www.aimc.es/-Navegantes-en-la-Red-.html

Ajjan, H., & Hartshorne, R. (2008). Investigating faculty decisions to adopt Web 2.0 technologies: theory and empirical tests. The Internet and Higher Education, 11(2), 71-80.

Ajzen, I., and Fishbein, M. (2005).The influence of attitudes on behavior. D. Albarracín, B. T. Johnson, M.P. Zanna, eds. Handbook of Attitudes and Attitude Change: Basic Principles. Erlbaum, Mahwah, NJ.

Arquero, J. L., & Romero-Frías, E. (2013). Using social network sites in Higher Education: an experience in business studies. *Innovations in Education and Teaching International*, (ahead-of-print), 1-12.

Arteaga Sánchez, R. & Duarte Hueros, A. (2010). Motivational factors that influence the acceptance of Moodle using TAM. *Computers in human behavior*, *26*(6), 1632-1640.

Athanassopoulos, A., Gounaris, S. and Stathakopoulos, V. (2001). Behavioural Responses to Customer Satisfaction: An Empirical Study, European Journal of Marketing, 35 (5-6), pp. 687-70.

Attwell, G. (2007). Personal Learning Environments-the future of eLearning?, eLearning Papers, 2 (1), 1-8.

Bailey, J.E., and Pearson, S.W. (1983).Development of a tool for measuring and analyzing computer user satisfaction. Management Science, 29(5), pp. 530-545.

Bhattacherjee, A. (2001a). An examination analysis of the antecedents of electronic commerce service continuance, Decision Support Systems, 32, pp. 201-214.

Bhattacherjee, A. (2001b). Understanding information systems continuance: an expectation–confirmation mode. MIS Quarterly 25(3), pp. 351–370.

Bhattacherjee, A. (2001c). An empirical analysis of the antecedents of electronic commerce service continuance, Decision Support Systems 32(2), pp. 201–214.

Brown, J.S., & Adler, R.P. (2008). Minds on Fire: Open Education, the Long Tail, and Learning 2.0. *Educause Review*, 43(1), 16–32. Retrieved (June, 2013) from http://webpages.csus.edu/~sac43949/PDFs/minds_on_fire.pdf

Casaló, L. V., Flavián, C. and Guinalíu, M. (2008b): The rol of perceived usability, reputation satisfaction and consumer familiarity on the website loyalty formation process, Computers in Human Behavior, 24, pp. 325-345.

Casaló, L.V., Flavián, C. and Guinalíu, M. (2008a). The roll of satisfaction and website usability in developing customer loyalty and positive word-to-mouth in the e-banking services, The International Journal of Bank Marketing, 26 (6), pp. 399-417.

Castañeda, J.A., Muñoz-Leiva, F. and Luque, T. (2007). "Web Acceptance Model (WAM): Moderating effects of user experiences", Information & Management, Vol. 44, pp. 384–396.

Castañeda, J.A., Rodríguez, M.A. and Luque, T. (2009). Attitudes' hierarchy of effects in online user behavior, Online Information Review, 33(1), pp. 7-21.

Chen, L., Gillenson, M.L., and Sherrell, D.L. (2002). Enticing online consumer: an expected technology acceptance perspective, Information & Management, 39, pp. 705-719.

Davis, F.D., Bagozzi, R.P. y Warshaw, P.R. (1989). "User Acceptance of User technology: A Comparison of Two Theorical Models", Management Science, Vol. 35, 982-1002.

Del Barrio, S. and Luque, T. (2013).Análisis de Ecuaciones Estructurales. In T. Luque (Ed.), Técnicas de Análisis de datos en investigación de mercados (pp. 525-610). Barcelona: Pirámide.

Delone, W.H., and McLean, E.R. (1992).Information systems success.The quest for the dependent variable, Information Systems Research 3, pp. 60-95.

Doll, W.J., and Torkzadeh, G. (1988). The measurement of end user computing satisfaction, MIS Quarterly, 12(2), pp. 259–274.

Duffy, T.M., & Cunningham, D.J. (1996). Constructivism: Implications for the design and delivery of instruction. In D.H. Jonassen (ed.) *Handbook of Research for Educational Communications Technology* (pp. 170-198). Simon & Schuster Macmillan.

Evanschitzky, H, Gopalkrishnan, R.I., Hessea, J., and Ahlerta, D. (2004). E-satisfaction: a re-examination, Journal of Retailing, 80, pp. 239-247.

Fishbein, M. and Ajzen, I. (1975). Belief, attitude, intention and behavior: an introduction to theory and research. Reading Massachusetts: Addison-Wesley.

Flavián, C., Guinalíu, M. and Gurrea, R. (2006). The role played by perceived usability, satisfaction and consumer trust on website loyalty, Information & Management, 34, pp. 1-14.

Grandon, E., Alshare, O., & Kwan, O. (2005). Factors influencing student intention to adopt online

classes: A cross-cultural study. Journal of Computing Sciences in Colleges, 20(4), 46–56.

Hair, J.F.; Anderson, R.E.; Tatham, R.L., and William, C.B. (1995).Multivariate data analysis with readings. New Jersey: Prentice-Hall.

Hayashi, A., Chen, C., Ryan, T., and Wu, J. (2004). The role of social presence and moderating role of computer self efficacy in predicting the continuance usage of e-learning systems, Journal of Information Systems Education, 15(2), pp. 139-154.

Hui, W., Hu, P.J.H., Clark, T.H.K ., Tam, K.Y., and Milton, J. (2008). Technology-Assisted Learning: A Longitudinal Field Study of Knowledge Category, Learning Effectiveness and Satisfaction in Language Learning. Journal of Computer Assisted Learning, 3(24), pp. 245-259.

Ives, B., Olson, M.H., and Baroudi, J.J. (1983). The measurement of user information satisfaction, Communications of the ACM, 26(10), pp. 785-793.

Jayawardhena, C. (2004). Personal values' influence on e-shopping attitude and behaviour, Internet Research, 14 (2), pp. 127-138.

Jonassen, D.H. (1991). Objectivism versus constructivism: Do we need a philosophical paradigm? *Educational Technology Research and Development*, 39(3), 5-14.

Keller, J. (1983). Motivational design of instruction. In C. Reigeluth (Ed.), Instructional design theories and models: An overview of their current status (pp. 386–434). Hillsdale, NJ: Erlbaum.

Koohang, A., & Durante, A. (2003). Learners' perceptions toward the web-based distance learning activities/assignments portion of an undergraduate hybrid instructional model. Journal of Informational Technology Education, 2, 105–113.

Koufaris, M., Kambil, A., and LaBarbera, P.A. (2002). Consumer Behavior in Web-Based Commerce: An Empirical Study, International Journal of Electronic Commerce, 6(2), pp. 115-138.

Lee, J. W. (2010). Online support service quality, online learning acceptance, and student satisfaction. *The Internet and Higher Education*, *13*(4), 277-283.

Lee, Y., Kozar, K.A. and Larsen, K.R.T. (2003). The Technology Acceptance Model: Past, Present and Future, Communications of the Association for Information Systems, 12, pp. 752-780.

Leem, J., & Lim, B. (2007). The current status of e-learning and strategies to enhance educational competitiveness in Korean higher education. The International Review of Research in Open and Distance Learning, 8(1). Retrieved online july-2013 at http://www.irrodl.org/index.php/irrodl/article/viewArticle/380/763

Lin, C.S., Wu, S., and Tsai, R.J. (2005).Integrating perceived playfulness into expectation-confirmation model for web portal context, Information & Management 42(5), pp. 683-693.

Liu, I. F., Chen, M. C., Sun, Y. S., Wible, D., & Kuo, C. H. (2010). Extending the TAM model to explore the factors that affect Intention to Use an Online Learning Community. *Computers & Education*, *54*(2), 600-610.

Liu, S. H., Liao, H. L., & Pratt, J. A. (2009). Impact of media richness and flow on e-learning technology acceptance. *Computers & Education*, *52*(3), 599-607.

Martin-Michiellot S. and Mendelsohn P. (2000). Cognitive load while learning with a graphical computer interface, Journal of Computer Assisted Learning, 16, pp. 284–293.

Martins, L.L., and Kellermanns, F.W. (2004).A model of business school students' acceptance of a web-based course management system, Academy of Management Learning and Education, 3, pp. 7-26.

Mason, R. (2006). 'Learning technologies for adult continuing education'. Studies in Continuing Education, 28(2), 121-133.

Mazman, S. G., & Usluel, Y. K. (2010). Modeling educational usage of Facebook. *Computers & Education*, *55*(2), 444-453.

Melone, N. (1990). A theoretical assessment of the user-satisfaction construct in information systems research, Management Science, 36(1), pp. 76-91.

Ngai, E. W., Poon, J. K. L., & Chan, Y. H. C. (2007). Empirical examination of the adoption of WebCT using TAM. *Computers & Education*, *48*(2), 250-267.

Ong, C.-S., Lai, J.-Y., and Wang, Y.-S.(2004). Factors affecting engineers' acceptance of asynchronous e-learning systems in high-tech companies, Information & Management, 41, pp.795-804.

Park, S. Y. (2009). An Analysis of the Technology Acceptance Model in Understanding University Students' Behavioral Intention to Use e-Learning. Educational Technology & Society, 12 (3), 150–162.

Pew Research Center (2010). Generations 2010. Retrieved from Pew Research Center (14 February 2011): http://pewinternet.org/Reports/2010/Generations-2010.aspx

Pituch, K.A., and Lee, Y.-K. (2006). The influence of system characteristics on e-learning use, Computers & Education, 47, pp. 222-244.

Rai, A., Lang, S.S., Welker, R.B. (2002). Assessing the validity of IS success models: an empirical test and theoretical analysis. Information Systems Research, 13 (1), pp. 50-69.

Redecker, C., Ala-Mutka, K., Bacigalupo, M., Ferrari, A., & Punie, Y. (2010) Learning 2.0: The Impact of Web 2.0 Innovations on Education and Training in Europe (Final Report). Institute for Prospective Technological Studies. European Commission. Retrieved from: http://ftp.jrc.es/EURdoc/JRC55629.pdf

Richardson, W. (2009). Blogs, Wikis, podcasts, and other powerful tools for classrooms. Corwin Press.

Roca, J.C., Chiub, C.M., Martínez, F.J. (2006). Understanding e-learning continuance intention: An extension of the Technology Acceptance Model, International Journal Human-Computer Studies, 64, pp. 683-696.

Romero-Frias, E. & Arquero, J.L. (2013). A view on Personal Learning Environments through

approaches to learning. Journal for Innovation and Quality in Learning (INNOQUAL), 1 (1), 29-36.

Sanchez-Franco, M. J. (2010). WebCT–the quasimoderating effect of perceived affective quality on an extending technology acceptance model. *Computers & Education*, *54*(1), 37-46.

Satorra, A., and Bentler, P. M. (2001). A scaled difference chi-, square test statistic for moment structure analysis, Psychometrika, 66(4), pp. 507-514.

Satorra, A., and Bentler, P.M. (1988). Scaling corrections for chi-square statistics in covariance structure analysis. Proceedings of the American Statistical Association, pp. 308-313.

Selim, H.M. (2003). An empirical investigation of student acceptance of course websites. Computers & Education, 40, pp. 343-360.

Selwyn, N. (2007a). Screw blackboard. Do it on Facebook! An investigation of students' educational use of Facebook. [Electronic Version]. Retrieved July, 2013, from. http:/www.scribd.com/doc/513958/Facebookseminar-paper-Selwyn.

Shu-Sheng, L., and Hsiu-Mei, H. (2011). Exploring Learners' Acceptance Toward Mobile Learning. In T. Teo (Ed.), Technology Acceptance in Education (pp. 145-157). Rotterdam: Sense Publishers.

Solomon, G., & Schrum, L. (2007). *Web 2.0: New tools, new schools*. ISTE (Interntl Soc Tech Educ.

Sturm, M., Kennell, T., McBride, R., & Kelly, M. (2009). The Pedagogical Implications of Web 2.0. In M. Thomas (ed.) *Handbook of Research on Web 2.0 and Second Language Learning* (pp. 367-384). Hershey, PA: Information Science Reference.

Sun, P.C., Tsai, R.J., Finger, G., Chen, Y.Y., and Yeh, D. (2008). What drives a successful e-Learning? An empirical investigation of the critical factors influencing learner satisfaction, Computers & Education, 50, pp. 1183-1202.

Szymanski, D.M. and Henard, D.H. (2001). Customer satisfaction: A meta-analysis of the empirical evidence, Journal of the Academy of Marketing Science, 21(1), pp. 16-25.

Szymanski, D.M. and Hise, R.T. (2000).e-Satisfaccion: An Initial Examination, Journal of Retailing, 76(3), pp. 309-322.

Teo, T. (2010). Development and validation of the E-learning Acceptance Measure (ElAM). *The Internet and Higher Education*, *13*(3), 148-152.

Van Raaij, E.M. and Schepers, J.J.L. (2008). The Acceptance and Use of a Virtual Learning Environment in China, Computers & Education, 50(3), pp. 838-852.

Venkatesh, V. and Davis, F.D. (1996). A model of the antecedents of perceived ease of use: Development and test, Decision Science, 27(3), pp. 451-481.

Venkatesh, V. and Davis, F.D. (2000). "A Theorical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies", Management Science, Vol. 46(2), 186 – 204.

Venkatesh, V., Morris, M.G., Davis, G.B. and Davis, F.D. (2003). "User Acceptance of Information

Technology: Toward a Unified View", MIS Quarterly, Vol. 27 (3), pp. 425-478.

Wixom, B.H. and Todd, P.A. (2005). A Theoretical Integration of User Satisfaction and Technology Acceptance, Information Systems Research, 16 (1), pp. 85-102.

Zeithaml, V.A., Berry, L.L., and Parasuraman, S. (1996). The behavioral of service quality, Journal of Marketing, 60(2), pp. 31-46.

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Advantages of blended, on-campus, online courses

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Abstract

This presentation is going to discuss the advantages of offering blended online courses for on-campus students, based on our experience with the EMUOnline programme of the Eastern Mediterranean University (EMU). Blended asynchronous online courses to on-campus students have been offered at EMU starting in 1999. In the EMUOnline programme, some four year degree programme and some graduate courses from various departments were taught to on-campus EMU students with online support in blended format. Face to face sessions were also organized once at the beginning of a semester, and then, a number of times during the semester, since lecturers and students were campus residents. Teaching material was placed on the web for asynchronous access of students – first by using the EMU_LMS learning management system developed by EMU staff members, later by using a Moodle system. At the end of Spring-2013 semester, the EMUOnline programme completed its thirteenth academic year, and the number of students who have taken at least one course from this programme is now more than 4,000. The programme has been successful by considering positive feedback from students and lecturers. This presentation will discuss various distance and/or online teaching techniques briefly, present the basic properties of the EMUOnline blended programme, address some advantages of blended programmes, and finish with a discussion of why we think blended on-campus programmes will be successful.

Keywords: blended learning, online courses, distance education**.**

Introduction

I presented a paper at the ICDE-2013 Conference organized by the Spanish National Distance Education University (UNED) in Madrid (Aybay, 2013), discussing the advantages of teaching blended/online courses to on-campus students, which basically focused on student feedback we received using the questionnaire technique, and our thirteen years of blended/online teaching experience at the Eastern Mediterranean University (EMU), North Cyprus. At the ICDE-2013 Conference, during the question/answer period and the discussion sessions after my presentation, I have taken notes related with different approaches and experiences of other colleagues at different universities and institutions around the world, teaching online courses. Those discussions were the starting point for preparing another paper, which would go through the different education systems and, more specifically, the different distance or online education systems, and classify them according to basic criteria. We can then consider the advantages of teaching blended/online courses to on-campus students not only at EMU, but by extending the analysis to various different types of online delivery systems, and to on-campus students at other countries and institutions.

Distance and/or Online Education Systems

The university system – or higher education system in more general terms, has been used since the 13'th Century, which means an experience of almost 800 years. Naturally there are many teaching/learning models-theories built on this experience. However, distance education, even by considering the "by correspondence" version – is just over 100 years old. We have only 25-30 years of experience in online teaching. So, for online mode of education, we are just at the beginning of development of models and theories.

Nowadays, as online education is a part of a country's general education system, one has to consider different education systems which are implemented in different countries. During the discussion sessions in Madrid with participants from many countries, we had a chance to exchange thoughts and facts about education systems being applied in different countries. Variations start from the entry criteria applied , in some countries, higher education is almost free. In other countries, online education is almost free, but face to face education is not. Some countries consider high school success as the determining criterion for acceptance, while in others (like Japan or Turkey) a central entrance examination mainly determines whether the high school graduate will be accepted to a higher education institution.

The current education system in North Cyprus is a little bit complicated, as citizens of Cyprus, Turkey and other countries are accepted based on different criteria. Citizens of Cyprus and Turkey take different central entrance examinations during their senior year at high school, and are accepted to higher education institutions according to their success in those examinations. The fees for these students are different, cheaper for those from North Cyprus, but for both, higher education is not free. On the other hand, citizens of other countries are accepted by looking at their high school grades, letters of reference and English proficiency – most of EMU's programmes are taught in English. Those students pay fees that are very similar to fees paid by Turkish citizens.

When distance or online education (D/OE) models are considered, we again see that there are various different models. According to the number of students, there seems to be four different classes:

a. Massive D/OE systems: (China, India, Turkey) "mega distance universities" with hundreds of thousands of students,

b. Large D/OE systems: (UK, Spain) with tens of thousands of students,

c. Small D/OE systems: (Argentina, the Dominican Republic) with one to ten thousand students,

d. Mini D/OE systems: (Ireland, North Cyprus) with less than one thousand students

The country examples given for the above classes are mentioned with reference to different colleagues from those countries who participated at the UNED-ICDE-2013 Conference. The recent trend of massive open online courses ("A massive open online course (MOOC) is an online course aimed at large-scale interactive participation and open access via the web" (Wikipedia, 2013)) constitute a subclass of classes a, b or c depending on the number of students involved in the programme. On one hand, the MOOC approach is quite nice as it provides free online education to everyone, but on the other hand, at least for the time being, it seems that the number of active participants pursuing a degree or certificate is usually low, with most people just auditing or

dropping out (Jordan, 2013). On the other hand, (Rivard, 2013) notes that "faculty groups are worried MOOCs will cost them their jobs, rob them of their intellectual property rights and fail to educate students". All in all, while according to (Rivard, 2013), "the mania over massive open online courses may be slowing down", as the approach is quite new, we have to wait for some time to see whether it will be successful or not as a new education paradigm.

A second classification of distance or online education models can be considered according to the mode of delivery:

a. By correspondence: receive notes/books by mail, study, take exams,

b. By radio/TV: listen/watch (mostly synchronous delivery), study, take exams,

c. By Online-support: lecture notes + other educational material on the Internet (can be synchronous or asynchronous), online quizzes/exams, with possibly some interactive support (video conferencing, chat, forum, email)

d. The Blended model: both traditional face-to-face and online delivery, ratios may vary, however the online ratio is expected to be higher.

It must be noted here that there are a number of hybrid models as far as the mode of delivery is concerned, combining two or more of the classes mentioned above. For example, the Turkish Anadolu University Open Education Faculty delivery system combines delivery models a, b, and c, and for some limited number of programmes like English teaching, it even includes some limited face to face tutorial sessions.

Online Programmes of EMU

The blended EMUOnline programme for on-campus EMU students was started in 1999. As of Fall 2013, we have 14 years of experience of teaching online-blended courses to more than 4,000 students. The main mode of delivery in the EMUOnline programme was asynchronous, with a number of (from at least two, up to once a week) face to face meetings during the semester, depending on the choice of the specific course instructor. Most of the discussions to be provided in this paper relate to our experience with regards to the EMUOnline programme.

The Eastern Mediterranean University has been involved in other distance/online teaching programmes. One of those is the fully online 2-year diploma programme called Information Management. This programme was formally started in 2002, it was one of the four pioneering online programmes in Turkish and North Cyprus universities and it was approved by the Turkish Higher Education Council. The programme was run in a yearly mode, somewhat different than the semester-based system of EMU. A total of sixteen courses were offered, eight per year, including a team project course in which partner students had to be from different cities in order to ensure online collaboration. Online quizzes and assignments constituted only 20% of the grade according to a bylaw of the Turkish Higher Education Council. 80 % of assessment came from the final exams which had to be taken in person during June. The programme included a compulsory one-week orientation programme where students were given information about the purpose of the programme and the online tools to be used. The students also had a chance to meet each other and their prospective instructors.

Another online programme offered by EMU is the fully online graduate studies programme. It was started in 2011, again with the approval of the Turkish Higher Education Council. The programme

involves three diploma tracks, two in Banking and Finance (one MS with thesis and one MS without theses), and one in Tourism and Hospitality Management. All three programmes use the online-supported mode of delivery and students are from various countries. Some details of the management issues of online EMU programmes are discussed in (Aybay, 2010).

The EMUOnline Blended Programme

In this section, I shall try to explain the basic properties of the EMUOnline blended programme. The EMU Administrative Council decided to perform research on various different online and distance education models and programmes that were being implemented in various institutions of the world in 1998. The idea was to learn the details, differences and relative advantages and disadvantages of models, and then decide on whether an undergraduate, graduate, or two-year (vocational) diploma programme would be appropriate and accordingly, choose a model that would be better to apply to EMU students. The EMU Distance Education Institute was formed to conduct these studies.

The Institute proposed to do some 'experimentation' before going ahead with diploma programmes, as EMU needed training of faculty members, assistants and staff for the set-up and application of online teaching. At that point, the preferred choice was to offer some 'suitable' undergraduate courses from various departments with online support – hence, blended teaching to on-campus students. The EMUOnline programme started in 1999, with training sessions to prospective faculty members, assistants and technical staff – chosen solely on a voluntary basis.

Research was also done on learning management systems (LMS) available at the time with WebCT and Blackboard being the popular/dominant ones. After analysing the prices, which were quite high, EMU decided to go ahead with developing its own LMS. EMU_LMS version 1 was developed in less than a year with basic functionality required to run the EMUOnline programme (Dag and Aybay, 2003). Later, a second version was developed with more functionality in ASP.Net environment using C#, SQL and XML (Abdulova and Aybay, 2005, 2006). After 2010, we decided to adopt the Moodle open source LMS considering its wide use in the world and the fact that it is open source (Moodle, 2013). Currently all the online programmes of EMU including EMUOnline are running on the Moodle platform.

Various support teams for Web and Graphics Design, ASP and Database Design and Multimedia were formed within the EMU Distance Education Institute to provide technical support to course instructors. Those teams were formed of one or two assistants and at least two student assistants per team and they played a crucial role in the establishment and progress of the EMUOnline programme. They prepared all course slide shows and animations, scanned many photos and illustrations and converted word processing files to web format. We are grateful to all those assistants and students for their important contribution to EMU's online programmes.

During the presentation of courses, one student assistant per course managed registration issues, assigning user names and passwords to students and keeping the course announcements and class rosters up-to-date. The course instructors organized interactive chat sessions – somewhat similar to 'virtual office hours', started threaded discussions in course forum pages and assigned and graded online homework and course projects to students. In some courses, the whole course material was open to students at the beginning of the semester, although a proposed study schedule was strongly recommended. In others, material was open on a weekly basis, step by step.

In almost all the EMUOnline courses offered so far, the asynchronous approach was the dominant one. There has been no synchronous presentations such as video broadcasts. One of the reasons for that is asynchronous programmes are easier to handle with limited speed Internet connections,

which was the case for many of the early students of the beginning of 2000's. However, interaction and synchronous communication with faculty members and for intercommunication of project groups was provided first by chat programmes of EMU LMS versions, and then by video conferencing programmes, Skype and Face Time being the most recent ones used.

The first courses offered in the programme were Arch-322 History of Architecture taught by Dr. Isaac Lerner, Cmpe-231 Data Structures taught by Prof. Erden Basar, Econ-431 Gender Economics taught by Dr. Fatma G. Lisaniler and Mgmt-407 Total Quality Management taught by Dr. Omer Yagiz. Later, more undergraduate and graduate courses were added to this list, with Arch-329 History of Cypriot Civilizations taught by Dr. Netice Yildiz being the favourite course for many students as an elective. As of the end of Spring 2013 semester, EMU has taught more than 4,000 students at least one EMUOnline course.

The students taking EMUOnline courses were from different departments as many courses were electives. They were mostly seniors and juniors although in some courses like Cmpe-231, sophomores were forming the majority. Note that at that time, Internet and Web were not this popular and many students did not have personal computers. For those reasons, some department computer laboratories were kept open for 24 hours, and students were given an orientation on basic computer use, connecting to the Internet and using the EMU_LMS learning management system and its tools for chat and forum applications. Later, as the students came with more computer usage and Internet proficiency, those orientation sessions were modified to concentrate on the general online teaching philosophy, how the students are expected to study, the learning management system used and its tools.

Synchronously, studies on modifying existing rules or bylaws, or adding new ones to form the legal basis of the EMUOnline system was also started. The EMU Administrative Council and Senate approved the new bylaws in 2000 and 2001. Basic issues involved were allowing students to take up to 10% of the total credit for graduation by EMUOnline courses, allowing only up to 20% of assessment to be decided by online activities – this was a requirement of the Turkish Higher Education Council, and testing online students during regular midterm and final exam sessions, together with face to face students.

In some EMUOnline courses, using the advantage of having on-campus students, instructors organized weekly or bi-weekly discussions/tutorials with their students for a 45 minute class session. The students, similarly, using the advantage of living on-campus, had a chance to visit their instructors during office hours face to face.

At the end of each semester, feedback meetings were organized with online lecturers to discuss problems observed and proposals for the improvement of the programme.

Advantages of Blended On-Campus Online Teaching

In this section, I shall consider a questionnaire study we performed at EMU. 107 EMU students were taking two EMUOnline courses in the semester the questionnaire was applied, and 64 students returned the questionnaires. The courses taught were Arch-329 History of Cypriot Civilizations, and Econ-431 Gender Economics. The full text of questions and tabulated results are given in Appendix A of (Aybay, 2013). Here, I shall concentrate on some student comments from the open ended answers part of the questionnaire which indicate various advantages of blended courses. This part is similar to section 4 of (Aybay, 2013) with some modifications, but I believe it is worth having some repetition here.

One of the open-ended questions in our questionnaire was question 18. It asked the EMUOnline

students to list the advantages of taking an EMUOnline course. Going through the answers, the following list of answers emerge as the most common remarks:

a) Following the lectures is easier than face-to-face courses.
b) It is possible to reach the lecture notes and other course material from home, and there is no need to take notes. In face to face lectures, while you are trying to take notes, you miss important remarks of the instructor, or you do not understand some important issues.
c) The flexibility of being able to arrange when and where to study is an important advantage.
d) During online exams, lecture notes and other course resources are available – this makes one feel more confident and exams are like an open book exams.
e) There is no requirement of attending lectures at predetermined fixed hours, avoiding clashes in schedule. This also means there is no fear of failing the course due to not satisfying attendance requirements (according to EMU bylaws, there is an 80% attendance requirement for undergraduate and vocational degree programme courses).
f) You can take a break from study whenever you want.
g) It is much better to solve quizzes online without the hassle to meet tight timing constraints.
h) Having a much larger number of online quizzes is good for preparation for exams.
i) For some courses like the History of Architecture or the History of Cypriot Civilizations, much more examples/slides/illustrations can be put on the course web pages compared to the limited number of examples that can be shown in class due to time constraints.

When those remarks are considered, a large majority of the students have indicated the ease of making a course schedule with fewer clashes, as the blended courses do not have any pre-assigned weekly lecture hours. This also removes the burden of the necessity of attending a certain percentage of courses in order to pass. The orientation programme mentioned above and face to face meetings such as tutorials or project information sessions were held after the end of regular class hours.

Another common advantage mentioned is that lecture notes and other teaching material is available online, so there is no need to take notes. Note taking during lectures is mostly a difficult activity for students. It is hard to follow the pace of the lecturer, so you have to summarize, but this is quite difficult as you may miss some important points. Also, concentrating on note taking means you cannot follow the lecturer properly.

The students also mention the flexibility of choosing the hours to read the lecture material on the web themselves, the advantage of studying with self-pace and giving a break whenever they need it.

Taking exams online is preferred by most of the students. They say lecture notes and other material are available, so an online exam is like taking an open-book exam. It should be added that some students mentioned the advantage of taking a larger number of online quizzes as they provide important clues on the points in course work they did not understand.

One more issue to note is the relative success rates of the blended EMUOnline and face to face offerings of the same course. Some EMUOnline courses were offered in face to face and blended modes in the same semester. When the student success rates (the class average, based on the letter grades issued) were considered, mostly no significant difference was observed. However in the Cmpe-231 course given in 2000, the blended group had a 5% higher average than the other three face to face groups.

Difficulties in Online Teaching/Learning

After listing the advantages of blended teaching, one also has to consider some difficulties involved in blended programmes and in general, in online teaching.

The main difficulty in online teaching systems seems to be the need for different learning skills. Most of the online students at university level come from classic face to face school education. However in distance/online systems there is major shift in the learning paradigm. Students have to be self-disciplined and mature enough to follow the teaching material properly, adhering to pre-set deadlines. Instead of going to scheduled classes, sitting at a lecture hall and taking notes, one has to be sitting in front of a computer or tablet device, reading, listening to and watching course material with a self-controlled schedule and pace. Furthermore, an online student is expected to finish self-study and submit assignments on time, and in interactive cases, make some contribution, or at least ask some questions to the lecturer by video conferencing systems or by email.

A second problem is that an online student has to be a very good Internet user. He/she must be able to use the learning management system tools efficiently, and must be able to search the Internet efficiently for extra course material.

Then comes the ethical rules to be followed. Today, there is a huge amount of material on the Internet on any topic you are interested in. This means it may be very easy to reproduce(!) the work of others by copy and paste. Lately, some tools have been developed to discourage copying for academic purposes, but it is the ethics one has to accept in person that plagiarism must be avoided.

One major problem of distance and online education programmes over the world are the accreditation and degree/diploma equivalence issues. Blended online teaching programmes for on-campus students like EMUOnline are usually exempt from these issues as the students take less than 10% of their credits by blended courses. However, during our discussions in Madrid, this issue seemed to be a big problem for distance/online programmes in many countries.

Obviously, each Education System / Online-Distance Teaching Model will have different “optimal” solutions to problems observed in online and blended teaching.

Conclusion

As more and more online programmes are offered by universities, higher education institutes and consortia for larger and larger number of students, and discussions on how to teach more effectively at university level continues, we believe that blended teaching is a promising alternative to traditional face to face teaching for many cases. The ease of studying with self-pace, wherever you are and whenever you want are already mentioned as important advantages by students who took these courses. Online availability of lecture notes, slides, videos and other material relieves the students of the difficulty of note taking during limited-period lectures. Online quizzes and feedback provided for students help the students find the points they could not understand in the course. Advisors and students also find blended courses very handy to avoid clashes in schedule when the student is irregular, or is taking a large number of courses.

Large sizes of freshman classes in some universities is mentioned as a big problem for organization and scheduling, and most of the time it is difficult to convince better lecturers to teach those courses. Students of such courses complain that they get lost in large amphitheatres where they cannot hear the lecturer properly and they cannot take notes efficiently. In some universities, as one solution to this problem, fully online or blended courses are used to teach on-campus classes with large sizes.

Some universities like Sakarya University in Turkey are running engineering diploma programmes with "mostly online" blended teaching. Sakarya University organizes laboratory and tutorial sessions for blended programme students during weekends, semester breaks or the summer vacation when on-campus students are not taking courses. While about 70% of activities are online, face to face laboratory and tutorial sessions are about 30% (Sakarya University Industrial Engineering Blended Programme, 2013).

As a student, taking a blended course means you are using using recent technology as you need to establish and manage a fast Internet connection, you become a user of learning management system tools and you learn to use online interaction tools efficiently.

Our 13 years of experience of blended teaching at EMU has shown that we have taken a correct decision and we encourage other universities to start similar programmes. It is especially a helpful experience before going into fully online programmes.

References

[1] Abdulova V. and Aybay I., (2005), "A Learning Management System for Online and Hybrid Distance Education: EMU_LMS v2", International Symposium on Innovations in Intelligent Systems and Applications (INISTA 2005), 203-206, Istanbul, Turkey.
[2] Aybay I., (2010), "From Online to Blended E-learning Programmes", Proceedings of IODL and ICEM2010, International Joint Conference and Media Days, pp. 111-117, Eskisehir, Turkey.
[3] Aybay I., (2013), "The EMUOnline Experience: Advantages of Blended On-campus Online Courses", presented at UNED-ICDE International Conference, Madrid, Spain, March 2013.
[4] Aybay I., Abdulova V., (2006), "Developing Learning Management Systems for Online and Hybrid Distance Education: EMU_LMS", Proceedings of IODL'2006, 2nd International Open and Distance Learning Symposium, pp. 385-392, Eskisehir, Turkey.
[5] Dag O.O. and Aybay I., (2003), "A Learning Management System Developed at the Eastern Mediterranean University", *TOJET Journal*, vol. 2 - 2, article 2, April 2003.
[6] Eastern Mediterranean University, EMUOnline web page: http://emuonline.emu.edu.tr
[7] Jordan, K., (2013), http://www.katyjordan.com/MOOCproject.html , last visited on September 2013.
[8] Moodle, (2013), https://moodle.org/stats/ , last visited on September 2013.
[9] Rivard R., (2013), July 9, 2013 issue of INSIDE HIGHER ED, received by email from Rick Reis as a member of tomorrows-professor mailing list on September 10, 2013.
[10] Sakarya University Industrial Engineering blended programme, in Turkish, (2013), http://www.ie.sakarya.edu.tr/tr/i/16468/programme-hakkinda , last visited on September 2013.
[11] Wikipedia, (2013), http://en.wikipedia.org/wiki/Massive_open_online_course , last visited on September 2013.

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Making informed and supported choices on e-learning in a university context

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Abstract

The Teaching and Learning Department at the University of Leuven designed a qualitative research project in order to draft policy recommendations for the further development of and investments in e-learning at the university. Through a variety of bottom-up initiatives, projects as well as individual and collaborative efforts, e-learning has found its way into different levels of the university. To further support these initiatives and develop new ones, the university felt it needed to develop an e-learning policy tailor-made to its culture and in line with its vision on Teaching and Learning and its education policy strategy. To this effect, in-depth interviews with deans, programme directors, teaching staff, educational technologists and students were held, individually and in small groups. The main objective was to identify and assess strengths, weaknesses, opportunities and threats of current and new e-learning initiatives. The involvement of the above mentioned stakeholders is key because they are experienced experts and their insights proof to be a strong basis for policy making but also because it creates buy-in and bottom-up support for the implementation phase. The current role of e-learning, its opportunities, pitfalls and constraints were identified in this research project. New trends and developments - like mobile learning, tablet supported learning, game-based learning, OpenCourseWare and MOOCs - were discussed and their alignment with campus education in general and, with the identity and culture of the university in particular were investigated. These strategic reflections give a current status and allow informed and supported choices on e-learning.

Key Words: E-learning mode tailor-made

1. The concept e-learning and blended learning

The use of information and communication technology (ICT) for educational purposes increased in recent decades (Kahiigi, Ekenberg, Hansson, Tusubira, & Danielson, 2008; Tavangarian, Leypold, Nölting, Röser, & Voigt, 2004). Global, societal/political and technological factors contribute to the future of universities (Siemens & Matheos, 2010). E-learning is one of the tools emerged from information technology (IT). The trend in campus-based higher education is to progressively integrate online components into more traditional face-to-face approaches - sometimes in a blended way - to improve the quality of learning performances (Cancannon, Flynn, & Campbell, 2005; Salmon, 2005).
The concept of e-learning is subject to constant change. Sangrà, Vlachopoulos and Cabrera (2012) identify four categories of definitions:

(1) The first category emphasis the technological aspects of e-learning.
(2) The second category defines e-learning as the accessibility of resources. E-learning is the delivery of learning materials and content through various media.
(3) In this category, e-learning remotes exchange, collaboration and interaction between students and instructors.
(4) The last category considers e-learning as an improvement of the quality of learning by facilitating access to resources and services, as well as to ameliorate exchange and collaboration. E-learning support students to improve their learning. Reinmann-Rothmeier (2003, in Fransen, 2006) distinguishes three types of e-learning connected within this category of definitions. *E-learning by distributing* refers to the distribution of information. *E-learning by interacting* addresses the given feedback by the instructor to the student. Finally, increased learning outcome through collaborative learning is called *e-learning by collaboration*.

The use of e-learning technology in course delivery varies widely. Based on the literature, four dimensions of e-learning can be distinguished: synchronicity, location, independence and mode (Greenagel, 2002; Ong, Lai, & Wang, 2004; Vandeput, De Gruyter, & Tambuyser, 2011; Wagner, Hassanein, & Head, 2008).

(1) In this dimension, e-learning can be synchronous (students are present in real-time) or asynchronous (students follow the instruction and work at their own pace and time (Greenagel, 2002; Vandeput et al., 2011; Wagner et al., 2008).
(2) This dimension refers to the location; students can be involved in e-learning from distributed locations or from the same place (Wagner et al., 2008)
(3) E-learning applications can differ in the level of independence; students can work independently or collaboratively with other students to complete learning tasks (Wagner et al., 2008).
(4) The mode e-learning applications can be completely electronic or blended (Wagner et al., 2008).

E-learning facilitates the blending of different learning spaces. A digital learning environment can be combined with campus education. Students can work along the same time or at different times and places (Vandeput, De Gruyter, & Tambuyser, 2011). Blended learning is the combination of classroom face-to-face learning experiences with online learning experiences (Bondarouk & Ruël, 2010; Broeckx, 2012; Garrison & Kanuka, 2004; Graham, 2006; Osguthorpe & Graham, 2003). Blended learning refers to a spectrum of course delivery modalities between traditional face-to-face and online. But blended learning should not simply be considered in terms of delivery and technology (Sloman, 2007). The combination of study materials, teaching methods and learning activities contributes to the realisation of the objectives (Vandeput et al., 2011). Flexible access to learning is one of the key factors influencing the growth of blended learning environments (Graham, 2006). Furthermore, by matching learning technology to the personal learning style, the achievement of learning objectives can be optimized (Broeckx, 2012; Singh & Reed, 2001). Learners can control the content, learning sequence, pace of learning and time (Bondarouk & Ruël, 2010; Osguthorpe & Graham, 2003; Ruiz, Mintzer, & Leipzig, 2006; Vandewaetere & Clarebout, 2011; Vandewaetere, Desmet, & Clarebout, 2011). This allows learners to modify their learning experience to encounter personal learning objectives (Ruiz et al., 2006). Learners train the ability to self-

regulate their learning process by setting goals and monitoring in order to achieve these goals (Broeckx, 2012; Scheiter & Gerjets, 2007; Truyen, Van Dorp, Janssen, Rivera, Griset, & Kuppens, 2011).

2. Developments in the field of e-learning

Higher education is characterized by an increased integration of ICT and e-learning in traditional teaching and learning to stimulate independent learning, individually and in group. The emerging trends in the development of e-learning environments, computer-based adaptive learning, open and online higher education, and mobile learning (or m-learning) are discussed here.

(1) Blewett (2012) presents an artificial framework that classifies e-learning environments into three categories. The first category is called '*Product' e-learning environment* or *Learning Management System (LMS).* Its focus is on content delivery, organization and control of the learning process. The second type, called '*Place' e-learning environment,* emphasises student control and offers a rich set of collaborative tools like blogs, wiki's and social networks. The '*People' e-learning environment* permits the learner to assemble his own set of support devices and content resources to personalize the learning space (Blewett, 2012). Such environment assumes learners to decide on their own learning needs. This requires that students can make adequate choices with respect to the learning process (Clarebout & Elen, 2006).

(2) In the last decade, computer-based adaptive learning environments are an important research topic in the field of e-learning. According to Vandewaetere, Desmet and Clarebout (2011) the online learning environment can be customized in terms of content, content presentation and feedback. Learning environments are called adaptive when the individual learner characteristics are taken into account; cognitive characteristics of learners (learner's background, cognitive style and learning style), affective characteristics (like frustration or confusion) and behavioural learning characteristics (like feedback or support) are important to personalize the content and the learning environment (Vandewaetere et al., 2011). Vandewaetere, Vandercruysse and Clarebout (2012) distinguish two kinds of learning environments. In the instructor-led adaptive system, the learner follows a predefined learning path. In the second type of learning environment, the active learner regulates the learning process.

(3) Thirdly, the demand for open and online education is enormous, as evidenced by the unprecedented worldwide popularity of Massive Open Online Courses (Jacobi & Van der Woert, 2012; Johnson, Smith, Willis, Levine, & Haywood, 2011; Johnson, Adams, & Cummins, 2012; Johnson et al., 2013). Massive Open Online Courses or MOOCs can be considered as an extension of existing online learning approaches, in terms of open access to courses and accessibility to a broad public. The MOOC provides not only course material. It also offers a complete course experience provided with support, coaching, forums, homework assignments and feedback (Schuwer, Janssen, & van Valkenburg, 2013).

(4) E-learning and mobile learning (or m-learning) intersect to produce a learning experience anytime and anywhere, feasible by the existence of mobile hardware and networking technology (Caudill, 2007). Students can regulate the time, place and pace of their learning (Coens, 2013). However, m-learning is more than the use of mobile technology in teaching

and learning. Several researchers (Butoi, Tomai, & Mocean, 2013; Kearney, Schuck, Burden, & Aubusson, 2012; Peters, 2007) stress the pedagogical value of mobile learning in terms of personalization and increasing ownership of the learning process.

3. Critical success factors for e-learning adoption and implementation in a university context

E-learning has been integrated in many university programmes. Despite the fact that implementing an effective e-learning strategy at an institutional level is a hugely complex undertaking, several critical success factors need to be considered while adopting, developing and implementing e-learning programmes (Lisewski, 2004; Pittard, 2004; Selim, 2007). The term Critical Success Factor (CSF) refers to success components that make some organisations more successful than others. Research and literature reviews specify e-learning *Critical Success Factors* (CSFs) to assist universities and instructors to efficiently and effectively adopt e-learning technologies (Lin, Ma, & Lin, 2011).
Based on research findings and literature, four categories of Critical Success Factors (CSFs) need to be considered while developing or implementing e-learning based courses. These factors enhance the success of e-learning development in higher education institutions.

(1) *Technological factor:* The software usability, ease of access and navigation combined with a visual structure and a well-designed interface, are critical aspects to the success of e-learning (Volery & Lord, 2000). A rich and reliable technology infrastructure (Selim, 2007) with support of academic staff by technicians is necessary for successful day-to-day running of e-learning. The support of academic staff in using e-learning applications and technology is helpful when designing e-learning courses (Lin et al., 2011).
(2) *The academic staff:* they play an important role to move e-learning in the university to a new stage of development. Concerning the quality of teaching and resultant benefits, academic staff can be reluctant to the e-learning development process (Selim, 2007). Research - based on the perspective of academic staff - defines several factors that affect e-learning success. According to several studies, the technical competency of instructors (Soong, Chan, Chua, & Loh, 2001; Wagner, Hassanein, & Head, 2008), the lack of knowledge to (re)design courses and the lack of confidence to use e-learning applications (Wagner et al., 2008), can affect the success of e-learning based courses. Furthermore, an important factor in the adoption of e-learning applications is the perceived usefulness or added value (Wagner et al., 2008; Mahdizadeh, Biemans, & Mulder, 2008). To advance the use of e-learning applications by academic staff, changes in attitudes and perception are sometimes more important than changes in skills (Albirini, 2006). Finally, faculty resistance can also be caused by the perceived workload; After all, the development of an e-learning programme requires time, training and the development of technological/ pedagogical skills (Wagner et al., 2008).
(3) *Students*: In order to be successful in the e-learning area, they need technical competency and support (Soong et al., 2001; Selim, 2007). A positive attitude to IT to utilize the e-learning applications is a critical factor that affects e-learning success (Lin et al., 2011). In addition, students indicate the need for time management, discipline and structure in order to use e-learning environments successfully and to learn properly (Selim, 2007).
(4) *Management support and leadership*: To adopt and implement e-learning on campus, institutional strategy, structure, support (Graham, Woodfield, & Harrison, 2013) and

planning (Garrison & Kanuka, 2004) are key issues. Findings from their research (Graham et al., 2013) indicate that institutions of higher education must proceed with a strategy and uniform definition of e-learning or blended learning on campus. The institution can decide on the grade of adoption and implementation. In addition, the institution is able to create robust structures to encourage institutional models and to formally evaluate the learning outcomes. Finally, the college or university can establish technical and pedagogical support to address the e-learning/blended learning development process. To support academic staff, a well-established faculty incentive structure for training and development is advisable, according to Graham, Woodfield and Harrison (2013). Garrison and Kanuka (2004) underline the strategic and operational planning to develop and sustain blended learning. The strategic planning contains tracing the needs, goals and objectives. Identifying (potential) costs like technology, human resources and infrastructure need to be determined. To operationalize the goals and objectives, an action plan is needed (Garrison & Kanuka, 2004). After clarifying the goals and objectives, the identification of issues and barriers (like technical glitches, resistance from the faculty or department head) is an opportunity to be proactive and handle apparent problems (Niemiec & Otte, 2012).

Overall, in order to take full advantage of the potential of e-learning in an institute for higher education, the requirements and concerns of several stakeholders (students, faculty members, management) must be fulfilled as much as possible (Wagner et al., 2008).

The present study identifies what types of e-learning are perceived as successful by different stakeholders (students, academic staff and e-experts) in a university context and can be extended in the coming years. The current role of e-learning, its opportunities, pitfalls and constraints were identified in this research project.

4. Methodology

In order to maximize the potential of e-learning implementation at the University of Leuven, the present research project identifies the needs and concerns of stakeholders (academic staff, e-learning experts and students) in order to gain insight into the extent to which the university can maintain, strengthen, expand or extend the development of e-learning the coming years. A section of the study concerns the needs and requirements of users with regard to the electronic learning environment of the university, called Toledo.

In the present study, students (n = 243) were questioned via an online survey in the period of June 2013. All 14 faculties, without the associated institutions, are represented. Academic staff members (n = 81) were involved through focus group discussions, with one focus group at every faculty. One-to-one interviews were set up with e-learning experts (n = 32), who are linked to the faculties. Given their experience with e-learning in higher education, as well as their knowledge and proficiency regarding education policy, their point of view is enquired. The choice was made for the qualitative method like focus group discussions and one-to-one-interviews to provide a deeper understanding of the needs and concerns related to the e-learning development in the university context.

The survey for students is composed of two sections. In the first section, students were asked to indicate which faculty they are connected to and what study stage they are in.

Secondly, these four open-ended research questions (RQ) were presented to the students:

RQ1	What is your opinion about the quality of theoretical and practical lectures?
RQ2	For what purpose do you appeal to Toledo? What could be improved, modified, expanded and for what reason?
RQ3	In what way can educational technology and e-learning applications complete, optimize and enhance your training programme?
RQ4	What does the university of the future look like? What significance will be given to e-learning?

For the analysis of the students' responses on the online survey, thematic clustering of responses per question is used. This allows the determination of percentages, which indicate how many students have a similar or different opinion about a question, stated in the online survey.

All interviews with the academic staff and the e-learning experts were taken on tape, respecting their privacy and anonymity. The collected data or quotes were analysed by utilizing a template composed of four columns. The first column contains the strengths of contemporary applications of e-learning at the university. The second column is related to the opportunities of e-learning. Quotes in the third column are requirements, preconditions and concerns of academic staff and e-learning experts about the current state of e-learning. Concerns regarded to the development process for the near future were placed in the last column.

Four research questions (RQ) - in each column one - operated as a starting point of the focus group discussions (with the academic staff) and one-to-one interviews (with the e-learning experts):

Strengths of contemporary e-learning applications at the university	*Opportunities of e*-learning, for now and for the future of the university	*Restrictions, conditions and issues according to e-learning implementation*	*Managing recent developments in the field of e-learning*
RQ1 What kind of e-learning applications are successfully established in the teaching and learning process, according to academic staff and e-learning experts?	RQ2 In what way e-learning technology may optimize and enrich campus education?	RQ3 What needs and requirements appoint academic staff and e-learning experts so that the exploration of e-supported learning and teaching is perceived as more attractive?	RQ4 What is the opinion of academic staff and experts on new developments in higher education and how can the university respond to these developments?

5. Our findings based on the survey of students

The responses of students on the first research question reveal that 75% of the students are mainly positive about the quality of the theoretical and practical sessions. Students attach great importance to interactive and well-structured lesson activities complemented with didactical learning materials of high quality. Further, a majority of students attaches importance to web lectures and knowledge clips and consider these as complementary to the teaching and learning process. However, if this would lead to a reduction or a replacement of the number of contact moments, students are reluctant to this shift.

The analysis of the second research question indicates that the opinion of students is largely similar in terms of their needs and wishes regarding an electronic learning platform in general, and specifically Toledo. There is unanimous agreement among students that an electronic learning platform should be organized and well-structured, provided with tailor made information. Furthermore, an integrated search function plugged into a fast operating system is desirable but not always provided. The platform Toledo appears to be often consulted by students; 79% consults daily, 15% several times a week and about 6% consults Toledo once a week or less. However, a majority of the students argue that the interface of Toledo requires a lot of clicks, is quite complex and is intuitive in a rather limited way. Students ask for a more appealing, streamlined interface within a fast operating system. Learning materials should be placed on Toledo in time and in a uniform matter. Students also ask for more alignment between Toledo and their mobile devices, for example when consulting their course schedules. Finally, the online survey reveals that students are familiar in using communication tools (like Facebook) in addition to the tools offered in Toledo.

The responses of students to the third question - how educational technology can complement, optimize and enrich the academic training - indicate that 45% of the students (especially students from the medical training) attach great importance to the web lectures; a web lecture makes it possible to reconsider and repeat difficult passages. Some students indicate that they actively look for video materials from other universities in order to clarify complex learning materials. However, 7% of the students have reservations about web lectures. A possible reason - distilled from their answers - may be that these students attach great importance to the contact moments with the lecture and other students. These students consider a web lecture as a threat to replace these moments.

The question how the university can grow in the field of e-supported learning and teaching is answered by students; web lectures may not disappear (12% of the students argue this) and should even be further extended (63% of the students). About 13% has no idea how the university might evolve in the field of e-supported learning and teaching.

6. Our findings based on the interviews with academic staff and e-learning experts

The academic staff and e-learning experts are unanimous in their view that e-learning is an incentive to think about new pedagogical models for teaching and learning. A much-frequented theme discussed by academic staff and e-experts is the expectation that students can work independently and can actively participate in a blended learning environment. The responsibility lies with the students to make use of the offered e-tools and e-applications.

The response of the academic staff and e-experts on each research question is discussed below.

RQ1: Successfully established e-learning applications in the teaching and learning process

The first research question presented to the academic staff and e-experts highlights successfully established e-learning applications in the teaching and learning process. The study reveals that academic staff occasionally experiment with e-learning and make use of a variety of e-applications: the electronic learning environment Toledo, question databases, the Student Response System or so called 'clicker', web lectures and knowledge clips, software on the Internet and PowerPoint in combination with audio recording. Particularly web lectures and the digital learning environment Toledo are frequently used by the academic staff.

Several positive aspects of the virtual learning environment Toledo are mentioned. Firstly, Toledo is integrated in the existing structures and administration of the university. It is the official communication channel between students and academic staff members. Besides, Toledo has the advantage of being a safe and enclosed environment in which privacy is guaranteed and copyright collection works can be shared. Occasionally Toledo e-tools are combined with (free) software available on the Internet or with apps (like Dropbox).

A large majority of the interviewed academic staff and e-experts emphasize the educational component of web lectures; duplication and transfer of knowledge may not be the (only) message of web lectures. Especially the e-experts underline the relevance of considering the use of web lectures or rather knowledge clips are desirable.

RQ2: How e-learning can optimize and enrich campus education

The second research question highlights the opportunities of e-learning, now and for the future of the university. Students expect interactive contact moments provided with feedback and support. E-learning can respond to these expectations in the form of *'flipping the classroom'*. According to Tucker (2012), the main idea is to flip the common instructional approach. Instruction is accessed at home using web lectures/online exercises in advance of the interactive contact moment. All aspects of instruction can be rethought.

RQ3: Needs and requirements of academic staff and e-experts regarding to e-learning

A general observation is that academic staff and e-experts show interest in and openness to new e-learning applications. A restricted exploration and implementation of e-learning in a course is not so much a sign of little effort or absence of ambition. However, they stipulate a number of conditions which must be fulfilled. Seven constraints are discussed here.

(1) *Expanding the quality and availability of ICT-infrastructure*
Well-functioning IT facilities and infrastructure are a precondition to implement e-learning in practice. It is necessary to extend the current ICT-infrastructure for creating web lectures and knowledge clips.

(2) *Professionalisation: extending their competences regarding e-learning*
To promote the effective and sustainable use of e-learning, competence development seems to be a second requirement. It appears that the academic staff is more willing to continue exploring the field of e-learning when they feel autonomous and competent. Their skills (or lack of skills) influence their motivation. Moreover, the perceived usefulness of e-learning

affects their intention to adopt or implement e-learning in the teaching practice.

(3) *Installing new teaching methods versus the (preferred) comfort zone*
Based on the interviews with academic staff, e-experts and students, is seems to be a challenge to push the boundaries of the comfort zone of students and academic staff to encourage implementing e-learning across the university.
Students give the signal to their lecturers that they agree with following lessons, listening and taking notes. Teaching staff in turn interpret these signals. A positive evaluation of the lectures by the students perpetuates the lecturer to continue the way of teaching. This maintains the approach taken by the lecturer, instead of exploring the area of e-learning through trial and error. Academic staff expects that students develop a (more) open attitude regarding new ways of teaching and learning.

(4) *Promoting cooperation and partnership*
According to the academic staff, they are facing the challenge to combine different task responsibilities. Teamwork seems to be attractive to facilitate the allocation of responsibilities among academic staff, to take risks and to adopt new teaching strategies. The composition of a multidisciplinary team consisting of several academic staff members seems to be appropriate. During a certain period, academic staff members can work as a team in order to (re)design courses. This allows to (re)think what is taught, how many contact moments are appropriate/ necessary and especially to discuss the role of e-learning in the process of course (re)design.

(5) *Promoting dissemination and sharing good practices*
The increasingly extensive responsibilities of academic staff members are regularly discussed during the interviews. The support of a professional design team composed of a teaching assistant, a media specialist, a graphic designer and an educational technologist can be needed when (re)designing the courses.

(6) *Supporting dissemination and sharing good practices*
Due to the provided funding and innovation projects at the university, e-learning practices make their way to the faculties and the study programmes in order to encourage educational reform and improvement. However, some e-experts note that the transfer opportunities from one context to another context (within and between academic training programmes/faculties), are at times challenging to accomplish.

(7) *Providing a well-structured, intuitive and personalised digital learning environment*
What is needed today, according to the respondents, is a virtual learning environment where users, tools, communities and resources interact in a flexible way. The respondents promote an open and collaborative environment for learning where university members can use their own environments and tools. A more personalised learning environment is welcome with the opportunity to open up the environment while maintaining intellectual property rights.

RQ4: Managing recent developments in the field of e-learning

Academic staff and e-experts look from a different angle to trends and developments in higher education. Academic staff considerate what this means for them and their teaching practice (micro level). In contrast, e-experts identify trends rather as an opportunity for the academic community in

order to consider if a certain development aligns with the university context. A central issue - mainly questioned by e-experts - is how the university can and will respond to new trends, for instance opening up (higher) education. The e-experts point out four thoughts regarding the way in which the university responds to trends in higher education in general, and e-learning in particular.

(1) *The cautious role of the university*
A look into the future of the university requires a look into the past, according to the experts. In the past, the university had rather an ad hoc policy with a number of separate initiatives on e-learning. The relatively hesitant and reserved attitude of the university is in contrast with an attitude that monitors trends and developments and flexibly responds to current developments in higher education, such as the Massive Open Online Courses (MOOCs).

(2) *The quality of education*
The interviewed experts unanimously agree that the quality of education has to be the primary consideration when the university invests in educational reform generally, and in e-learning specifically. Quality assurance should be made in advance, especially when opening up education. Offering open online courses and providing digital materials enhances the transparency. This promotes the delivery of high quality digital learning materials.

(3) *The university as a flexible organisation*
E-learning experts expect universities to be flexible learning organisations with an open attitude towards educational reform. The university should be present, there where innovation takes place.

(4) *Entering the discussion concerning open and online education*
A negotiation the university has to deal with – according to e-experts - is related to open and online education. Five considerations are discussed during the interviews.
A first consideration covers the inflow of learners in open and online academic education. Mainly 18-year olds register for a study programme at the university. By opening up higher education, other types of learners will enter university.
A second consideration concerns the intended business model of the university. Will the guiding motive be striving to high quality? Or will an economic point of view reveal? What will be the business model and leading motive(s) of the university?
An unanswered question, up to now, is how the online component will look like in campus education. Campus students can benefit from online education, as well as the potential students and the alumni.
The fourth point of discussion is the issue of how open the university wants to be and how concepts (such as open education, open access and 'free' sharing content) can be understood and defined.
Finally, another pressing question is what kind of (e) courses the university will offer. Will this be a first introduction of a particular subject (domain), or an (e) course in the context of lifelong learning?

7. Discussion and recommendations

In order to adopt and implement blended learning or e-learning on campus, the university needs:

(1) To create a clear institutional policy vision on e-learning/blended learning

(2) To work out a policy strategy and a number of initiatives

(3) To considerate the constraints and critical success factors that can affect the adoption process.

The question remains what the university wants to preserve, expand, enhance or add. The challenge will be to seek a balance between flexibility on the one hand and stability on the other.

An institutional policy vision

An overall finding, established through questioning the students, academic staff members and e-experts, is that they appraise the contact moments and want to retain them. The study indicates that blended learning is in line with the current situation and university context. The adoption of blended learning in the university implies a debate on how to use best educational technology resources. In addition, the design of experiments in blended learning has to be supported on one hand. A policy that ensures stability, on the other hand, is also desirable. The academic quality of education is a crucial objective. The objective of increasing visibility and reinforcing the position of the university is relevant insofar as it assists to achieve the central goals of the university. Seeking a balance between top-down and bottom-up initiatives is conductive to sustainably embed blended learning in the university context.

A policy strategy and planning of initiatives

Once the policy vision is well-defined, a feasible concrete action plan is the next item. The planning phase may consist of the formulation of concrete targets, followed by defining the period and discussing the responsibilities and resources. The preparation of this work plan is a process that presupposes dialogue and coordination. Moreover, the extent to which faculties can determine their own accents regarding blended learning can be specified in this action plan. The inclusion of this planning phase before implementation of blended learning is essential since it may not be assumed that educational innovation immediately will catch on. Before the implementation, the engagement of all stakeholders from the start is therefore an important principle. The stage of implementation and development offers teaching staff the time to explore the opportunity and application of blended learning.

Change management is a prerequisite which is promoted when the third pillar, namely the constraints and preconditions in order to successful adoption and implementation of blended learning.

The constraints and critical success factors

Successful adoption and implementation of blended learning is closely linked to several prerequisites.

In the first place, competence development, professionalisation and the provision of adequate support for academic staff members is needed. In order to initiate blended learning, the provision of incentives to faculty and departments may be provided.

A professional design team, composed of experts with competences regarding the (re) design of training programmes and the use of educational technology in the context of blended learning, can

work together with academic staff.

Thirdly, a stable and well-developed ICT-infrastructure is a precondition for blended learning. It is appropriate that the infrastructure can be adapted and expanded. Moreover, the challenge in a blended learning environment is to align the electronic and physical learning environment. The learning environment should be flexible in order to respond to new developments. The overall usability and accessibility both of Toledo as other initiatives, has to prevail. The survey shows that the platform Toledo has a valued role. The first task in this respect is to position the platform so that it can function as a safe and optimal platform. For the further development of Toledo, the analysis what this platform currently offers, what the users need and what can be done in-house or may be outsourced, is appropriate.

Finally, it is of importance that the university develops a quality assurance system for the purpose of determining the quality of blended learning processes. Not only the satisfaction of students and teaching staff should be examined, but also the evaluation to ascertain whether the objectives are achieved and the resources are used properly.

References

Agency for Educational Services [AgODi] (2008). Education in Flanders. A broad view of the Flemish educational landscape. Retrieved from http://www.vlaanderen.be/

Albirini, A. (2006). Teachers' attitudes toward information and communication technologies: The case of Syrian EFL teachers. *Computers and Education, 47*(4), 373–398.

Blewett, C. (2012). E-learning terminology trends - A lens into institutional Paradigms? *Alternation, 19*(2), 211-235.

Bondarouk T., & Ruël, H. (2010). Dynamics of e-learning: Theoretical and practical perspectives. *International Journal of Training and Development*, *14*(3), 149-154.

Bologna Declaration (1999). Joint declaration of the European Ministers of Education. Retrieved from http://www.ond.vlaanderen.be/hogeronderwijs/bologna.

Broeckx, T. (2012). *Blended learning, wat is de optimale mix? Een theoretisch model* (Masterproef, KU Leuven, België). Afgehaald van http://aleph08.libis.kuleuven.be.

Butoi, A., Tomai, N., & Mocean, L. (2013). Cloud-Based Mobile Learning. *Informatica Economică, 17*(2), 27-40.

Cancannon, F., Flynn, A., & Campbell, M. (2005). What campus-based students think about the quality and benefits of e-learning? *British Journal of Educational Technology, 36*(3), 501–512.

Caudill, J.G. (2007). The growth of m-learning and the growth of mobile computing: Parallel developments. *International Review of Research in Open and Distance Learning, 8*(2), 1–13.

Clarebout, G., & Elen, J. (2006). Tool use in computer-based learning environments: towards a research framework. Computers in Human Behavior, 22, 389–411.

Coens, J. (2013). Mobile learning in higher education. The multitasking issue (doctorate).

Fransen, J. 2006. Blended Learning; Een nieuwe werkdefinitie van Blended Learning. *Tijdschrift Onderwijsinnovatie*, 2, 26-29.

Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *The Internet and Higher Education. 7*(2), 95-105. doi: 10.1016/j.iheduc.2004.02.001.

Graham, C.R. (2006). Blended learning systems: Definition, current trends, and future directions. In

C.J. Bonk & C.R. Graham (Eds.). *The handbook of blended learning: Global perspectives, local designs* (pp. 3-21). San Francisco, SF: John Wiley.

Graham, C.R., Woodfield, W., & Harrison, J.B. (2013). A framework for institutional adoption and implementation of blended learning in higher education. *Internet and Higher Education, 18*, 4-14.

Greenagel, F. L. (2002). *The illusion of e-learning: Why we are missing out on the promise of technology.* Phoenix: League for Innovation in the Community College, white papers; http://www.league.org/publication/whitepapers/ 0802.html

Huys, I., Debackere, K., & De Kock, L. (2009). Higher education in the Flemish community of Belgium, the French Community of Belgium, Luxembourg and the Netherlands. Brussels: Expertisecentrum O&O Monitoring van de Vlaamse Gemeenschap, in collaboration with the Flemish Ministry of Education and Training.

Jacobi, R., & Van der Woert, N. (Eds.). (2012) *Trendrapport Open Educational Resources2012*. Utrecht: SURF / SIG Open Educational Resources.

Johnson, L., Adams, S., & Cummins, M. (2012). The *NMC Horizon Report: 2012 Higher Education Edition.* Austin, Texas: The New Media Consortium.

Johnson, L., Adams, S., Cummins, M., Estrada, V., Freeman, A., & Ludgate, H. (2013). *NMC Horizon Report: 2013 Higher Education Edition*. Austin, Texas: The New Media Consortium.

Johnson, L., Smith, R., Willis, H., Levine, A., & Haywood, K. (2011). *The 2011 Horizon Report.* Austin, Texas: The New Media Consortium.

Kahiigi, E.K., Ekenberg, L., Hansson, H., Tusubira, F.F., & Danielson, M. (2008). Exploring the e-learning state of the art. *The Electronic Journal of e-Learning*, *6*(2), 77-88. Afgehaald van http://www.ejel.org.

Kearney, M., Schuck, S., Burden, K., & Aubusson, P. (2012). Viewing mobile learning from a pedagogical perspective. *Research in Learning Technology*, 20. doi:10.3402/rlt.v20i0/14406

KU Leuven (2009). K.U.Leuven's vision of teaching and learning. Approved by the Academic Council d.d. 16/11/2009. Retrieved from http://www.kuleuven.be/ducation/KULeuven-Vision_of_teaching_and_learing-2009.pdf.

Lisewski, B. (2004). Implementing a learning technology strategy: top–down strategy meets bottom–up culture. *Research in Learning Technology*, *12*(2), 175-187.

Lin, C.C., Ma, Z., & Lin, R.C.P. (2011). Re-examining the Critical Success Factors of e-learning from the EU perspective. *International journal of Management in Education*, *5*(1), 44-62.

Mahdizadeh, H., Biemans, H., & Mulder, M. (2008). Determining factors of the use of e-learning environments by university teachers. *Computers & Education*, *51*(1), 142-154.

Niemiec, M., & Otte, G. (2009). An administrator's guide to the whys and hows of blended learning. *Journal of Asynchronous Learning Networks, 13*(1), 19-30.

Ong, C.S., Lai, J.Y., & Wang, Y.S. (2004). Factors affecting engineers' acceptance of asynchronous e-learning systems in high-tech companies. *Information & Management, 41*(6), 795-804.

Osguthorpe, R.T., & Graham, C.R. (2003). Blended learning environments: Definitions and directions. *The quarterly review of distance education, 4*(3), 227-233.

Peters, K. (2007). M-learning: positioning educators for a mobile, connected future. *International Review of Research in Open and Distance Learning, 8*(2), 113-132.

Pittard, V. (2004). Evidence for e-learning policy. *Technology, Pedagogy and Education, 13*(2), 181–193.

Ruiz, J.G., Mintzer, M.J., & Leipzig, R.M. (2006). The Impact of e-learning in medical education. *Academic Medicine, 81*(3), 207-212.

Salmon, G. (2005). Flying not flapping: A strategic framework for e-learning and pedagogical innovation in higher education institutions. *ALT-J, 13*(3), 201–18.

Sangrà, A., Vlachopoulos, D., & Cabrera, N. (2012). Building an inclusive definition of e-learning: An approach to the conceptual framework. *International Review of Research in Open and Distance Learning, 13*(2), 145-159.

Scheiter, K., & Gerjets, P. (2007). Learner control in hypermedia environments. *Educational Psychology Review*, *19*, 285–307. doi 10.1007/s10648-007-9046-3.

Schuwer, R., Janssen, B., & van Valkenburg, W. (2013). MOOCs: Trends and opportunities for Higher Education. In R. Jacobi, & N. van der Woert (Eds.), Trendrapport Open Educational Resources 2012 (pp. 9-15). Utrecht: SURF Foundation - Special Interest Group Open Educational Resources.

Selim, H.M. (2007). Critical success factors for e-learning acceptance: confirmatory factor models. *Computers and Education, 49*(2), 396–413.

Siemens, G., & Matheos, K. (2010). Systemic changes in higher education. *Education*, *16*(1).

Singh, H., & Reed, C. (2001). A white paper: Achieving success with blended learning. *Centra software*, *1*.

Sloman, M. (2007). Making sense of blended learning. *Industrial and commercial training, 39*(6), 315-318.

Sloman, M. (2009). Learning and technology – what have we learnt? *Journal of Applied Research in Workplace E-learning, 1*(1), 12–26.

Soong, M.H.B., Chan, H.C., Chua, B.C., & Loh, K.F. (2001). Critical success factors for online course resources. *Computers and Education*, 36(2), 101–120.

Tavangarian, D., Leypold, M. E., Nölting, K., Röser, M., & Voigt, D. (2004). Is e-learning the solution for individual learning? *Electronic Journal of e-Learning, 2*(2), 273−280.

Truyen, F., Van Dorp, K., Janssen, B., Rivera, J., Griset, R., & Kuppens, A. (2011). Open educational resources in a multi-campus and virtual campus environment. In L. Gómez Chova, D. Martí Belenguer, & A. López Martínez (Eds.), *EDULEARN11 Proceedings CD* (pp. 001248-001258). EduLearn. Barcelona, Spain: International Association of Technology, Education and Development (IATED).

Vandeput, L., De Gruyter, J., & Tambuyser, L. (2011). *Van e-leren naar geïntegreerd blended learning. Planning en implementatie van blended learning. Leuven: KHLeuven*.

Vandewaetere, M., & Clarebout, G. (2011). Can instruction as such affect learning? The case of learner control. *Computers and Education, 57*(4), 2322-2332.

Vandewaetere, M., Desmet, P., & Clarebout, G. (2011). The contribution of learner characteristics in the development of computer-based adaptive learning environments. *Computers in Human Behavior, 27*(1), 118–130.

Vandewaetere, M., Vandercruysse, S., & Clarebout, G. (2012). Learners' perceptions and illusions of adaptivity in computer-based learning environments. *Educational Technology Research and Development*, *60*(2), 307-324.

Volery, T., & Lord, D. (2000). Critical success factors in online education. *International Journal of Educational Management*, *14*(5), 216-223.

Wagner, N., Hassanein, K., & Head, M. (2008). Who is responsible for E-Learning Success in Higher Education? A Stakeholders' Analysis. *Educational Technology & Society*, *11* (3), 26-36.

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MOOCs: Different Approaches and Paradigms

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Abstract

Within the context of the digital agenda for Europe, one of the aims is to achieve higher levels of employment, maximising the potential of the internet as a vital medium of economic activity. Quality and carefully-chosen, free and open online education resources at entry levels of competence enable a wide spectrum of citizens to study specific subjects which are, in themselves, of interest and value to the learner. The web-learning format also enables these citizens to develop and apply a wide range of media literacy skills, through creative student assignment tasks, interaction with diverse learning content, through peer-based feedback and communication using a wide range of social networks. This broad range of competencies is indispensable to the digital, knowledge economy of the future so employment prospects are improved for participating citizens.

A new format for distance learning is represented by the MOOCs (Massive Open Online Courses) model.

The current MOOCs scenario reveals a strong American presence, dominated by the Ivy League universities and prominent investors, and the term MOOC seems almost synonymous with their platforms and providers (Coursera, EdX, Udacity etc.). The collaborative paradigm and connectivist learning theories at the heart of the original MOOCs been lost. In opposition to this, Europe aims to put forward a new model for MOOCs based on constructivist theories.

The scope of this paper is to analyse the various paradigms used in the construction of MOOCs for the creation of university distance learning content. We will also make a comparative analysis of the key international players present on the Web.

Keywords: MOOC, web learning, open education, collaborative learning

Premise

Over the last few years, Education systems have been the focus of public debate all over the world. The motivation for reform is based on economic, pedagogic, financial and even political factors (the

soft power democratisation of education). Institutions are working hard to try and match educational offerings to a changing social context and radically different learning styles amongst the younger generations. After years of largely commercially-led initiatives and experiments and after the important trends launched by the OCW initiative in 2004, elearning today definitely falls under the *open education* umbrella and its impact promises to be unprecedented and, in certain ways, disruptive (Christensen, 2006). The 2013 Horizon Report says that "*One of the most appealing promises of MOOCs is that they offer the possibility for continued, advanced learning at zero cost, allowing students, life-long learners, and professionals to acquire new skills and improve their knowledge and employability".* MOOCs set out to meet the challenges of online learning but also raise new questions: "*A number of converging trends pose a challenge to brick-and-mortar institutions:*

- *the emergence of the learning sciences and their application to educational practice,*
- *the movement toward competency-based education, and*
- *new business models that effectively combine instructional quality, lower cost, and increased access through unlimited scalability (MOOCs)."* (Mazoue, 2013).

Many people are asking what, if anything, is really new about the recent development in *open education* projects known as MOOCs. The aim of this paper is to see what potential MOOCs have for innovation in teaching methodology, and what aspects of previous OCW, distance education and e-learning experiences they incorporate. The research methodology and organisational model we chose was Mo.D.e.M. – already successfully employed in a number of projects – which would allow for analysis of MOOCs new learning technologies.

Mo.D.e.M. platforms

The Mo.D.e.M. platform (Didactic Models and Methodologies) was developed in 2004 by the Federica team under the direction of Prof. Mauro Calise to define and systemize the didactic and technical approaches in university e-learning. During the early stages of the project, a study of all the main university e-learning experiences in Italy was carried out and this led to the definition of a set of variables and types of e-learning portals. This study provided an analysis and synthesis of the technology and pedagogy in e-learning approaches which was put into practice in 2007 when funding was given from FESR Campus Virtuale to develop the Federica platform to provide Federico II university with a hypermedia weblearning environment to deliver learning content from the university courses openly and free of charge.

Mo.D.e.m identified technical-pedagogic variables:

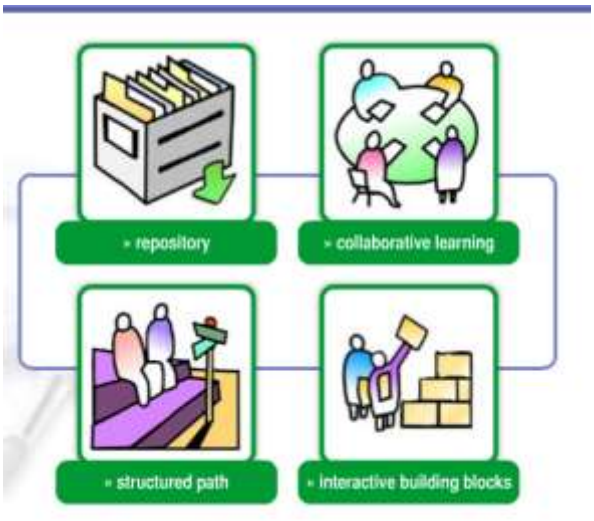
- **multimedia interactivity**: this refers to how much bi-directional communication the format allows. The specific parameters are communication between participants in the learning process and interaction with the materials/tools used for the course
- **content management**: structure and management of course content. Parameters are granularity and interoperability. Granularity refers to whether the content can be broken down into modules or divided according to a specific time-frame, to university credits, or to topics. Interoperability refers to the ease with which different devices within the learning system connect with each other

- **blended learning**: refers to the combination of traditional on-site teaching and online modules in distance learning. High levels of integration are achieved when the same courses are offered both online and on site.
- **technological complexity**: refers to course delivery and exploitation models. Any course can be delivered using low or high ICT support.

Identifying these variables and analysing where they intersect means that web learning experiences can be divided into four categories:

- **repository**, students can download teaching materials but cannot upload any of their own work.
- **collaborative**, students interact through a variety of synchronous and asynchronous channels, co-constructing shared knowledge pathways.
- **structured path**, the learning journey is pre-determined and early units have to be passed before learners can move onto subsequent modules.
- **interactive building blocks**, students are active participants in their choice of learning content and course structure.

Mo.D.e.M. provides a system for the interpretation of learning models and therefore enabled us to explore the logic of e-learning experiences over time. This reference system can be used to analyse different e-learning models, including MOOCs and aids in the understanding of what characterises existing MOOCs.



E-learning variables and related issues

As the Internet developed during the early part of this century, various e-learning platforms started to emerge. The most popular were closed, standardised platforms, some of them free of charge (Moodle) and others paying (Blackboard and in Italyi Docebo). Top-ranking universities on the international stage viewed these as the best environment for creating their e-learning courses. Blackboard was the platform of choice for internationally-renowned universities like Bocconi University, Cattolica del Sacro Cuore University and Warwick university for the management of their online courses. The branding and relatively high costs persuaded many other universities to opt for systems like Moodle, a Learning Management System (LMS) that educationalists can use as they wish. The Open University, the first online university in the world, used Moodle until 2007 and another 500 universities also adopted it (Panini, 2012). LMS imply a structured, guided learning system that is available only to a limited group of registered users and teaches specific skills. These e-learning platforms delivered the kind of modular, guided learning known as structured learner pathways which include some level of interaction between student and teacher, albeit fairly limited, and interoperability between the content offered.

However, MIT's decision to offer a large range of their courses online that any Internet user could consult free of charge totally changed the face of university e-learning projects which were only available to their own students. Not only is the OpenCourseware learning content the perfect example of the **Repository** type of e-learning within the **Mo.D.e.M.** system but it also changed people's view of online scientific knowledge and reinstated universities in their traditional role as content guides and credentialers of knowledge.

The availability of e-learning platforms resulted in widespread growth in the distance learning sector, and the free circulation of learning materials and Open Content meant that the Web took on even greater importance. The web 2.0 phase resulted in *collaborative content management* systems. With the birth of blogs, VoIP channels, Wiki platforms and social network sites (de Kerckhove, 2006) users could intervene directly in the creative process of the content. The new learning environments are more informal and personal, as Graham Attwell explained (2007): "*The idea of a Personal Learning Environment (PLE) recognises that learning is on-going and seeks to provide tools to support that learning. It also recognises the role of the individual in organising his or her own learning.*

Moreover, the pressures for a ple are based on the idea that learning will take place in different contexts and situations and will not be provided by a single learning provider. Linked to this is an increasing recognition of the importance of informal learning". Technological evolution and the move towards a convergence culture (Jenkins, 2007) lead to a concept of *open elearning* whereby users select their own information sources and share them through learning communities.

This leads on to Open Social Learning (OSL) inspired by the Social Learning Theory devised by Albert Bandura (1977) where the focus is on "collective knowledge production". There are relatively few examples of OSL and they all fall within the **Collaborative Learning** quadrant. One experiment called "Progetto Facebook" headed by professor Piscitelli from the School of Communications at the University of Buenos Aires aimed to: "*Experiment new learning models, Generate knowledge, Develop collaborative production, Stimulate technical ability*" (Piscitelli, 2010).

The move towards interactivity led to increased interest in collective learning and study systems with topic-based work groups. In 2007, a team led by McAuley, at the University of Manitoba in Canada, set up a project called Livingarchives, which was described as "*a synthesis of social net-working technologies and knowledge creation principles*" (Scardamalia, 2002). In 2008, this same research group offered the first interactive course, the inaugural Connective Course (CCK08), and Dave Cormier, the course designer, coined the term "MOOC" to describe it. Courses like this originated as experiments in connectivist-style learning and represent one of the few real examples in the **Interactive Building Blocks** quadrant. With the connectivist approach, the students take on the role of tutors for their peers, taking part in online discussions and providing further explanation and illustration of topics covered by the teachers (Downes, 2010).

Connectivist –type MOOCs, termed c-MOOCs, are based on a spirit of cooperation. The MOOC is conceived as a course, which is open to any interested party, with a learning community as support. A kind of "natural selection occurs once the course is under way as learners discover to what extent they manage to engage with the content and the community. When students fail to follow the lessons or participate on the networks they usually drop out.

Connectivist MOOCs were the first type of MOOCs. As they became more widespread the model evolved and different types emerged as will be seen in the subsequent paragraphs.

References:

Attwell, G. (2007). Personal Learning Environments - the future of eLearning?, eLearning Papers January 2007, Vol 2, No 1.

Bates, T., (2012, August 5). What's right and what's wrong about Coursera-style MOOCs? Retrieved from: http://www.tonybates.ca/2012/08/05/whats-right-and-whats-wrong-about-coursera-

Bell, F. (2011). Connectivism: Its place in theory informed research and innovation in Technology enabled learning. Retrieved 2011, 20 May

de Waard I., Koutropoulos A., Keskin N.O., Abajian S.C., Hogue R., Rodriguez C. O, Gallagher M.S., Exploring the MOOC format as a pedagogical approach for mLearning, paper for MLearn 2011

Guardia L., Maina M., Sanerà A., MOOC Design Principles. A Pedagogical Approach from the Learner's Perspective, eLearning Papers, May 2013

Hill, P., (2012). Online educational delivery models: A descriptive view. Educase Review,

Young, J.R., (2012). Inside the Coursera Contract: How an Upstart Company Might Profit From Free Courses, Chronicle, From chronicle.com/article/How-an-Upstart-Company-Might/133065

Jeffrey R. Y., (2013) California State U. Will Experiment with Offering Credit for MOOCs, Chronicle of Higher Education, January 15, 2013

Katsomitros, A. (2013) . Does Europe need its own Mooc?, Guardian, 2013-09-13

Kop, R. (2011). The Challenges to Connectivist Learning on Open Online Networks: Learning Experiences during a Massive Open Online Corse, The International Review of Research in Open and Distance Learning, Special Issue - Connectivism: Design and Delivery of Social Networked Learning, 12, 3, 2011-03-01

Mazoué J. G., (2012), "The Deconstructed Campus," Journal of Computing in Higher Education, vol. 24, no. 2

Mazoue J. G., (2013) The MOOC Model: Challenging Traditional Education, EDUCAUSE Review Online 2013, from http://www.educause.edu/ero/article/mooc-model-challenging-traditional-education

McAuley A., Stewart B., Siemens G., Cormier D., (2010) THE MOOC MODEL FOR DIGITAL PRACTICE, University of Prince Edward Island through the Social Sciences and Humanities Research Council's "Knowledge Synthesis Grants on the Digital Economy".

Piscitelli, A., Adaime, I., Binder, I., (2010) El Proyecto Facebook y la posuniversidad. Sistemas operativos sociales y entornos abiertos deaprendizaje, Editorial Ariel, S.A.,

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Student Socialisation within Online Distance Education Programmes – Starting at the Start.

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Abstract:

Within Oscail – DCU Distance Education, a pilot project was carried out that utilised a virtual learning environment (Moodle) to create a space where students began their socialisation into the distance education context a number of months before they were formally inducted into their programmes. The aim of this project was to identify means to increase retention and progression in first year, undergraduate distance education students by introducing them, at as early a point as possible, to a socialisation programme made up of elements described by the existing literature and research as positively impacting on the first year experience. This pilot project had a number of goals: to create a student-focused process; to create a positive impression of the institution; to reduce anxiety for new students; to facilitate socialisation; to inform students of their rights/responsibilities; introduce students to academic and organisational skills; and, most importantly, to support students in their transition to distance education. Thirty-five students engaged with the course, exploring its contents and interacting with each other and a dedicated tutor. Qualitative data has been gathered from a number of students, who are now at the end of their first year on two undergraduate courses. Data collection, using a written answer booklet that participants complete, focused on the students' experiences of the pre-induction socialisation Moodle course as well as their first year experiences more generally. The data is currently being analysed using Thematic Analysis. The results of this data analysis will inform future iterations of the Pre-induction Socialisation Moodle course.

Keywords: socialisation, Moodle, retention, qualitative.

Facilitating Pre-induction Socialisation

This on-going project has a number of goals: to create a student-focused socialisation process; to create a positive impression of Oscail – DCU Online Education; to reduce the anxiety of new students; to facilitate socialisation; to inform students of their rights and responsibilities; introduce students to the academic and organisational skills needed to succeed in third level education; and, most importantly, to support the student in their transition to higher education. Added to these was the goal to facilitate socialisation at as early a point as possible, i.e. a number of months before these students would begin their programmes of study. These goals became the focus of the project because the existing research and literature indicates that this focus will facilitate successful

socialisation in, and identification with, the new context into which the students are entering, and specifically from an educational perspective, that retention and student success can be improved.

A Moodle course was created to which applicants who had indicated serious intent to become undergraduate distance education students were directed through an email invitation containing a description of the course, its purpose and instructions as to how to log in. The elements making up the Moodle course (see table 1) were designed to facilitate an initial, positive socialisation into the online distance education context, which could then be reinforced by the start-of-year induction processes. In year one thirty-five applicants logged into the course, exploring its contents and interacting with each other and/or a distance education tutor in discussion forums. In year two thirty-five applicants logged into the course.

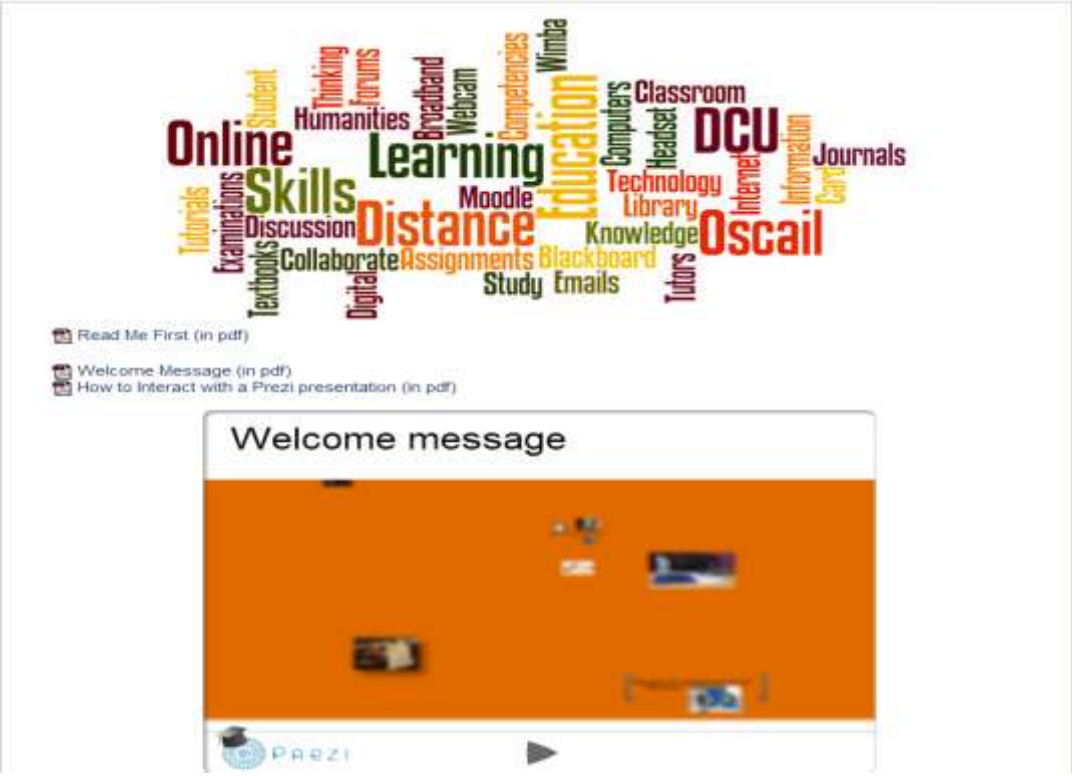

Figure 1 Screen Grab of Welcome Area - Part 1

Table 1 Facilitating Pre-induction Socialisation

Activity	Rationale	Supporting theory
Welcome message & 'What to think about' Guide	• Break the ice • Link the present to a desired, positive future and prescribe norms for their future student-identity • Reduce fears and anxiety caused by entry shock	Education • Tinto (1987) • Yorke (2004) Social/Organisational Psychology & Identity Studies • Louis (1980), Van Maanen and Schein, 1979, Wanous, 1992 – reducing entry shock • Cioffi and Garner (1996) – making an active commitment • Orbach, Mikulincer, Stein and Cohen, 1998, Baumeister, 1990 – facilitate the creation of a coherent future identity
Moodle Discussion Forums, facilitated by a distance education tutor	• Encourage socialisation between learners • Encourage socialisation between learners and programme team staff	Education • Tinto (1987) Social/Organisational Psychology & Identity Studies • Kim et al, 2005 – building relationships between new entrants and more senior context members • Bauer and Green, 1998 – general socialising • Saks and Ashforth, 1997 – management of roles during socialisation
Introduction to Study skills	• Provide learners with a positive set of expectations that the organisation has for them • Make learners aware that there are tools they need to have in order to succeed in their education goals • Begin to facilitate the learners in their development of those tools	Education • Cook & Rushton (2009) • Yorke (2004) • Cueso Social/Organisational Psychology & Identity Studies • Paulsen and Feldman, 2007, Schunk and Zimmerman, 1997 – sophisticated beliefs about knowledge and learning
Examples of Course Content and Assessment	• Provide learners with a positive set of expectations that the organisation has for them • Reduce fear and anxiety	Education • Yorke (2004) Social/Organisational Psychology & Identity Studies • Paulsen and Feldman, 2007, Schunk and Zimmerman, 1997 – sophisticated beliefs about knowledge and learning • Louis (1980), Van Maanen and Schein, 1979, Wanous, 1992 – reducing entry shock

Distance Education and Technology

Universities with a commitment to online distance education tend, of necessity, to be at the forefront of adopting new technologies to improve the teaching and learning experience of their students (Cakir and Basak, 2004). Technology can provide online distance education students with enhanced education delivery together with an opportunity for students to construct knowledge socially, an opportunity often missing in traditional distance education. There is a positive link between participating in online environments and academic achievement (Hrastinski, 2009). Additionally, technology provides opportunities for social interaction and knowledge construction both found to contribute positively to higher order learning (Vygotsky, 1975) and successful completion (Rosenberg 2001, Salmon 2000).

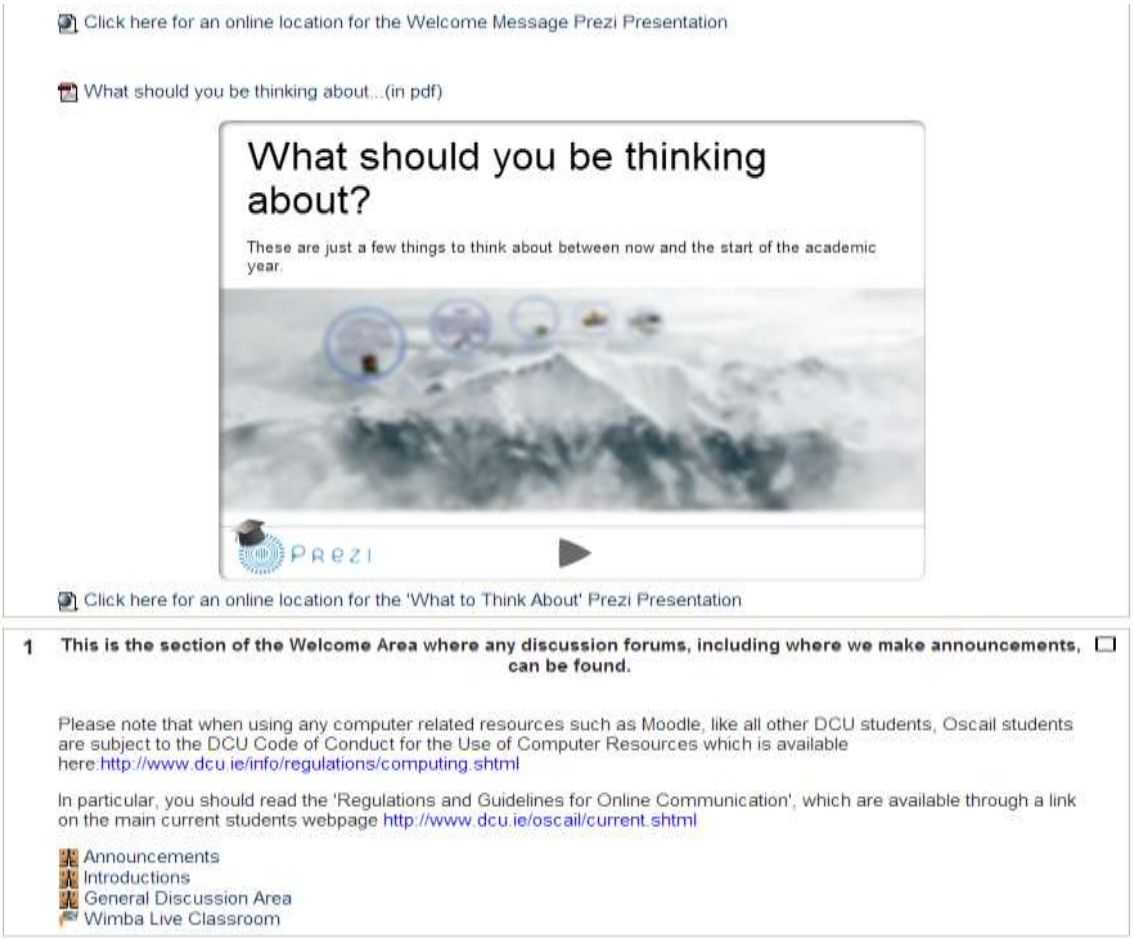

Figure 2 Screen Grab of Welcome Area - Part 2

Socialisation: Organisational Psychology and Identity-Studies

Through the process of socialising an individual into a specific context the individual may acquire the attitudes, behaviour and knowledge needed to participate as a functioning member of that context (Bauer, Morison and Callister, 1998; Van Maanen and Schein, 1979). As an individual creates a new identity, for example a new student identity, they are susceptible to influence due to the uncertainty regarding what the new context may require of them (Ashforth and Saks, 1996). Entrants, who

progress beyond initial difficulties, without deciding to leave that context, may then learn the ropes and develop a more stable identity. In this way they move from being a peripheral participant to being a central participant, as they increase their level of identification with, and the amount of influence they have within, that context (Campbell-Clark, 2000; Lave and Wegner, 1991). The context into which the individual is entering can facilitate stable identity-creation by engaging in effective socialisation strategies (Bauer, Morrison and Callister, 1998; Cote and Levine, 2002).

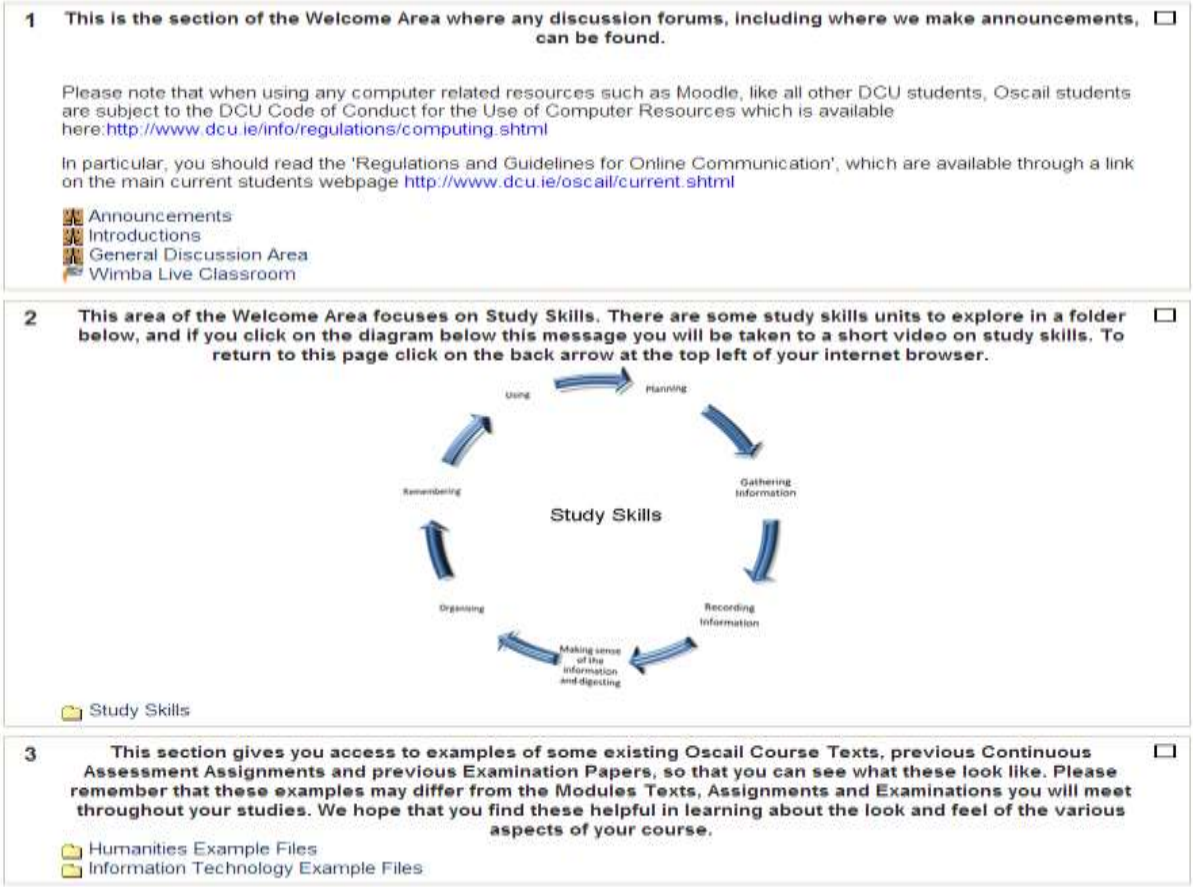

Figure 3 Screen Grab of Welcome Area - Part 3

Retention, Progression and the First Year Experience

As first year is the critical time for student attrition, educationalists such as Tinto and Yorke take the view that "institutions are likely to maximise their students' chances of success if they pay particular attention to the first year experience" (Yorke & Longden, 2004, p. 136). Yorke's guidelines for promoting student success address the multi-faceted causes of student attrition by considering what institutions can do, what students can do and what the higher education system can do. Key components are information and advice pre-entry, adopting a welcoming approach, having an effective induction, socialization, supportive environment for learning including assessment and programme structures, clear expectations, value teaching, support academic transition to HE, encourage and develop learner autonomy. Yorke's guidelines deal with academic and social readiness as well as the institutional response to first years (Yorke & Longden, 2004). The University of Ulster's Student Transition And Retention (STAR) project, coordinated by Tony Cook and Brian

Rushton, and its associated *The Guidelines for the Management of Student Transition* document provide useful guidelines when revising induction, transition or socialisation processes. The basic STAR guidelines for induction are:

- Induction activities should familiarise students with the local area, the campus and its support services
- Induction activities should highlight students' academic obligations and the obligations of the staff to the students
- Induction activities should support the development of those independent study habits suitable for higher education.
- Induction events should provide the foundations for social interactions between students and the development of communities of practice
- Induction activities should promote the development of good communication between staff and students (STAR, 2005)

Literature Cited

Ashforth, B. E., and A. M. Saks. (1996). Socialization tactics: Longitudinal effects on newcomer adjustment. Academy of Management Journal, Vol. 39, 1, pp. 149-178

Bauer, T. N. and S. G. Green. (1994). Testing the combined effects of newcomer information seeking and manager behaviour on socialization. Journal of Applied Psychology, Vol. 83, 11, pp. 72-83

Bauer, T. N., E. W. Morrison, & R. R. Callister. (1998). Organizational Socialization: A Review and Directions for Future Research. Research in Personnel and Human Resource Management, Vol. 16, pp. 149-214

Baumeister, R. F. (1990). Suicide as escape from the self. Psychological Review, Vol. 97, 1, pp. 90-113

Campbell-Clark, S. (2000). Work/family border theory: A new theory of work/family balance. Human Relations, Vol. 53, 6, pp. 747-770

Cakir, S. and Basak, H.H. (2004) Creating a Virtual Classroom for Interactive Synchronous Web Education for Dokuz Eylul University. European Journal of Open, Distance and E-Learning

Cioffi, D., & Garner, R. (1996). On doing the decisions: effects of active versus passive commitment and self-perception. Personality and Social Psychology Bulletin, Vol. 22, pp. 133-44

Cook, A., & Rushton, B. (2009). How to Recruit and Retain Higher Education Students. London: Routledge

Cote, J. E. and C. G. Levine. (2002). Identity formation, agency and culture: A social psychological synthesis. Mahwah, NJ: Lawrence Erlbaum

Cuseo, J. (N.D). Academic-Support Strategies for Promoting Student Retention & Achievement During The First-Year of College. Retrieved August 9, 2011, from STAR: http://www.ulster.ac.uk/star/resources/acdemic_support_strat_first_years.pdf

Hrastinski, S. (2009). A theory of online learning as online participation. Computers & Education 52, 78–82

Lave, J., and E. Wegner. (1991). Situated learning: Legitimate peripheral participation. Cambridge: Cambridge University Press.

Louis, M. R. (1980). Surprise and Sensemaking: What Newcomers Experience Entering Unfamiliar Organizational Settings. Administrative Science Quarterly, 25: 226-251

Orbach, I., M. Mikulincer, D. Stein and O. Cohen. (1998). Self-representation of suicidal adolescents. Journal of Abnormal Psychology, Vol. 107, 3, pp. 435-439

Paulsen, M. B. and K. A. Feldman. (2007). The conditional and interaction effects of epistemological beliefs on the self-regulated learning of college students: Cognitive and behavioural strategies. Research in Higher Education, Vol. 48, 3, pp. 353-401

Rosenberg, M.J. (2001) E-learning: Strategies for Delivering Knowledge in the Digital Age. London: McGraw-Hill

Saks, A. M., and B. E. Ashforth, (1997). Organizational socialization: making sense of the past and present as a prologue for the future. Journal of Vocational Behaviour, Vol. 51, pp. 234-279

Salmon, G. (2000) E-moderating, The Key to Teaching and Learning Online. London: Kogan Page

Schunk, D. H. and B. J. Zimmerman. (1997). Social origins of self-regulatory competence. Educational Psychologist, Vol. 32, pp. 195–208

STAR. (2005). Guidelines for the management of student transition. Retrieved August 9, 2011, from http://www.ulster.ac.uk/star/induction/induction.htm

Tinto, V. (1987) Leaving College: Rethinking the Causes and Cures of Student Attrition. Chicago: University of Chicago Press.

Tinto, V. (N.D.). Taking Student Retention Seriously: Rethinking the First Year of College. Retrieved from http://faculty.soe.syr.edu/vtinto/Files/Taking%20Student%20Retention%20Seriously.pdf

Van Maanen, J. and E. H. Schein. (1979). Toward of Theory of Organizational Socialization. Research in Organizational Behaviour, Vol. 1, pp. 209-264

Vygotsky, L.S. (1975 ed.) Mind in Society: the Development of Higher Psychological Processes. Ed. M. Cole, V. John-Steiner, S. Scribner and E. Souberman Cambridge Mass: Harvard University Press.

Wanous, J. P. (1992). Organisational entry: Recruitment, selection and socialisation of newcomers. Reading, MA: Addison-Weasley

Yorke, M., & Longden, B. (2004). Retention and Student Success in Higher Education. London: Society for Research into Higher Education & OUP.

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DOIT (Dermatology Online with Interactive Technology) for blended undergraduate training in Europe

Abstract

Introduction and Aim of the Study

Dermato-Venereology (DV) is fundamentally important to the practice of medicine and it is especially suited for multi-media based distant learning tools within a blended learning concept.

Method

DOIT (Dermatology Online with Interactive Technology" (www.cyberderm.net) is an interactive, systematic and case-oriented, multilingual (German, English, French, Spanish, Portuguese, Italian), gender-sensitive online-program for the education of undergraduate students in dermatology. The European Dermatology Forum, which is composed of representatives from more than 30 countries, has initiated a project for harmonised undergraduate blended training in Europe and has included DOIT as the electronic part.

Result

DOIT has been developed over the past 12 years in a multilateral cooperative effort and is very well accepted. The program follows an individual, physiologic 5-step learning process of orientation➔ learning➔ training, ➔testing with feedback and ➔repetition. It is globally accessible without charge. There are about 300 visits per day from almost 20,000 registered users from more than 50 institutions from more than 30 countries; each visit lasts an average of almost 1 hour.

Discussion

E-learning programs are an ideal supplement in a blended learning concept. However in order to reach a high level of acceptance by the students within a multinational context, they have to be professionally designed, interactive and flexible. Universities which are ready to invest the financial and personal resources in elaborating high quality e-learning platforms will be rewarded by long term benefit for their institutions and their students.

Keywords: medicine, Dermatology, undergraduate training, blended learning

This is a plea for an e-learning platform for undergraduate training in Dermatology as a basic constituent in a harmonized European "blended learning" concept.

Introduction

Teaching and learning in medicine

In the middle ages, there was only a limited amount of knowledge in medicine. The numbers of teachers compared with the numbers of students was well balanced and what students had learned by the end of their student time was usually enough to last them for their whole professional life. The learning requirements for medical students today have changed completely. Knowledge in medicine changes so fast that the contents learned at the end of the study time have to be constantly updated in order to offer best healthcare to the patient.

The principal solution from our academic institutions faced with these new challenges has been to increase the number of undergraduate teaching hours for reading books and listening to didactic lectures. But this approach is far from ideal. Books are getting thicker and thicker with more and more detailed knowledge in a constantly increasing number of subspecialties. There often is a lack of clear-cut learning objectives. The net result is a confused student, unsure what needs to be learned and what might be optional or unnecessary. There is typically limited flexibility, and just plenty of frustration and an almost chaotic heterogeneity of learning and teaching contents when comparing various institutions throughout Europe (or even within an individual country). In general, at present, too many medical undergraduate students are confronted with unnecessary knowledge in the form of an excess of front lectures and a lack of guided self-responsible learning "on demand"

It is no longer the content alone but the process of dynamic lifelong learning which is getting more and more important and which has to be conveyed to the student early in time.

Dermato-Venereology in the general medical office

About 20-25% of patients having consultations in general medical offices present with skin problems. This percentage is even higher in in less-developed countries. Even though most dermatological patients usually do not die of their skin disease(s), the nature and burden of their disease very often is chronic, which can lead to considerable morbidity, long-lasting unemployment and other personal and social upset that can have significant psychological consequences. Thus, it is of major importance that undergraduate students whatever speciality they will choose in the future are properly trained in the diagnosis and treatment of dermatoses.

The European Dermatology Forum (EDF)

The European Dermatology Forum (EDF), founded in 1997, is the representative association of the teaching professors in academia and opinion leaders and teachers within Dermatology-Venereology from the universities and medical schools from more than 30 countries. Since knowledge in Medicine is a global issue and should not be constrained by geographic, national or political boarders, one of the specific aims of the EDF is to improve and to harmonize undergraduate teaching of Dermatology-Venereology in Europe.

A survey conducted by the EDF in 2009 through two pan-European questionnaires sent to about 200

representatives from 29 countries aimed to reveal the structure of the undergraduate curricula for Dermatology-Venereology in Europe. The results showed great differences between the Universities. Teaching hours for lectures varied between 3 hours (Ireland) and 120 hours (Portugal) with many universities varying between 18-60 hours.

Overall, within the around 5,500 teaching hours that it typically takes to complete a 5-6 year undergraduate training in medicine in Europe, it is clear that Dermatology-Venereology lacks uniformity and harmony in both, its training structure and its contents, and that this is to the detriment of students, teachers and patients, as well as the population in general. *These findings underscore the fundamental need for a clear harmonised framework for medical undergraduate training in Dermatology-Venereology.*

Implementation of an E-Learning Platform as a Main Column in a Harmonized Blended Undergraduate Training Concept

A solution to these educational problems will be provided by the incorporation of electronic teaching and learning tools at our universities and medical schools according to a “blended learning “concept. This does not advocate giving up classical learning and teaching tools such as printed media, lectures, courses or bedside teaching, but reducing some of these tools and giving more time for self-dependent learning “on demand” with students taking personal responsibility for this.

Apart from a few discrete vagaries in treatment protocols or diagnostic methods, the teaching contents in Dermatology-Venereology has to be identical across all countries and independent from any national or political considerations. The most important issue for undergraduate students is for them to know exactly what they have to learn in order to pass their examination(s) and to gain basic knowledge as physicians. They do not want to be bored by dispensable, needless and superfluous information.

The role of the teacher should move towards support for the learner and not the delivery of knowledge. In the future, teachers will spend more time on instructional design of e-learning programs, which open the ways of national and international networking between faculties and medical disciplines.

The Decline of the E-Learning Hype

A few years ago, there has been an e-learning hype and each medical school has tried to bring as much contents as possible on an electronic platform, regardless quality of contents and or presentation. Unfortunately these efforts in most of the cases did not fulfil standard requirements for a successful e-learning program but were rather polluting the e-learning backstage. Moreover essential requirements on the side of the medical schools are neglected, i.e. a strong commitment of the teachers for accepting and promoting e-learning as a new supplementary teaching tool, incentives for an academically rewarding teaching-career and curricular integration of e-learning in a blended learning concept.

Only if suitably prepared, e-learning programs will lead to more effective and faster teaching and learning. E-learning programs have to be designed by a team of experts of dermatology, didactics and computer skills and these programs need continuous and persistent care.

Basic requirements for a good e-learning platform are:

- Flexibility (changing form and contents)
- Scalability (additional contents)
- Technical adjustability
- Global accessability
- Multilingual
- User-(Students) oriented
- Interactivity with feedbacks
- Entertaining (fun-factor, FF)
- In accordance with a Catalogue of Learning Objectives (CLO)

These requirements go far beyond the possibilities of classical print media or their modern equivalents, which are PDF's and Powerpoint (PPT)-slides. Unfortunately many teaching and learning platforms are an accumulation of PDF's and PPT's, which completely overstrain the students, are outdated, unreadable and boring. One therefore must not be surprised, that the initial e-learning hype and excitement among teachers and among students has declined.

One reason for this situation is, that generating a new platform for one of the more than 50 medical disciplines does not only need a Learning Management System (LMS), but committed and skilled professionals, who generate didactic high quality contents. The most qualified with respect to didactic and professional expertise and to timely disposability are the Emeriti, who however not always are committed to be involved in such an ambitious endeavour of generating the contents for a good e-learning platform and also may not have the appropriate technical skills.

The E-Learning-"Market" for Dermatology-Venereology

LRSMed (the Learning Resource Server in Medicine; http://www.lrsmed.de/) lists more than 60 programs with dermatological contents. Unfortunately many of them are miserable in contents, in terms of functionalities and in their didactic design. Some suffer from the drawback that they are driven by pharmaceutical companies and cover only a narrow spectrum of diseases for promoting commercial products. Others are not globally accessible but can be used exclusively by the students of the respective university. There also are huge collections of information and data banks (http://dermis.multimedica.de/dermisroot/en/home/index.htm) , which are helpful resources for information and for looking at clinical or histological (https://atlases.muni.cz/) pictures but do not

present structured systematic or case based teaching and learning contents for undergraduates.

DOLF'ing: Dermatology Online Learning with Fun

In order to reach its goal towards harmonization of undergraduate training in Dermatology in Europe by offering a widely accepted and successful-learning platform, the European Dermatology Forum choose "Dermatology Online with Interactive Technology (DOIT; www.cyberderm.net) as their common e-learning platform.

DOIT is an interactive, systematic, case-oriented multilingual (English, German, French, Spanish, Portuguese) electronic learning program. It has been developed over the past 12 years in a multilateral cooperative effort, supported by the Swiss Government (Swiss Virtual Campus) and Swiss Universities.

DOIT is designed to supplement classic instruction in dermatology in the clinical years of medical school. The program follows an individual, physiologic 5-step learning process of orientation ➔ learning ➔ training, ➔ testing with feedback and ➔ repetition. It consists of the following interactive moduls:

For **Orientation:** *Cyberskin:* Topographical, pictorial table of contents, overview of the diseases and basic introduction to the structures of the skin

For **Learning:** *Cyberlecture:* Supplement to the plenary lecture, following the Swiss Catalogue of Learning Objectives. Additional audio-video-clips explain important diagnostic or therapeutic procedures

For **Training:** *Cybertrainer:* Interactive module about exploration, diagnostic and therapeutic procedures

For **Testing**: *Cybergames:* Save Your Skin: intelligent, interactive game for the assessment of knowledge for one or two players **.** DermaPuzzle: interactive game on diagnoses and differential diagnoses

For **Repetition:** *DermaPod:* Compact podcasts summarizing the content of one-hour lectures in 3-5 minutes

Furthermore there are several other helpful features such as an image gallery, lecture documents (providing your University has supplied us accordingly), a search-function, a contact button for comments or questions and a print button.

The **Mobile-Version of DOIT** gives access to most contents for Tablet-PC's and Smartphones (Mac and Android).

Target Groups for the DOIT-Platform

DOIT is very well accepted and used by students worldwide. There are about 300 visits per day from almost 20,000 registered users coming from more than 120 institutions in more than 40 countries; according to an independent survey performed in 2009, each visit lasts an average of almost 1 hour.

Students benefit from clear-cut curricula with defined contents to be learned for passing the examination. The online e-learning program gives additional freedom in terms of time and location and the harmonized contents overcome difficulties when switching from one university to another.

Teachers and their academic Institutions benefit from harmonising guidelines for teaching. DOIT is a didactically optimised and permanently peer review and updated tool, which can be supplemented with additional documents from lectures of the individual teachers. A structured curriculum following a harmonised teaching plan gives additional time for research, which in most of the cases belongs to the imminent and favoured elements of the activities of young career-oriented academicians.

Patients benefit from being less involved in lectures in front of big auditoria. Instead they more easily agree in being depicted in the virtual setting of a distant e-learning program.

Finally

Nevertheless, e-learning programs can neither completely substitute a good textbook nor a good lecture. Since it is much easier to put a simple collection of pictures or lecture slides on the web than to create an interactive program, providing profound theoretical and clinical knowledge in an interesting way, providers are easily seduced to neglect the theory part, overemphasising the visual aspect of dermatology

The harmonised blended learning concept using a common constantly peer reviewed e-learning program as a unifying platform is a strong multilateral link between European universities and their students, who benefit from both: clear-cut guidance on what to learn through standardised catalogue of learning objectives as well freedom and self-responsibility in their learning habits by learning "on demand". It further fosters the mobility of students within Europe because the credits will be mutually recognized at the different universities involved in the project.

In Least Developed Countries, which mostly have a great need in dermatologic healthcare especially in their rural areas, there is an urgent demand for distant learning tools.

Key Points

1. The use of Informatic and Computer Technology (ICT) for teaching and learning (e-learning **"on demand")** offers new chances to meet the challenges of increasing medical information and specialization on one side and an increased number of students on the other side.
2. E-learning must be combined with classical learning and teaching tools ("**blended**" learning) and must be integrated into the curriculum of medical training.
3. Dermatology Online with Interactive Technology (**DOIT**, www.cyberderm.net) serves as a basis for harmonized teaching and learning in a multinational network throughout Europe and beyond.
4. E-learning platforms have to fulfil certain quality standards, making use of the specific features of electronic media (interactivity, flexibility, scalability, accessibility) not given in traditional media for knowledge transfer.
5. Designing and generating a high quality e-learning program, accepted by the targeted user

(student), needs tremendous financial and organisational resources and committed experts (preferentially emeriti), in order to maintain sustainability.

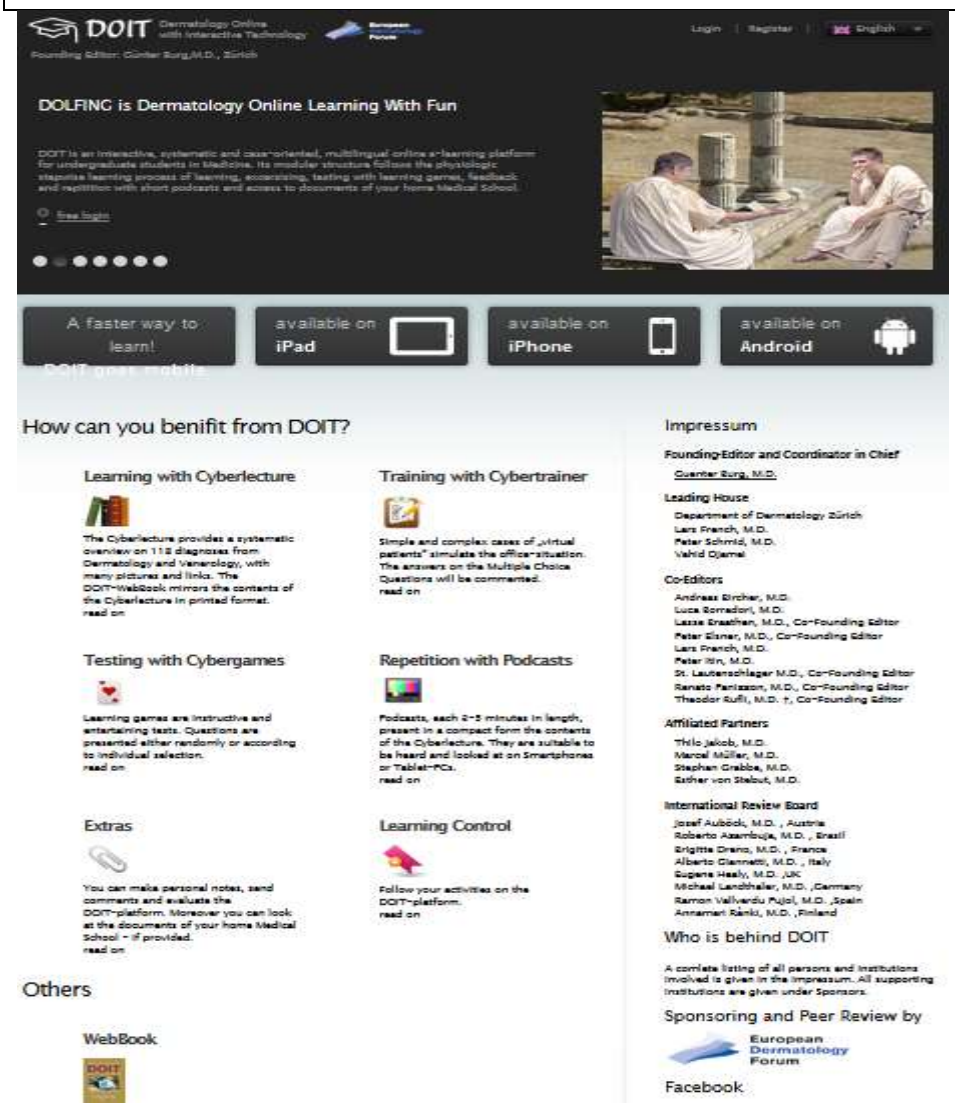

Fig.: Login-page for "Dermatology Online with Interactive Technology (DOIT; www.cyberderm.net)"

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Transforming traditional university teachers to open and distance learning adult tutors: a Greek endeavor

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Abstract

This paper describes a theory-based development programme aimed at introducing traditional university teachers to tutoring methods of open and distance learning implemented in university courses addressed to adults and provides preliminary evidence as to its effectiveness in promoting change in thinking about difference between traditional teaching and modern tutoring.
The programme development was based on Ramsden's (1992) theory of teacher growth and Mezirow's (1991) transformative theory in adult education and was offered as a two-weekends workshop (40 hours) plus two homework tasks to newly employed faculty members of the Hellenic Open University.
Evidence concerning participants' views on teaching in a university as well as their knowledge of, and opinions about, tutoring principles and techniques collected from 22 participants in the first implementation of the programme by a properly designed pre- post- questionnaire and semi-structured interviews.
Results indicate the participants in the programme changed their focus from viewing university teaching as transmitting knowledge to a more integrated and complex conception of teaching founded on a tutoring perspective.

Keywords: distance learning, adult education tutors, university faculty development.

Introduction: Tutors in open and distance adult education

Any effort aiming to develop an open and distance learning (ODL) system of education for adults inevitably raises questions about the roles required by tutors, about the competencies which underpin these roles, and about the appropriate professional development opportunities offered to tutors. As has been stressed by many researchers, the contribution of tutors to the quality of both online and distance learning education intended to adults is heavily depended on the personal link they establish between students and institution via a range of interactions offering guidance, assessment, support, and motivation (e.g., Berge, 1995; Lentell, 2003; McPherson and Nunes, 2004; Palloff and Pratt, 1999; Tait, 2004).
In Greece, distance learning university programmes have been introduced and implemented by The Hellenic Open University (HOU) since 1998. However, in the face of the apparent importance of the tutor's role in determining the quality of ODL programmes for adults, we appreciate that very few efforts have been made to raise awareness of tutors in the importance of supporting students at a

distance and it seems that this is the less visible element of their duties. This fact is accentuated, as the development of distance courses is separated from the delivery of learning opportunities and on the other hand, the tutors are employed on part-time, temporary contracts which may have long-term effects on their professional status and on their tutoring practices. This aspect of the ODL programmes has been highlighted, for instance in the case of the Open University of the UK by Tait (2004).

Apart from these conditions it should be emphasized that tutors who work in ODL programmes for adults differ considerably from their classroom counterparts in terms of the roles they assume, the ways in which they interact with students, and the attributes and expertise required of them. All these dimensions are continuously changing in response to shifts in technology, and the development of learning environments.

In this context an intensive programme for informing and raising awareness of tutors employed by The Hellenic Open University or the Advisory Educational Staff (AES), as they are called, has been designed, developed and implemented for the first time at the beginning of the current academic year, the main aspects of which are shortly presented in this paper. The main premise of this programme is that the academic specialism and the professional experience of an AES must be complemented by a personal commitment to the education of adults, and an appreciation of the challenges that face adult learners who are studying at a distance.

Theoretical background

Assuming that raising the awareness of tutors on the particularities and demands placed on them by teaching adults in ODL environments presupposes a changing of their individual thoughts and actions, then two theoretical perspectives were found as useful in informing the design and implementation our programme.

The first perspective pertains to the processes of changing individuals' thoughts and actions as conceptualized by Mezirow's Theory of Transformative Learning (Mezirow, 1991). Mezirow describes a particular type of adults' learning as a process of modifying assumptions and expectations in themselves, thereby called "transformative learning" (Mezirow 1978, 1991, 2000). These assumptions and expectations of adults form 'frames of references' or 'meaning perspectives' through which individuals filter their incoming sense impressions of the world. A meaning perspective '*selectively shapes and delimits perception, cognition, feelings and disposition by predisposing our intentions, expectations, and purposes. It provides the context for making meaning within which we choose what and how a sensory experience is to be construed and/or appropriated*' (Mezirow, 2000, p. 16). According to Mezirow, a transformation in a meaning perspective means that a person views his/her world in a different way and this includes viewing also himself/herself in a different way. This different meaning perspective is assumed to be more permeable to different ideas, flexible, holistic, reflective and autonomous than the previous one hold.

Mezirow describes two types of adult meaning making structures called 'meaning schemas' and 'meaning perspectives'. (Mezirow, 1990). A meaning schema is a belief or an idea that a person holds about how to do something, how to understand something, someone or a group of persons or how to understand oneself. A meaning perspective is a more fundamental belief than a meaning schema and is the '*structure of assumptions within which one's past experience assimilates and transforms new experience'* (Mezirow, 1991, p. 42). Therefore, transformation of a meaning perspective changes the way an individual sees himself or herself and it changes the way that he/she continues to learn and construes new meanings about the world (Mezirow, 1991).

In Mezirow's theory, transformations in meaning perspectives occur either in an 'instrumental domain' or in a 'communicative domain'. An instrumental domain involves an understanding of "how things work" which is created deductively through experimenting with the environment to become more effective in controlling it in a given problem arena, in our case how to manipulate adult learning and training. A communicative domain involves aspects of relationships between people, for

example how people communicate together or how present themselves. More generally, a communicative domain includes "*understanding, describing and explaining intentions; values; ideals; moral issues; political, philosophical, psychological, or educational concepts; feelings and reasoning*" (Mezirow, 1991, p. 75). Meaning in a communicative domain is created through abductive reasoning, which Mezirow describes as the process of using our own experience to understand another's, and where each step in the logic chain suggests the next step (Mezirow, 1991).

The second theoretical perspective which informed the design and implementation of our programme is Ramsden's theory of teaching in higher education institutions (Ramsden 1983, 1988a, 1988b). Ramsden conceptualizes teaching and learning as two distinct but inseparable processes and emphasizes "*good teaching and good learning are linked through the students' experiences of what we do. It follows that we cannot teach better unless we are able to see what we are doing from their point of view*" (Ramsden, 1992, p. 86). In other words, teaching means cooperatively working with learners to achieve understanding.
Such an integrated process of teaching and learning is shaped by the context in which teaching takes place and the value of feedback. The context operates as a filter between thinking and teaching and is described by Ramsden (1992). as an instructor's perception of variables, such as disciplinary norms, organizational patterns, and institutional variables. On this ground, Ramsden (1992) argues that any activity aiming at improving teaching has to engage tutors in appropriate ways that develop their understanding of teaching. And in order to make learning about teaching meaningful to tutors their experiences have to be placed in the context of their specific subject area and then to persuade them to reflect and discuss on what they do and why they do it. According to such a view, skills-based teaching staff development activities, such as for example training in discussion techniques, without contextualizing them within the tutors' current understanding of teaching and within their subject matter are bound to fail in improving their teaching competency.

Description of the Programme

In this paper, we describe a university teaching staff development programme aimed at introducing traditional university lecturers to tutoring methods of distance learning as implemented in university courses addressed to adults. The programme has been developed on the basis of the above-described theories and it focuses on the process underlying tutors' thoughts and actions, assuming that any changes in the individual teaching beliefs and practices of a tutor are accomplished through an introspective process which is mediated by questioning personal assumptions. The last mentioned aspect makes this programme differing from other faculty development activities which are primarily centering on improving tutors' specific teaching skills and techniques in a prescriptive format. In such a process of change the collaborative dialogue plays an important role because *"dialogue creates an environment to explicitly identify, state, and explore unexamined assumptions in a non-judgmental, non-threatening manner while allowing participants to also share techniques and ideas in a communal setting"*(Qualters, 2009, p. 7). For this reason, collaborative dialogue on particular issues of distance learning of adults constitutes an essential feature of the programme.
At the same, the programme promotes an approach on tutoring epitomized in two principles: tutoring adult learners is a multifaceted cognitive activity and its successful accomplishment extends far beyond mastering a set of teaching skills and techniques and in addition to content knowledge, tutoring adults at the higher education level requires a well-developed set of metacognitive skills that enable individual tutors to reflect continuously on and adjust their tutoring practices.
The programme is offered as a 40-hour workshop in two weekends and is comprised by two components: adult distance learning course management by tutors and plan and implementation in a rationale of a micro-teaching activity of a students' group meeting. Meeting students at groups four or five times during the academic year is an indispensable duty of a tutor and an essential part of a course offered by the Hellenic Open University. In these meetings, tutors and students clarify many aspects of course contains, elucidate issues of studying and assessment requirements and discuss

problems that adult students face in studying and learning the educational material supporting the particular course of studies they follow.

In the first component, provide a context within which tutors examine their assumptions about adult learners and the most appropriate ways to support their learning in open and distance education environments as well as the learning they expect their students to achieve as a result of their tutoring. In the plan and implementation of a students' group meeting most of the conceptual reflections made in the adult distance learning course management component are put into practice. Thus, the components are purposefully designed so as to make the integration of conceptual and practical issues of adult distance learning challenges put on, and responses required by a tutor possible.

At the first part of the course that is implemented in two sessions during a weekend, the participants in small groups engage in an exchange of views and beliefs about foreseen differences between teaching in traditional university courses and tutoring adults in distance learning courses, about assumed good practices to be implemented and anticipated problems encountered in the later. After this conceptual exercise, the instructor of the workshop summarizes the identified features of tutoring adults in distance learning courses and the particular tutoring practices that are more likely to promote the desired learning both as they have emerged from the preceding dialogue.
Following, appropriate ways of planning and implementing a students' group meeting as well as of evaluating their learning and tutoring that are consistent with the desired student learning are put on discussion. The first issue is discussed after an exercise requiring by each participant to plan the first meeting with his/her group of students emphasizing the dynamic rather than the linear characteristic of such a plan and the second issue on the basis of a task asking each participant to comment and evaluate an essay supposedly submitted by a student as part of his/her assessment during the course.
The second part of the programme is also implemented in two sessions during a weekend which follows by two weeks the first part. In the interim the participants plan, as a homework, a meeting with his/her group of students in the context of their own discipline, which they implement in the rationale of a micro-teaching activity to their peers during the sessions of the second part of the programme. This phase of micro-tutoring activities is followed by a plenary discussion on practices that the participants have specified (for their peer-students) at their planning of the meeting and their implementation problems encountered during their micro-tutoring session, soliciting self and peer-critique. One of the strengths of this format of planning and implementing a students' meeting is that participants are forced to assume both the role of tutor and student and in doing so they appreciate some of the crucial issues of adult tutoring and learning in various disciplines. More importantly, they get a feeling for how actual adult students might react to a tutoring situation such as the one they have experienced.

The effectiveness of the programme is assessed by means of satisfaction ratings and comments offered by participants responding to anonymous questionnaires before and immediately after their participation in the programme.

The programme reported was first offered by the Unit of Internal Evaluation of the Hellenic Open University to the newly hired tutors in autumn 2012 and is planned to be offered every academic year so as to be attended overtime by all tutors of the university. The programme is free of charge, the participation is voluntary and the tutors are not remunerated for attending it. They are, however, able to refer to it when they submit their application for employed by the Hellenic Open University.
This first course was tutored by the first author of this paper, while the second analyzed the data gathered during and after implementation of the programme.

An evaluation of the programme

A needs assessment questionnaire was administered to participants in our programme, which among other things, asked them to identify their lack of knowledge and skills for tutoring adults in distance learning courses as they predict at a first thought. Similarly, at the end of the workshop, as part of the programme evaluation and as a comparative record to assess potential changes, participants were asked to revisit, in essence, the same question writing a statement about the main benefit they consider that they had from attending the workshop. By the same token, participants were also asked to identify the main role that a tutor in adult distance learning is obliged to exercise.

Statements that were generated from the above questions were segmented, using a complete idea as the unit for a segment. The segments were then coded by the two authors working independently. There was 96% agreement on the coding among the two.

Data reported here were collected from the first offered workshop in autumn 2012 (N=22).

Figures 1, 2 and 3 show the frequency of segments coded as self-identified learning needs before the programme and as the main lesson which the participants gained from attending the workshop and the main role they assign to a tutor in adult distance learning courses after the programme.

The data related to the effectiveness of this programme that were collected before and after its first implementation does not justify statistical analyses because of the relatively small number of participants and the differences among them. However, a trend for change in the desirable direction of viewing tutoring adult learners in distance education environment as an integrated process is rather clear in the responses of the participants.

As can be seen in Figure 1, more than half of the participants (54.5%) identified as their main learning need the distance learning issues referring mostly to technical matters, while a considerable number of them (27.3%) point out the organizational matters of a distance education course, i.e. most of the participants put as their priority the learning of practical issues concerning particular type of studies.

However, at the end of the programme, the participants assessed as their main lesson learned from attending the programme that tutoring adults is quite different from instructing students in a university (36,4%), distance education is quite different from traditional university studies (41%), or that supporting the learning of adult students requires particular tutoring techniques, i.e. all of the participants in the workshop have raised their awareness about challenges and problems posed by tutoring adults in distance learning systems.

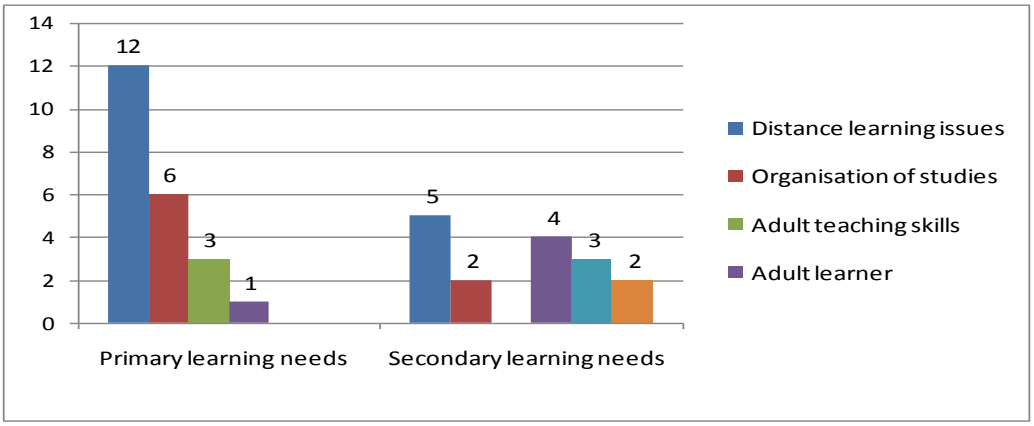

Fig. 1: Self-identified learning needs by the participants before the programme

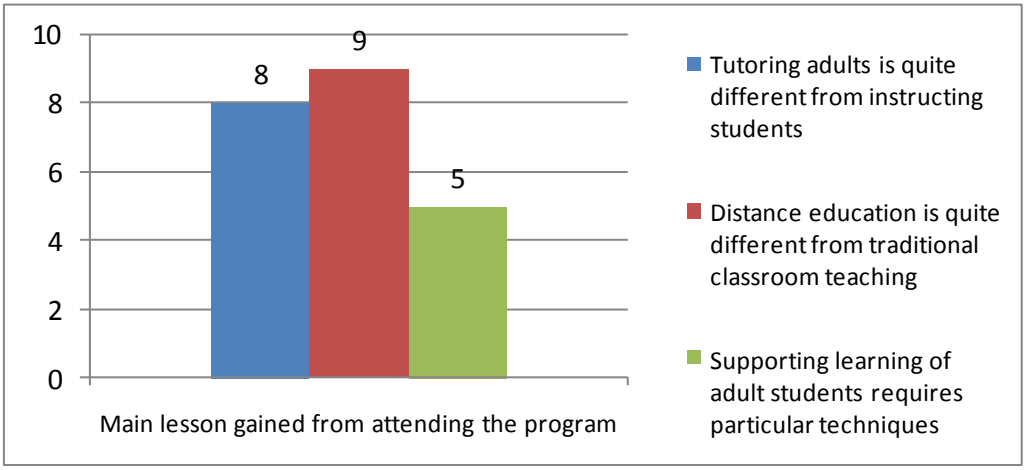

Fig. 2: Main benefits from attending the programme as assessed by participants.

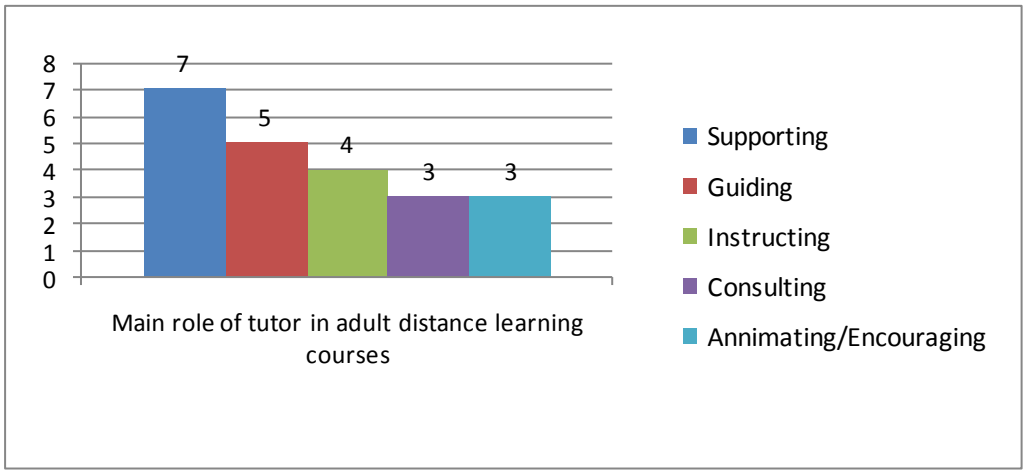

Fig. 3: Main role assigned to a tutor in adult distance learning courses by participants after the programme

To provide a draft picture for the ways in which participants expressed themselves assessing their involvement in the programme, we provide below some verbatim excerpts from the transcripts collected from relevant open questions of the questionnaires. These statements show an increased understanding of the particular features and the specific demands of a distance learning course addressed to adults and a more informed approach to the tutoring process incorporating a learner's perspective to the tutor' role.

Examples of comments from participants before the programme

I lack any knowledge about "electronic" cooperation with my students being at a distance.

I am afraid that I could manage all demands put on me by these information technologies so as to meet my duties as a university lecturer.

I do know almost nothing about norms and regulations in distance learning courses.

I think that it is a bit difficult to conceive any differences between adults following distance

education studies and my university students, aren't they also adults?

Examples of comments from participants after the programme

I feel that my teaching mentality has somehow undergone a change…. not being easily expressible at the moment.

I felt initially very insecure when thinking that I have to manage adult students in a group meeting, now I now feel more confident on this issue.

I cleared up many concerns and questions, conceptual and practical, about the job of tutoring adults in distance learning courses.

The most valuable aspect of these two workshops was the opportunities offered by its plan to the exchange of views and experiences between participants.

Concluding comments

It has been reported that as experienced university teachers participate in a faculty development programme to be prepared for distance learning tutoring, and as they actually get involved in distance tutoring, they feel themselves as beginners again (Diekelmann et al., 1998) because a lot of their familiar situations is changed. Their traditional teaching role is changed, there is a lack of physical presence of their students, everything that has to be said to their students must be written, they have to face different tutoring demands and to respond to diverse students' needs, and they are often obliged to utilize unfamiliar technologies. In these circumstances, they begin to reconsider their assumptions about teaching and learning (Diekelmann et al.1998; Jaffee, 2003).

However, changes in their teaching practices that are induced by the demands of a distance learning group of students, they do not automatically lead to "*reflection and identifying and naming the meaning of experiences after they had been lived*" (Conrad, 2004, p. 41), since their assumptions, beliefs, and expectations about teaching and learning delimit and may diminish their facility to change their customary and time-honored teaching practices (Sunal et al., 2001).

Insofar the university staff development programmes aim at the development of specific skills or at the dissemination of information on practicalities, then their assumptions, beliefs and practices will not be challenged. The acquired new skills and the received new information will be assimilated wherever it will fit into their meaning perspectives or, if it does not fit, it could be disregarded, and their current practices will be continued. It is the critical reflection on their current practices of teaching and on their holding conceptions of learning that may produce changes in their ways of thinking and acting. Critically reflective thinking is an integral component of the transformational learning theory, which has informed the plan and implementation of our venture reported above.

In any case, changes in teaching practices must be considered over time in relation to the increased experience (Diekelmann et al., 1998; King, 2004; Winguard, 2004). From this viewpoint, assessments of change based on data collected on a given time, as are these reported in this paper, are subject to interpretative limitations. There is clearly a need for a longitudinal study of tutors not only as they prepare to deal with but also as they experience over time their involvement in adult distance learning courses. If reflective practices are adopted and realized, their impact and effects over time would also inform future projects on university teaching staff development.

The purpose of this paper was to describe a theory-based development programme indented for tutors engaged in adult distance learning courses and to provide some preliminary evidence as to its

effectiveness in promoting awareness and changes in thinking about tutoring adults in distance learning schemes. Our findings from an evaluation of the first implementation of this programme indicates a positive impact on the participants' conceptions of, and views about tutoring adults in open and distance higher education courses. If we agree with the initial assumption of this project, that a change in thinking is a necessary precursor to raise the awareness of tutors on the particularities and the demands placed on them by teaching adults in distance learning environments then the approach we have reported here is well justified.

According to the evidence the participants in this programme, newly hired tutors of the Hellenic Open University, started with a technical view of tutoring adults in distance learning courses focusing on practicalities, a view which seems to be derived by a norm of lecturing in a traditional university which, more or less, tends to promote an approach to teaching as a transmission of knowledge and to the role of the student as a passive learner.
After their involvement in tasks and discussions which explored issues of adult learning in distance education courses as well as in the plan and implementation of a students' group meeting in a rationale of a micro-teaching session both being essential components of our programme, it seems that the participants have found these activities meaningful because their position as tutors provided them with an immediate and real context to apply what they learned in the workshop and realized through its activities. In addition, it seems that a supportive collegial environment created during these activities resulted in a milieu which powerfully supported reflection on, and change of participants' views and actions on the subject matter.

Describing a theory-based development programme of a university staff and reporting its rather positive impact, this paper seeks to open a discussion about the nature of development activities intended to university teaching staff involved in adult distance learning courses. The starting question of such a discussion may be, in our view, whether a development programme intended to university staff it offers to its participants opportunities to expand their understanding of teaching and learning process in various situations involving various actors.

References

Berge, Z. (1995). The role of the online instructor / facilitator. *Educational Technology 35*(1), 22 - 30.

Conrad, D. (2004). University instructors' reflections on their first online teaching experiences. *Journal of Asynchronous Learning Networks, 8*(2), 31-44.

Diekelmann, N., Schuster, R., & Nosek, C. (1998). Creating new pedagogies at the millennium: The common experiences of University of Wisconsin-Madison teachers using distance education technologies [Electronic version]. *Distance Education Systemwide Interactive Electronic Newsletter*, 5(7).

Jaffee, D. (2003). Virtual transformation: Web-based technology and pedagogical change. *Teaching Sociology, 31*(2), 227-236.

King, K. P. (2004). Both sides now: Examining transformative learning and professional development. *Innovative Higher Education, 29*(2), 155-174.

Lentell, H. (2003). The importance of the tutor in open and distance learning. In A. Tait and R. Mills (Eds.) *Rethinking learner-support in distance education* (pp. 64-76). London: Routledge Falmer.

McPherson, M., and Nunes, M. (2004). The role of tutors as a integral part of online learning support. *European Journal of Open and Distance Learning.* Retrieved May 30 2013 from: http://www.eurodl.org/materials/contrib/2004/Maggie_MsP.html

Mezirow, J. (2000). Learning to think like an adult. Core concepts of transformation theory. In

Mezirow, J. and Associates (2000) *Learning as transformation.Critical perspectives on a theory in progress (p. 3-34).* San Francisco: Jossey-Bass.

Mezirow, J. (1991), Transformative dimensions of adult learning. San Francisco: Jossey-Bass.

Mezirow, J. (1990). *Fostering Critical Reflection in Adulthood: A guide to Transformative and Emancipatory Learning.* San Francisco: Jossey-Bass.

Palloff, R. & Pratt, K. (1999). *Building Learning Communities in Cyberspace: Effective strategies for the online classroom.* San Francisco: Jossey-Bass.

Qualters, D.M. (2009). Creating a Pathway for Teacher Change. *Journal of Faculty Development,* 23 (1), 5-13.

Ramsden, P. (1992). Learning to teach in higher education. London: Routledge.

Ramsden, P. (1988a). Context and strategy: Situational differences in learning. In R. Schmeck (Ed.), *Learning strategies and learning styles* (pp. 159-184). New York: Plenum.

Ramsden, P. *(1988b).lmproving learning: New perspectives.* London: Kogan Page.

Ramsden, P. (1983). Institutional variations in British students' approaches to learning and experiences of teaching. *Journal of Higher Education,* 12, 691-705.

Sunal, D., Hodges, J., Sunal, C., Whitaker, K., Freeman, L. Edwards, L., et al. (2001). Teaching science in higher education: Faculty professional development and barriers to change. *School Science and Mathematics, 101*(5), 246-257.

Tait, J. (2004). The tutor/ facilitator role in student retention. *Open Learning 19*(1), 97 - 109.

Winguard, R. (2004). Classroom teaching changes in Web-enhanced courses: A multi-institutional study. *Educause Quarterly, 1*(2004), 26-35.

Cummins Anne

An Australian Response to 21st Century Learners

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Abstract

In 2008 Australian Catholic University (ACU) had a new Vice-Chancellor and 8,000 students. Today it has 22,000 students across six faculties. In 2009 Australia's Labor Government reviewed Higher Education provision and challenged the sector to provide access for young Australians from lower socioeconomic groups. The government set targets for this and for increasing the number of Australians with degree qualifications. This paper provides an account of ACU's response.

The paper gives a brief overview of the Australian Higher Education context from 2008 to 2013. It illustrates the interplay of government policy, institutional leadership and technological access and innovation in the pursuit of quality learning and teaching, and a positive student experience.

The paper identifies the key drivers of change, internally and externally and describes their impact on student and staff aspirations and behaviours. Approaches to strategic planning, change management and career and performance management are examined in terms of their relevance and efficacy in moving the University toward online and blended curricula. The tensions inherent in resource allocation are explored.

The Australian Catholic University experience is ongoing. ACU's story reflects the decision to understand and embrace the external environment and to seek to understand its students' learning needs. ACU adopted a whole of university framework with a strong emphasis on cross-unit collaboration to promote and support innovation. This has enabled the University to transition to a 21st Century pedagogy with an increasing blended online presence, and renewed staff and student approaches to learning, teaching and research.

Keywords: Australia, online learning, blended curriculum, learning and teaching

Full paper:

Australian Catholic University (ACU) is 23 years old and has approximately 25000 students across six campuses that span the east coast of Australia. ACU was formed through an amalgamation of teacher training colleges and schools of nursing run by religious congregations since the 1850s. In the late 1980s Colleges of Advanced Education had increased in number across Australia. They were vocationally focused higher education institutions. Australia also had about half the universities it now has. The Commonwealth Labor Government sought to rationalise the sector and requested

that they consider amalgamation as teaching institutes or universities. The Catholic CAEs amalgamated to form Australian Catholic University. This enabled the move to university status with a commitment to teaching and research and brought eligibility for public funding. At this time ACU made a commitment to grow its enrolment to at least 5000 students across its campuses. This was achieved in a few years and it settled at about 8000 students until 2008.

In 2008 Australian universities were funded on a supply driven model. The Commonwealth Government granted universities permission to offer places in specific courses with funding attached. Universities were sure of student enrolments because places were limited by government funding parameters.

In 2008 Professor Gregory Craven, the third Vice-Chancellor, was appointed. He set a strong growth strategy for ACU. Predicting that the incumbent Labor Government would push for higher participation in university education he sought unfunded student places.

The Labor Government (2007), through its Education Minister, Julia Gillard, set a reform agenda for the Higher Education sector. She initiated the Review of Australian Higher Education (Bradley Review).

This review recommended the following:

Targets

- National targets for attainment of degree qualifications and for participation of low socio-economic status students will be set and institution-specific targets for participation and performance established and monitored.
- Targets will be set to enable national benchmarking against other OECD countries to track system quality and performance.

Students

- All qualified students will receive an entitlement for a Commonwealth subsidised higher education place.
- Students will have a choice of where to study at recognised institutions.
- Funding will follow the student.
- Institutions will have freedom to enrol as many students as they wish.
- Funding for teaching will be increased.
- Funding for low socio-economic status students will be significantly increased.
- Funding for provision in regional and rural areas will be increased.
- Levels of student financial support will be increased and eligibility made fairer based on need.[11]

The decision to open university places to all qualified students changed not only the funding paradigm but also the higher education landscape. For the first time universities could admit more students to their courses, students could choose from a selection of universities and the traditional

[11] Bradley, D. et al., 2008.

academic rating system based on Year 12 school results was weakened as alternate entry pathways opened up. This movement to universal higher education provided a critical driver of change in Australian universities.

ACU predicted this change and commenced admitting unfunded students in 2009. These students became part of the demand driven system and were funded from 2010. ACU became the fastest growing university in Australia and its enrolment moved from 15000 to 25000 in six years. Several other Australian universities made similar changes to their profiles.

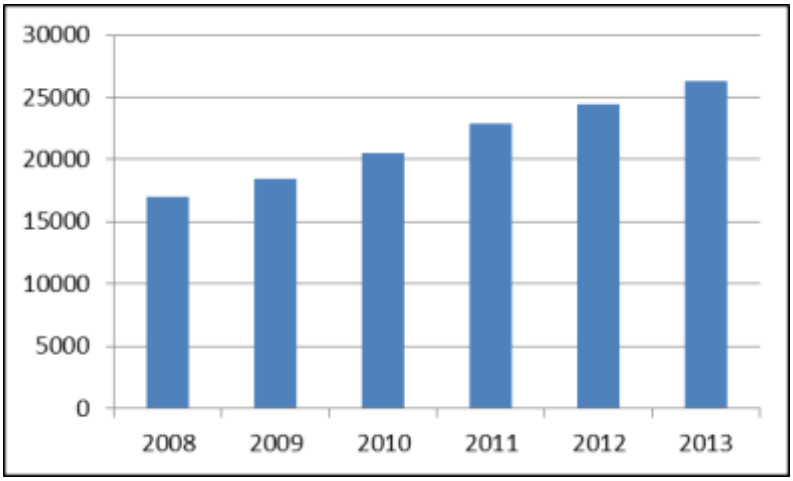

Figure 1: ACU Enrolment Changes 2008-2013

This growth had significant impacts upon the university. These included:

- a more diverse student body including some students less well prepared for tertiary study and some less committed to their studies
- an increase in income
- increases of new staff needing induction into the university
- increased demand on university business systems
- increased demand on teaching facilities and learning management systems designed for smaller enrolments
- rapid development of new courses
- broadening demands on student support services and engagement experiences
- heightened Government concerns about quality given growth
- students experiencing themselves as clients with choice, needs and demands
- students wanting a direct link between their degree and graduate employment.

These impacts give us our first of three impacts that are intersecting, each enabled by advanced technologies and together radically challenging the traditional paradigms and practices of Australian universities.

The first impact is a movement to universal higher education closely aligned to individual student interests and vocational accreditation.

Education has always provided individual benefits; these are sometimes measured in wealth, health and employability. They are also measured in cultural capability and enjoyment. Individuals seek education to improve their lives. Communities promote and fund education for the wellbeing of members and to ensure capabilities required by the society. Governments can promote or protect skills and professions by funding or restricting access to higher education. Education can be both utilitarian and transforming but at different times education policy places it on a continuum somewhere between the two.

Traditional knowledge paradigms, structures and policies limited access to university places which were gained through academic and social competition and the release of "student places" to universities. The competition favoured particular groups, for a long time men, then people of higher socio-economic status, workers in particular professions, and urban dwellers. Policies were directed at labour market needs, though the effectiveness of this was contested.

Advanced technologies have allowed more open access to information and the capacity to share information which has radically challenged these social and policy restrictions. The former distance of the university from parts of society (parodied as the Ivory Tower syndrome) has been eroded. This is not entirely a bad thing. The quality, relevance and currency of teaching and research has been challenged, the barriers to university entry have lessened, professional groups have required closer accreditation and students have been encouraged to have a stronger voice and ownership of the process; this later gain at the cost of a significant financial debt upon their graduation.

The higher education landscape in Australia has radically changed in the last decade. The rapid growth and more recent decline in International enrolments supported an equally rapid growth of higher education private providers with specialised courses and lower overheads than Australian universities which has created a highly competitive market place. The Bradley Review reforms and deregulated funding for undergraduate students opened access to a more diverse student population and increased competition between universities. Government funding under the Higher Education Partnership and Participation Programmes (HEPPP) is promoting aspiration raising within communities which have had lower participation in university education. The results of this will be seen in the next decade. Within a three year period the entry requirements shifted so that most Australian Year 12 graduates can enrol at a university. The concept of universal higher education has become part of the national educational aspirations and expectations.

Student access to mobile devices and social media has enabled a connected generation to accept a global perspective as the norm. The development of MOOCS has demonstrated the capacity of technology to facilitate borderless education provision. This takes competition to a new global level no longer requiring the movement of the student or academic. At the same time students, government and employers are developing stronger study abroad, employment and Asia Capable strategies.

These are sudden and quite radical shifts. Institutional responses have varied from: *This doesn't impact on us much* to *We are changing our DNA.* It is not too unkind to point out that universities were not traditionally known for their nimbleness or internal innovations; however, there have been some fast learners in the group.

So where are the student and the higher education academic in this? In past times, we were socialised to think a book was a precious commodity and folding the pages or throwing one out still seems sacrilege. School leavers starting university this year were born in 1995. Few of them remember a time without the internet, most of them have had several mobile phones, and Facebook is a real meeting place for them. They shop and bank on line, play games and expect to learn in that space, too. They have come out of schools which have individualised their learning, offered attention to a variety of learning styles, resourced group work and problem solving and provided rich relationships with teachers including responsive and prompt feedback and remediation of work. There is a growing critique of Australian schools that implies they have not allowed young people to experience failure or to understand that study is challenging.

There is a gap between these expectations and the traditional lecture and tutorial with large groups and limited access to staff with feedback frequently too little or too late, common to contemporary Australian universities.

This learner, and his/her older colleagues, have chosen a particular university and programme, and they are paying fees through HECS-HELP.[12] They understand that student satisfaction is a government requirement for funding universities. The MyUniversity website[13] provides comparative data on Commonwealth-funded universities to assist student choice. They are critical consumers and their constant refrain is:

- Staff don't use technology enough and they don't use it well enough.
- We want recorded lectures with rich graphics.
- The Learning Management Systems and university business systems need to be more user friendly, less repetitive and faster.
- We don't use email anymore.

That being said, they also want many of the traditional campus offerings and want greater personal and academic support and more individualised tuition and programmeming.

About a third of their classmates are older learners. Many of these are highly IT competent, some are not. All are time poor and want flexible delivery of their courses and units. They want recognition of prior life learning in the curriculum.

Learners today inhabit a data-rich world and have built the facility to access, scan, replicate, integrate, manipulate and exchange that data. This capacity is quite extraordinary but it is not

[12] HECS-HELP is a loan programme to help eligible Commonwealth supported students to pay their student contribution amounts.
[13] http://myuniversity.gov.au/

learning. It can lead to superficial, overly confident, whimsical, compliant opinions that pass for thinking.

The learning process demands difficult thinking. It requires of the learner a level of cognitive dissonance; it seeks out interrelated or contradictory ideas; it extends thoughts through the addition of new information and reflection on already available knowledge. It requires of the academic a capacity to predict and map out the learning that is necessary to achieve an outcome: that is, to design the curriculum. The academic mediates both the design and the acquisition of the learning; that is, teaching.

The challenge today is to assist the many students who have an increasingly utilitarian view of learning. They enter a degree programme with a vocational outcome in mind. While about 80% of students are employed throughout their degrees they are aware of how difficult it can be to achieve graduate employment. This is particularly true of students who are first in family at university and those from disadvantaged groups.

To navigate learning in this new environment, students need skill sets that enable them to manage data overload and depth thinking and responses. Terry Heick (May 10, 2012) poses the following skill list:

- Persisting
- Managing impulsivity
- Responding with awe
- Questioning
- Innovating
- Thinking interdependently

This is an interesting list which reflects a contra position to some behaviours using technology may not support rich learning:

- Channel surfing
- Dualistic ratings like/dislike
- Stimulus overload/ self-projection
- Sound bites
- Constrained responses e.g. Twitter
- Wikipedia as authoritative

In the academic skills context we would add the use of academic language, that richer and more specific vocabulary, the capacity to draft a paragraph with complex ideas clearly expressed using the conventions of grammar and syntax. Universities will be audited on their capacity to promote these language skills once assumed as common to all students. This need does not exclusively reflect ethnicity, second language learning or student preparation, ability or the dreaded Australian Tertiary Admission Rank (ATAR) entry level. It reflects the spectrum of language use from emoticons to the academic thesis that today's students need to navigate. It reflects reliance on spell check, Google Thesaurus, video and books delivering the narrative of our times, and the list could go on. All students need levels of support with language and learning techniques and expectations.

Universities are challenged to construct new curriculum models that address the new capacity to use information mediated through technology in ways that promote rich, deep learning. This requires a reconceptualisation of the role and work of the academic teacher and the engagement of the learner. The vehicle for learning has to change. Imagine taking an ocean liner and turning it into a jet without disruptions to the passengers' journey and you gain some idea of the degree of difficulty facing universities.

Rich deep learning requires the student to explore, interrogate, analyse, reflect, experience, communicate and reconsider problems from multiple perspectives. It engages the mind, the heart and the spirit. It is transformative. Higher education promotes health and wellbeing because it is a transformative process. It requires high levels of engagement, commitments of time and relevance to life circumstances. Learning is not instant or easy.

We have never had a more information-rich world; our tools give us capacity to work with information and form knowledge individually and collectively. It is also a world where judgements and discernment are critical. These are more frequently made at the level of the individual rather than being reliant on accepted social mores and taboos or institutional or class norms.

The first decade of the 21st Century also brought a change in the socialisation of our students. Educated after the Internet, their expectations of technology and its integration in their learning and social lives at university was assumed. Like many universities, ACU was found wanting. A common complaint was that technology was not used well enough, often enough and that we lacked competence and imagination in this area. They were able to access knowledge, contact peers and mediate their learning in new ways. Concerns regarding rigid timetables, lack of access to flexible delivery of lectures and tutorials and bureaucratic administration and assessment processes were becoming common.

Academics were meeting these challenges in diverse ways, some were innovating to meet the demands, and others were becoming more demanding and lecturing to increasingly empty theatres. At the same time new infrastructure and policy was needed within the university to address these challenges.

The second impact involved the disruption of the Teacher-Learner interface demanding new understanding of learning and teaching and responsive pedagogies.

From the earliest times (our own Aboriginal and Torres Strait Islander peoples are an example), oral tradition and exposition of ideas from an elder, wiser person to a younger learner has been core to the learning process. In more recent times institutions have mediated this process and we have seen teams of teachers work with large groups of learners. With the increased emphasis on vocational education goals we have seen practitioners assist teachers in integrating work aspects of learning. Textbooks and resources allowed cross-institutional sharing of curriculum. However, basic course design has remained in the hands of the academic.

Technologies do not drive learning; often they can distract from learning but they have challenged the delivery of learning and enabled and enriched it. The 21st Century pedagogy is reliant on a solid platform of technology.

In 2008, there was little innovation in educational technology or pedagogy at ACU. There was a basic

Blackboard Learning Management System. Lecture capture was available in some rooms but rarely used. Mandated requirements were limited to unit outlines on Blackboard. Few students accessed these as hard copies were also distributed.

There were pockets of innovation supported largely by the corporate IT team and disconnected from educational structures and policy.

In 2009 we reviewed the Learning and Teaching Centre and redirected its work to support greater integration of educational technologies, pedagogical innovation, learning analytics and policy.

ACU also undertook a major review of its Learning Management System (LMS) and associated technologies. Using the review as an opportunity to engage academic staff, a series of workshops was held with key faculty and academic support staff. The project recommended the implementation of a module LMS with an Equella Content Management System.

Continuing the process of across-university consultation, ACU set out to build capacity and develop the new system. With the assistance of a critical technology partner, we established Moodle and migrated current units of study to it. This provided ACU with a platform from which to address the rising student demand and to upskill the academic staff.

At the same time, work on policy and employment requirements ensured that staff engaged with the new pedagogies. This uptake required more and better support from e-learning advisors, centrally and in faculties.

Good curriculum is still dependent on clear focus and articulated learning outcomes, scaffolded learning and assessment experiences and high quality teacher-student-class interactions with formative and summative student achievement feedback and student feedback on the learning experience. At the institutional level, learning analytics and continuous curriculum evaluation and renewal also need to be there.

The opportunity that we have today is to partner in the design and development of courses and curriculum to ensure that we harness enabling technologies, access rich and meaningful data, develop stimulating and challenging learning and assessment experiences related to real life and provide students with appropriate generic and graduate skills to navigate a data-rich, complex and contradictory, constantly evolving global environment where they will manage careers and lives with unpredictable opportunities and threats.

This requires a respect for multidisciplinary learning and teaching teams including:

- academics with strong discipline knowledge, understanding of learning and students' aspirations and expectations, and technological competence and comfort
- specialist learning and curriculum designers and developers, who understand the application of pedagogies to a discipline and/or professional preparation, have a psychological and sociological understanding of learning and teaching and technological competence and comfort
- technology specialists who understand the applications of technology to pedagogy, have excellent teamwork and project management skills
- educational resource providers who can tailor resources to meet institutional needs at

appropriate cost levels
- technology partners (in-house and external) who provide infrastructure, maintenance and technical advice.

The days of course design by single academics are over. There is a huge reorientation of course development being undertaken. Academics are challenged, as are institutions, to develop greater capacity in the technology applications. The marketing machines of technology providers are buffeting institutions with options at a faster rate than opportunities can be introduced. Institutions are developing approaches and aligning policy and resources to those. There are threats perceived and real in this turmoil.

This shift is occurring at the same time as the definition of academic work in Australian universities is being challenged by new approaches to research, also more frequently multidisciplinary and team-based than previously. Academic workload is managed in an industrial model that is resistant to new processes and the demands of new approaches to pedagogy, course design and borderless education. The nature of academic work is changing. The academic workforce, highly skilled, skewed to mature aged, grounded in individualism and frequently socialised intensively in one or a few very similar institutions, is finding this change very difficult. This is not unusual. We have seen similar patterns with bankers, journalists and medical practitioners. It is part of transforming the ship into a jet.

Since Australian universities have made the choice to offer a large proportion of fully online programmes, others have linked with MOOCs but most have adopted a range of options including:

- online courses
- blended learning
- flipped classrooms with rich online resources
- traditional lecture/tutorial campus-based courses
- clinical school-based programmes
- work-integrated programmes.

ACU uses all of the above but is now at the stage where some consolidation and direction is required. In 2013 the University commenced a consultation on the development of a Learning and Teaching Framework which will provide direction for pedagogical course development and delivery in the coming decade. This Framework will mandate minimum standards of engagement with online learning for students and corresponding embedding of e-learning and e-learning tools within the curriculum.

This process provides the University with the opportunity to:

- develop awareness in academic staff of the need to progress online learning and to provide evidence to show the student a broad and competitive advantage
- consolidate current practice using the current suite of LMS tools
- update relevant policies
- set aspirational goals for future engagement with clear targets and responsibilities.

The Learning and Teaching Framework comes at a time when the University and the sector is grappling with the nature of the campus, looking at hubs and study centres, and attracting students who demand different access and support systems that require sophisticated online learning and business systems.

The challenge for the Learning and Teaching Framework is not to continue the exploration of a little of this and a little of that but to integrate the e-learning into a purposeful and engaging curriculum offered from virtual and/or physical campuses. To achieve this pedagogy we must adapt to technology while ensuring that learning design and delivery remains authentic to student needs and the contexts in which their degrees will be deployed.

The third impact is the redefining of business processes and consequently work and customer service in a technologically-enabled global economy and community.

One does not have to go back too far in the past to remember companies and government departments with large, botched computer-assisted business systems where millions of dollars were misspent in aborted projects. While shareholders and the public were horrified at the "waste", insiders were overwhelmed by the complexity of business systems analysis, people and change management, project management and cost containment. With hindsight we can see this period as developing and producing some key learnings. The irony for universities is that we study these events, teach about the learnings and yet struggle internally with the realities of implementation and change management.

Universities have complex business and client relationship needs. Investment in these often comes second to glorious buildings. With Australian university student populations ranging from 5000 to over 60000 and teaching terms running in unequal lengths across the year and frequently across the globe, universities need sophisticated systems. Add to this a highly competitive and regulated market and the demands on systems ramp up considerably.

Universities are open to public scrutiny across all their endeavours. As publically funded institutions, that is appropriate. The locus of influence around the quality and delivery of systems has shifted from the internal bureaucrats managing the systems to the students they service. A highly competitive market is good for a shift to customer focus, in this case, student service.

Students expect business systems at least as responsive and personalised and mobile as their bank. They are consumers who know what is technologically possible. They do underestimate the challenges of delivering that within their institution, which is probably helpful to us, provoking us to move faster.

This means universities need, not just the administrators of the past, but staff with new capabilities in business analysis, business process design, staff training, project management, contract management and procurement and outsourcing management.

Investment in improved systems is required both at the learning and administration interfaces. This requires significant capital and solid planning and investigation. Systems alone, however, will not improve the service capability of the university.

Universities are frequently criticised by internal staff for being too corporate and by external partners for not being corporate enough. The university is a particular beast and education an experience undertaken with a community rather than a product produced for purchase. Understanding this identity and its consequent relationships is critical to enabling change and development. Change which does not address the learning and teaching and research driver of the university will flounder. It is rarely seen that a quick top down change designed to save money has achieved that or, in fact, ended up changing much at all in the longer term.

Significant improvements in student services and administrations, and supported pedagogies will only be achieved through whole-of-institution planning, meeting structural barriers with cross-unit collaborations, changing out-moded definitions of work and industrial agreements, and staging successful multi-focused implementations. This is not easily achieved. Industry partners are critical in this process.

Industry partners share possibilities of new and better ways to harness the enterprise and move it toward its strategic goals. They frequently cross-fertilise the sector, building on the experiences of different institutions with new clients. External and internal partners need to engage in learning together. Promises of perfect solutions, underestimating cost or complexity of implementation and unclear professional boundaries will sink potentially effective partnerships. Failure of universities to scope their needs, identify the change management required and provide the leadership needed to complete the project will also ruin a partnership. Good partnerships require trust and dialogue, they take time to establish and work to maintain. Cost is a driver but not always a deal breaker. Reputation is critical and knowing that a partner has committed and competent staff are on board is key to reputation.

We are in a time of possibilities; the 'Cloud' symbolises beautifully the height of our aspirations. Today we have tools that can address access and equity in education across the globe. For better or worse we can be linked 24/7, and our knowledge and experiences can be shared in rich and diverse ways. Many parts of the world struggle to provide access to education for children and young people and there are adults who have not yet had access. Australia is well poised to develop its global reach in education and provide inexpensive online learning and teaching at all educational levels. While we as a nation absorb the aspiration of all our citizens having access to higher education, let us not forget those global citizens who are yet to access primary and secondary education. Teaching is being cracked open and we know more than ever before about learning. There are huge social and commercial opportunities in this space.

Work and study are becoming more varied and responsive to the individual. We are building systems that provide outreach to individuals through learning analytics and communication technologies. We are developing increasingly complex and flexible workplaces. The concept of lifelong learning is being replaced with ubiquitous learning as we engage. The opportunities are enormous and only limited by our imaginations and capacity to scan our environments and relationships.

In harnessing these possibilities, we need to keep our feet on the ground. There is hard, complex, relational, institutional and technological work to be done. Our feet are at the frontier, we are looking up to those clouds and together we can revolutionise higher education in Australia and across the globe.

References

Barber, M., Donnelly, K. and Rizvi, S. (March 2013). An Avalanche is Coming: Higher Education and the Revolution Ahead. *Institute for Public Policy Research.* Retrieved from http://www.ippr.org/images/media/files/publication/2013/04/avalanche-is-coming_Mar2013_10432.pdf (accessed July 2, 2013).

Bradley, D., Noonan, P., Nugent, H. and Scales, B. (December 2008). Review of Australian Higher Education. *Department of Education, Employment and Workplace Relations, Australian Commonwealth Government.*

Coates, H., Edwards, D., Goedegebuure, L., Thakur, M., van der Brugge, E. and van Vught, F. (June 2013). Profiling Diversity of Australian Universities. *LH Martin Institute and ACER Research Briefing*.

Gallagher, S. and Garrett, G. (July, 2013). Disruptive Education: Technology-Enabled Universities. *The United States Study Centre at the University of Sydney.* Retrieved from http://ussc.edu.au/ussc/assets/media/docs/publications/130801_DisruptiveEducation_GallagherGarrett.pdf (accessed Aug 1, 2013).

Glance, D. (2013, July 1). Dear Harvard Arts & Science professors, it is not MOOCS you have to fear. Retrieved from http://theconversation.com/dear-harvard-arts-and-science-professors-it-is-not-moocs-you-have-to-fear-15710 (accessed July 2, 2013).

Heick, T. (May 10, 2012). How 21st Century Thinking Is Just Different. Retrieved from http://www.teachthought.com/learning/how-21st-century-thinking-is-different/ (accessed June 19, 2013).

Heick, T. (August 31, 2012). 9 Characteristics of 21st Century Learning. Retrieved from http://www.teachthought.com/learning/9-characteristics-of-21st-century-learning/ (accessed June 19, 2013).

Heick, T. (August 25, 2012). 6 Characteristics of Tomorrow's Classroom Technology. Retrieved from http://www.teachthought.com/technology/6-characteristics-of-tomorrows-classroom-technology/ (accessed June 19, 2013).

Heick, T. (December 22, 2012). 1 Certainty & 25 Possibilities: What to Expect From Education in 2013. Retrieved from http://www.teachthought.com/trends/what-to-expect-from-education-in-2013/ (accessed June 19, 2013).

Heller, N. (May 20, 2013). Is College Moving Online? *The New Yorker*. Retrieved from http://www.newyorker.com/reporting/2013/05/20/130520fa_fact_heller (accessed May 29, 2013).

Johnson, L., Adams Becker, S., Cummins, M., Estrada, V., Freeman, A. and Ludgate, H. (2013). *NMC Horizon Report: 2013 K-12 Edition*. Austin, Texas: The New Media Consortium.

Kolowich, S. (2013, May 2). Why professors at San Jose State won't use a Harvard professor's MOOC. Retrieved from http://chronicle.com/article/Professors-at-San-Jose-State/138941/ (accessed July 2, 2013).

Teach Thought Staff (October 18, 2012). 12 Principles of Mobile Learning. Retrieved from

http://www.teachthought.com/technology/12-principles-of-mobile-learning/ (accessed June 19, 2013).

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Abstract

Introduction: Dalarna University and the Nursing programme have performed eLearning for a long time and our feeling was that we are good in providing high quality eLearning. However, we wanted to benchmark the education against quality standards for a more objective quality assessment and thus as one of the first Nursing programme in Europe we performed an analysis of the education with support of European Association of Distance Education Universities (EADTU) system. **Background and aim:** Today, e-learning becomes more established in higher education providing new pedagogical possibilities and support for competence development. This has impacts on students' and teachers' roles and responsibility for learning, creation of learning content and activities and forms for interaction. However, it is necessary to assure the quality of eLearning environment and experience provided to the students. The aim of this paper is to describe a quality improvement process regarding eLearning of a Nursing Programme conducted in a blended learning environment. **Methods:** A systematic Benchmarking process with a bottom-up approach developed by EADTU was used to assess the quality of eLearning. **Results:** A need of strategies and work processes regarding management, development, implementation and evaluation of eLearning was identified as well as directions regarding teachers' competence and continuing learning. The awareness of strengths and weaknesses in the nursing programme in relation to eLearning has provided incitement for a continuous quality work. **Conclusions:** It is essential to have knowledge about the quality of higher education concerning structures, processes and results. Benchmarking can function as a tool to initiate a process of heightened awareness and ongoing quality work. Benchmarking with a bottom-up approach could be a fruitful way of enforcing and maintaining high quality in higher education.

Key words: Quality assurance, eLearning in Nursing, Benchmarking

Introduction

Dalarna University and the Nursing programme have performed eLearning for a long time which has

created new possibilities for students to be tutored and educated using innovative technical methods and our feeling was that we are good in providing high quality eLearning. Our focus has been rather unique among nursing programmes in Sweden. However, we wanted to benchmark the education against quality standards for a more objective quality assessment and thus as one of the first Nursing programme in Europe we performed an analysis of the education with support of European Association of Distance Education Universities (EADTU) system. The aim of this paper is to describe a quality improvement process regarding eLearning of a Nursing Programme conducted in a blended learning environment. In addition, we identify future challenges and strategies for maintaining and safeguarding the quality of this education.

Background and context

The goal of the Nursing programme is to develop the education programme to become a leading eLearning institution in Sweden. The goal is to use all types of techniques and learning activities in every course, depending on the learning goals of single tasks and the type of course, to fulfill the specific needs of both teachers and students.

Dalarna University has long maintained a profile as an institution for "next generation learning" (NGL) (Högskolan Dalarna, 2012), with an investment in eLearning technologies and pedagogy to educate the next generation of students. For individual institutions at the university, the venture has thus far primarily concerned the deployment of new technologies, such as learning platform systems and other technology support. This step has been crucial for development. However, the next step for the nursing programme (with 400 registered nurses) is to fully integrate the idea behind eLearning (enhancing diversity and quality in learning) into the various programmes and courses (Rigby, 2012). The goal is to meet the learning needs of students and boost personalization with increased participation and responsibility for the learning outcomes of students.

NGL at Dalarna University

Dalarna University has a well-developed and well-known eLearning education. Approximately 65 % of the students at the university are studying in an eLearning environment, and the university strategy is driven by three important principles:

- improved interaction between teachers and students
- a superior and user-friendly technical environment in which pedagogical ideas are the focus
- the stimulation of students to become more focused and responsible for their learning activities and outcomes

The NGL centre has systematically worked to implement and develop new techniques and eLearning pedagogy. The vision of NGL is that learning is based on collaboration and should be created from the perspectives of individual students, regardless of their learning styles, life situations and reasons

for studying. The research section of the NGL programme consists of numerous activities that are focused on eLearning and technology-mediated knowledge processes (Högskolan Dalarna, 2012). The Nursing programme has of course benefits from this milieu however we considered that it was important to evaluate how well we have adopted the NGL approach.

eLearning and nursing education

Traditional nursing programme have been devoted to campus education with only small elements of eLearning education (Pfefferle, Van den Stock et al. 2010). The education in nursing (nationally and internationally) has been designed in a traditional manner; that is, students attend classes and acquire information, and their knowledge is assessed by examinations. This education has tended to focus on producing material and lessons rather than on the students and the differences among their capabilities, learning skills and life situations. This system must change because today's higher education requires new methods to meet challenges in the education sector and in society (Högskoleverket 1999; Ossiannilsson and Creelman 2012).

Today, eLearning becomes more established in higher education providing new pedagogical possibilities and support for competence development. This has impacts on students' and teachers' roles and responsibility for learning, creation of learning content and activities and forms for interaction. However, it is necessary to assure the quality of eLearning environment and experience provided to the students. The challenges extend beyond technical implementations to encompass the design and development of an educational system that is focused on learning rather than passively teaching students. The goal is to create an eLearning educational programme that combines online techniques with important principles, such as student activities, participation and personalized learning. In addition, we want to create a learning milieu that promotes independence, allows flexible work hours, enables students to create their "own university" and provides them with opportunities to practice their computer and digital skills. We believe that eLearning provides a means of achieving high-quality education and creating an environment that enables knowledge acquisition. The eLearning method both disseminates information and assists students in becoming empowered individuals (Forman, Nyatanga et al. 2002; Adams 2003).

Healthcare and the need for e-learning

Rapid changes in the healthcare system require new and extensive competencies for nurses. Nurses must be competent in handling technologies to improve patient outcomes (Rigby, Wilson et al. 2012). Healthcare is a highly technical sector in both the treatment and monitoring of patient health statuses (Rigby, Wilson et al. 2012). For example, today, it is necessary to be able to access information in evidence-based databases and to use innovative communication technology, such as asynchronous discussion boards and professional blogs, to maintain clinical knowledge (Rigby, Wilson et al. 2012).

In addition, lifelong learning is currently viewed as essential to maintaining professional competency (Forman, Nyatanga et al. 2002; Rigby, Wilson et al. 2012). The majority of the workforce has families and work shifts. Thus, the demand for flexible, innovative access to continuing education has increased. Institutions must support learning for all students rather than merely supporting the learning of individuals who can be enrolled in a campus degree programme (Ossiannilsson and Creelman 2012). eLearning is viewed as an opportunity for students to enhance their learning and to

develop the essential IT skills that are necessary for self-directed learning (Rigby, Wilson et al. 2012).

WHO (World Health Organisation) has emphasised that the use of a digital approach can enhance the likelihood of attaining adequate, equal and accessible health for all members of society (WHO 2012). WHO uses the term e-health to refer to IT solutions that can be used for treatment, research and education. The EU also uses the concept of e-health to refer to IT that is used for improvements in the health of both individuals and society (European Commission, 2012).

In summary, we possess significant experience in distance/eLearning education and have thus become strong and advanced in our use of this learning approach. The university has a progressive eLearning centre. However, after years of eLearning education, we now felt that it was appropriate to improve and fully integrate eLearning into the nursing programme. Through grants from the NGL centre, we benchmarked our eLearning progress according to the EADTU (European Association of Distance Teaching Universities) standards (Williams and Rotheram 2010).

Methods

A systematic Benchmarking process with a bottom-up approach developed by EADTU was used to assess the quality of eLearning. We used benchmarking as a tool in a systematic method of identifying gaps in our learning performance and as a guide for making changes to ensure high-quality education.

Results

The benchmarking process provided a thoroughly evaluation of the quality of our nursing programme in the NGL context. The evaluation demonstrates our existing knowledge that we are good on several points but need to develop others. High scores were obtained for the student platform of receiving information, communication with teachers and technical support, including overall strategies and administration. However, areas that we must develop include the integration of eLearning into our courses to permit dialogue among students and teachers, the provision of personalized education and the encouragement of responsibility and participation among students and staff in eLearning education. In sum, a need of strategies and work processes regarding management, development, implementation and evaluation of eLearning was identified as well as directions regarding teachers' competence and continuing learning. The awareness of strengths and weaknesses in the nursing programme in relation to eLearning has provided incitement for a continuous quality work.

To achieve our goals of providing high-quality eLearning education, we must articulate and develop the following:

- the vision of the institution in relation to eLearning
- the quality improvement cycle (e.g., by benchmarking)
- the rights of students to design their own university (co-design)
- assessment methods that enable students to design their own education using, for example, eLearning portfolios
- innovative methods of using eLearning in clinical practice

- a context that promotes the consideration of student perspectives

We have only begun our journey towards the provision of high-quality eLearning nursing education. We will continue to encounter certain challenges in the future. We must develop and learn how to use new pedagogical methods and ideas to support the students in practicing their clinical skills. In addition, we must incorporate the eLearning approach into the entire nursing programme and allow the learning goals to guide the pedagogical methods and technical support. The university's eLearning goals (i.e., improved interaction between teachers and students, a superior and user-friendly technical environment in which pedagogical ideas are in focus and the stimulation of students to become more focused and responsible for their learning activities and outcomes) must be fully integrated into the nursing programme.

We still have some major challenges to face. Skeptical attitudes concerning the full adoption of an eLearning approach in a programme such as nursing remain. Some skeptics have claimed that eLearning will dilute the academic rigor. It can be a challenge to convince the staff to use a new system of education. Our experience practicing eLearning is lengthy, and the use of email and platforms is self-evident for our staff; however, the path from that level to the design of education based on the eLearning concept continues to be lengthy. In many situations, the traditional "active teacher–passive students" model is still employed with the assistance of eLearning techniques. The challenge will be to replace this traditional model with inclusive and participation-based learning. In addition, we must involve the entire institution to consciously shift from teaching to learning and to focus on student perspectives. The clinical training centre must also shift to an eLearning approach in a more advanced manner, for example, by using published and self-directed demonstrations on the internet and video-recording clinical practice situations.

Conclusions

It is essential to have knowledge about the quality of higher education concerning structures, processes and results. Benchmarking can function as a tool to initiate a process of heightened awareness and ongoing quality work. The quality of eLearning in the nursing programme increased as a result of this quality assessment, and hopefully also on a continuous basis due to the quality work processes that has started. Benchmarking with a bottom-up approach 5

could be a fruitful way of enforcing and maintaining high quality in higher education. The results from the benchmarking can be used to strengthen our processes to achieve a quality nursing programme and to contribute to encouraging the staff to use a continuous learning approach. In addition, the administrators and the NGL centre can use these data to design technology support for both students and staff.

References

Adams, A. M. (2003). "Pedagogical underpinnings of computer-based learning." Journal of Advanced Nursing 46(1): 5-12.

European Commission (EU) (2012). ICT for health. Electronic source: ec.europa.eu/ehealth

Forman, D., L. Nyatanga, et al. (2002). "E-learning and educational diversity." Nurse Education Today(22): 76-82.

Högskolan Dalarna (Dalarna University). 2010. Next Generation Learning. Electronic source: http://www.du.se/ngl

Högskoleverket (The Higher Education Authority) (1999). Studentperspektivet i högre utbildning - utveckling och helhet (Student perspective - in higher education. Development and holism). Högskoleverket, Stockhholm.

Ossiannilsson, E. and A. Creelman (2012). "From proprietary to personalised higher education - how OER takes universities outside the comfort zone " Journal of e-learning and knowledge Society 8(1): 9-22.

Pfefferle, P. I., E. Van den Stock, et al. (2010). "The LEONARDO-DA-VINCI pilot project “e-learning-assistant” – Situation-based learning in nursing education." Nurse Education Today 30(5): 411-419.

Rigby, L., I. Wilson, et al. (2012). "The development and evaluation of a ‘blended’ enquiry based learning model for mental health nursing students: “making your experience count”." Nurse Education Today 32(3): 303-308.

WHO (2012). National eHealth Strategy Toolkit.

Williams, K. and B. Rotheram (2010). Benchmarking exercise on e-learning. Brussel, ESMU (European Center for Strategic Management of Universities).

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Mobile device and learning possibilities in higher education

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Abstract

Mobile devices include handheld tools as radios, smartphones, tablets, laptops, and electronic book. They allow new possibilities, require new competences, and provide new opportunities. Mobile devices produce mobile behaviours. The literature review discovers new terminology as mobile learning that means that learning is not enclosed inside classroom walls. Learning is now ubiquitous that means that everywhere is an adequate place to learn. That is possible due to new types of devices that usually integrate several tools, are not linked to space limitations as power supply, and are frequently connected to virtual word that open mainly their possibilities. We present the partial results of a research about the importance and use of mobile devices for learning. Taking advantage from a questionnaire, the research team collected information on six dimensions: the identification data of the respondents, the use of mobile devices, locations and frequency of use of mobile devices, functions and applications of mobile devices, applications and learning with mobile devices, and the integration of interfaces on mobile devices, and their satisfaction and benefits. The identification data facilitate opportunities to compare groups of users according to a viable as gender or age. The mobile devices use provides information about ways, locations and frequency of use of mobile devices. Data about functions and applications, which are related to users' activities and habits, are also given. These uses are also linked to general applications and learning ones, and their interfaces integration. Finally, it collects the users' perceptions about satisfaction and benefits.

Keywords: mobile device, mobile learning, learning technologies.

Introduction

The term "ubiquitous learning" has begun to be used to refer to a new form of learning. Certain authors hold that the existence of digital resources and their portability has given rise to a modality of learning that constitutes an emerging paradigm (Cope & Kalantzis, 2009). This intersection of online education and mobile devices has become known as "ubiquitous learning" or "mobile learning". The application of mobile devices (mobile phone, tablet, console, laptop, etc.) to learning constitutes an innovative initiative that can support and develop the process of teaching and learning. Thus, the so-called "ubiquitous learning" calls for the use of educational practices mediated by mobile technologies, affording students the possibility of learning anywhere and at any time. However, for learning in ubiquitous conditions to be effective, the use of these media must be accompanied by suitable methodologies. Power and Morven-Gould (2011) note that, although online learning is increasingly accessible and perceived as the leading edge, the actual number of teachers promoting this form of teaching is still quite small, and is unlikely to become widespread without a major change in direction.

In order for ubiquitous environments to meet students' needs, they must be based on educational theories taking into account the characteristics of the technology, the design of the teaching-learning practices and the interaction taking place. Such is the case of distributed cognition (Hutchins, 1995), a theory within the field of study of human-computer interaction and educational technology. In broad terms, this theory revolves around the idea of sharing information and building knowledge. It is applicable to collaboration situations, in which people interact and learn with others, supported by suitable technology, through the construction of common cognitive frameworks and shared representations of reality. Thus, technological resources make possible the construction of knowledge on an individual as well as a collective level.

Moreover, we agree with Baek and Monaghan (2013) in that the use of mobile devices often significantly facilitates learning on account of their accessibility, falling prices and light weight. Virtual educational environments also introduce, among others, the following wide-ranging dimensions for the design of teaching-learning practices:

- Teaching is extended beyond the classroom to other delocalized scenarios. Mobile learning can take place in different contexts in the course of students' daily practices. Hence, interaction with the digital environment becomes a variable to be reckoned with in the design of educational sequences in mobility situations.
- They introduce the educational dimension of ubiquity – the possibility of learning taking place in any context. To the extent that mobile devices allow the extension of learning environments to other places and situations, teaching becomes ubiquitous, since learning takes place in/with/from any environment.
- There are specific mediation tools to perform this type of learning. Mediation takes place through interfaces with specific configurations, functionalities and devices: touch screens, video viewers, headphones, etc.

These and other dimensions directly associated with ubiquitous learning call for reconsideration of the competences required to carry out learning processes with mobile devices. However, upon reviewing the existing scientific literature, we find that there are no solid proposals constituting

sufficiently valid standards upon which didactic design may be based. All this hinders their expansion and the inter-operability of educational designs incorporating the use of mobile devices.

The possible characteristics attributable to "ubiquitous learning" can be said to include the following (Houser & Thornton, 2004; Shudong & Higgins, 2005; Yu Liang, 2005):

- Permanence: it is very difficult for students to lose their work and hence the learning process can easily be resumed.
- Accessibility: users can access their documents from any location and through different devices via the Internet.
- Immediacy: users can access the information at any time, both in real time and in delayed time mode.
- Interactivity: users interact consciously and unconsciously via different devices.
- Integrateability. Learning is integrated into everyday life through situated activities.
- Adaptability: people have access to a diversity of content, which they can adapt according to their needs anytime and anywhere.

Assuring ubiquitous learning calls for the use of environments that may be accessed in various contexts and situations (Liu & Hwang, 2009). The increased availability of devices with Internet connection technology broadens the educational possibilities of virtual learning scenarios, amply surpassing conventional ones, despite requiring a greater command of competences.

As stated earlier, "mobile learning" constitutes an emerging sphere of practice and a novel, expanding field of research. However, scarce theoretical and conceptual research work has been done to explain the complex relationship between the rapid evolution of technology, in some cases at a breathtaking pace, and its educational applicability vis-à-vis its swift integration into users' everyday life. Mobile devices with Internet connection allow the availability, production and publishing of content and a great flexibility of the training process, which can be extended to different contexts. Thus, they allow students to enter into a different and novel relationship with digital scenarios, space and time. Moreover, mobile connectivity alters the traditional sequence of communication between teachers and students and other educational agents. Trainers and trainees are consumers as well as producers of content.

The appropriation of the technology is an important element to assure the quality of technologically mediated learning. This achievement is made through the processes accompanying personal practices involving the use of mobile devices. They essentially include interaction, assimilation and accommodation, which are doubtless conducive to change (Cook & Pachler, 2009; Pachler et al., 2010). According to this approach, the convergence of communication media around mobility resources, coupled with the association of the cultural structures characteristic of digital scenarios, generate individualized and collective modes of appropriation in the form of learning contexts. On the basis of these virtual environments, social, cultural and technical evolution tends to generate situations in which there is no need to differentiate these media for communication and learning purposes, within and outside formal and informal educational spheres.

In addition to the skills required to make use of the abundant available information, students need competences to face the challenges of the knowledge society. According to Redecker (2008), the behavior of students in the new millennium is mediatized by technology as a result of its intensive use, causing them to be highly qualified in simultaneous multitasking (watching television, talking on the phone, performing tasks on the computer, mobile phone, tablet, etc) and in multi-area work. This could cause cognitive overload and the consequent loss of efficacy. The foregoing also conditions their way of thinking, which is not as linear as that of previous generations. Their minds are more flexible and malleable, and exhibit variations in learning styles. (McLester, 2007). In this regard, Siemens (2006) points to different competences he considers necessary for digital literacy:

- Fixed attention: required in order to remain focused on important tasks.
- Filtering, referring to the extraction and management of relevant elements from the constant flow of knowledge.
- Connection focused on network creation in order to remain informed and communicated.
- Extension of the personal sphere toward utilitarian interaction at a level allowing the creation of social spaces.
- Creating and obtaining meaning with consequences for its comprehension and impact on other, prior knowledge.
- Assessment and validation, to determine the value of the knowledge and ascertaining its authenticity.
- Alteration of the processes of validation of persons and ideas within a suitable context.
- Browsing through different repositories, websites, etc., recognizing the information and/or knowledge through the use of technology in order to attain the intended goals.
- Acceptance of uncertainty based on a balance between known and unknown.
- Contextualization by understanding the digital context as a continuum where the action takes place, etc.

Contextual approach and research objectives

The present study forms part of a project undertaken within the Spanish university context. The project, managed from Universidad Nacional de Educación a Distancia, is being conducted between 2011 and 2013. The research, focusing on learning with mobile devices, is funded by a Euro 48,400 grant from the Government of Spain's *Ministry of Education, Culture and Sport* (ref.: EDU2010-17420). The team working on this project consists of a heterogeneous group of professionals contributing their complementary experience from various fields. Such complementariness allows the polygonal composition of a consistent team, endorsed by careers converging on the goals of the research subject undertaken. The research team comprises twelve lecturer-researchers from five Spanish universities: Universidad Nacional de Educación a Distancia (7 researchers); Universidad Complutense de Madrid (1 researcher); Universidad de Granada (1 researcher); Universidad de Oviedo (2 researchers); and Universidad de Vigo (1 researcher).

The general aim of the project is to inquire into the ubiquitous use of mobile devices with Internet connection and their impact on learning by university students. Its ultimate goal is to generate a standardized benchmark of the digital competences required by the students. This has been undertaken with the purpose of providing educational managers and planners with a set of models

that would contribute to improving the design of teaching-learning practices exploiting the possibilities afforded by the new digital devices and scenarios. The specific goals of the study as regards the present work include the following:

- Identify the devices usually utilized by university students to connect to the Internet.
- Determine the generic functions attributed by students to mobile devices.
- Identify the mobile devices used by the students for university learning.

Methodology

General perspective

There follows a short synthesis providing a general perspective of the project of which the present work forms part. First an overview is given of the main stages of the project comprising the present study, describing the various activities/tasks and the timeline for their performance (table 1). Owing to research requirements, this schedule may be subject to some changes.

Table 1. Project execution stages

Activities / Tasks	**Year**		
	2011	**2012**	**2013**
STAGE ONE			
Review and analyze the situation regarding the use of mobile devices by higher education students.	Jan-Apr		
Describe variables for the cataloging of mobile learning practices.	May-Jun		
Design an online questionnaire on mobile device uses.	Jul-Sep		
Survey application logistics: define the survey sample.	Oct- Dec		
Define and establish initial contact with team of experts for Delphi analysis.	Jan-Mar		
Initial interviews with academic managers, instructors and students from higher education centers.	Apr-Jun		
Create a website containing the research products.	Jan-Dec		
Carry out training-dissemination activities.			
STAGE TWO			
Apply the online survey to the selected sample.		Jan-Apr	

Conduct in-depth interviews with key informants and discussion groups.		May-Aug	
Multi-sited ethnography, involving interviews and participating observation in different contexts of practice with mobile devices.		Jan-Aug	
Projective analysis of the data resulting from the Delphi technique.		Jan-May	
Represent results by means of mashups and social media graphs, using quantitative and qualitative data.		Sep-Dec	
Propose a map of competences associated with the use of mobile devices.	Sep-Dec		
Maintain project Website.	Jan-Dec		
Carry out training-dissemination activities.	Jan-Dec		
STAGE THREE			
Compile, reduce and analyze data for public presentation.			Jan-Mar
Apply (test) and validate the pedagogic model for the development of mobile competences.			Jan-May
Prepare a dossier of the methodological principles and good practices detected regarding the use of mobile devices.			Jul-Dec
Carry out training-dissemination activities.			Jan-Dec
Maintain project Website.			

The nature of the project calls for a mixed (quantitative-qualitative) project design, utilizing instruments and techniques with varied degrees of structuring. The main instruments and techniques used for the collection of research data include the following:

- In-depth interview/open-item questionnaire, aimed at determining the constructions on which the behavior of mobile device users is based.
- Closed-item questionnaire, aimed at obtaining quantitative data on a massive scale regarding the use of mobile devices by higher education students.
- Discussion groups, for the purpose of delving deeper into the significance attributed by the students to technologically mediated learning and communication in mobility situations.
- Delphi Technique, used for checking with experts the trends in the evolution of the socio-educational use of mobile devices.

Instruments and analysis applied in the present work

The part of the study presented here focuses on the collection of data through a questionnaire consisting of closed, structured questions. Hence, this questionnaire was developed *ad hoc* by the project team of researchers for online and hard copy use. This protocol was submitted for endorsement to a team of experts prior to its application. It consists of thirty items with different sub-items preceded by the participants' profile information, preserving their anonymity. The questions posed deal with six dimensions mentioned in the following order: I. Identification details; II. Use of mobile devices; III. Location and frequency of use of mobile devices; IV. Mobile device functions and applications; V. Applications of and learning with mobile devices; and VI. Integration of interfaces in mobile devices: satisfaction and benefits.

Owing to space constraints, only certain results of the aforementioned questionnaire are presented in this work, arising from:

- Dimension II originating from item no. 7, regarding the devices usually used by university students to connect to the Internet.
- Dimension IV originating from item no. 19, regarding the generic functions the students associate with mobile devices.
- Dimension VI originating from item no 29, regarding the types of mobile devices they use for university learning.

The collection of data through this instrument was carried out both face to face and virtually (email and online platforms). Given the quantifiable nature of the information involved, the SPSS statistics Version 15 software package was applied and the resulting descriptive statistics are presented in the results section of this work.

Study population and sample

The population studied through the closed-item questionnaire consisted of Spanish higher education students using mobile devices in their daily practices. Segmentation was carried out during the sample selection process to favor the representativity of higher education institutions.

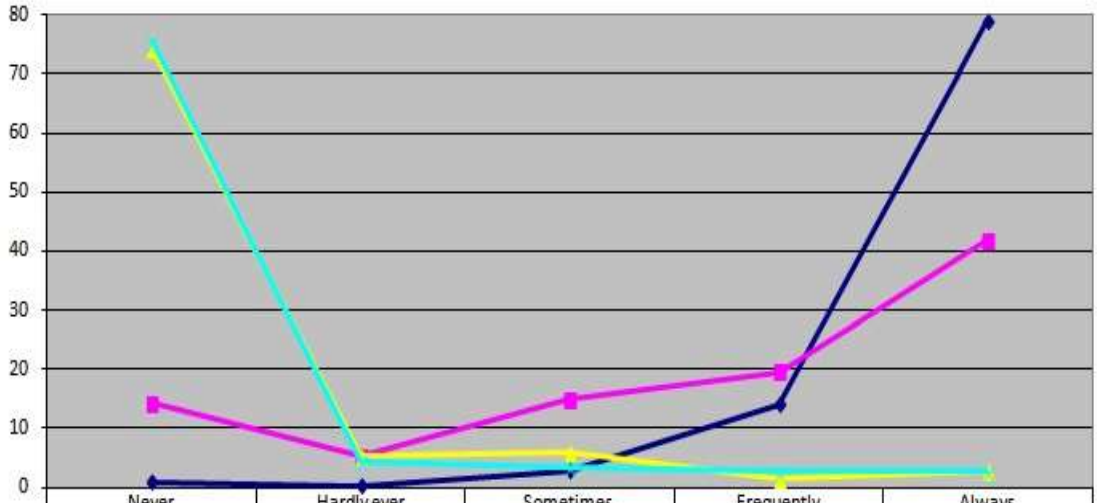
A total of 342 students from 4 Spanish universities have completed the questionnaire to date, including 74 men (22.5%) and 255 women (77.5%). These include 108 students aged between 18 and 20 (32.4%), 143 between 21 and 23 (42.9%), 38 between 24 and 27 (11.4%), 13 between 28 and 31 (3.9%), and 31 students over 31 years old (9.3%). By universities, the distribution is as follows: 21 participants from Universidad Complutense de Madrid (6.7%), 169 from Universidad de Oviedo (54.0%), 46 from Universidad de Vigo (14.7%), and 77 from Universidad de Granada (24.6%). In terms of the level of study, there were 282 undergraduate (94.6%) and 16 postgraduate students (5.4%). Also, 104 students (31.0%) were from rural areas while 231 (69.0%) lived in cities. Of these, 148 (44.6%) lived in towns with less than 50,000 inhabitants and 184 (55.4%) in towns with populations of 50,000 or more.

Results

Consistent with the aims set out in the present work, the results are grouped into three subsections, indicating percentage figures relative to the total number of respondents surveyed.

Type of device used to access the Internet

As shown in figure 1, a comparison of usual mobile devices such as computers, mobile phones, iPads, and iPods, revealed that the most frequently used devices, by a large margin, were computers, utilized by almost 8 out of every 10 students surveyed (78.9%). Also detected was an increasing proportion of internet access via mobile phone, frequently used by almost 2 out of every 3 users (accounting for 61.4% of the total if we add the results for the *Frequently* and *Always* options given in the questionnaire). At the other end of the scale, we find little access through iPads, iPods and similar devices, which most respondents stated they never used to access the Internet.



	Never	Hardly ever	Sometimes	Frequently	Always
Computer	0.9	0.3	2.9	14.0	78.9
Mobile phone	14.3	5.3	14.9	19.6	41.8
iPad	74.3	5.3	5.8	1.5	2.6
iPod	75.4	4.4	3.5	2.6	2.6

Figure 1: Percentage distribution of devices used to connect to the Internet

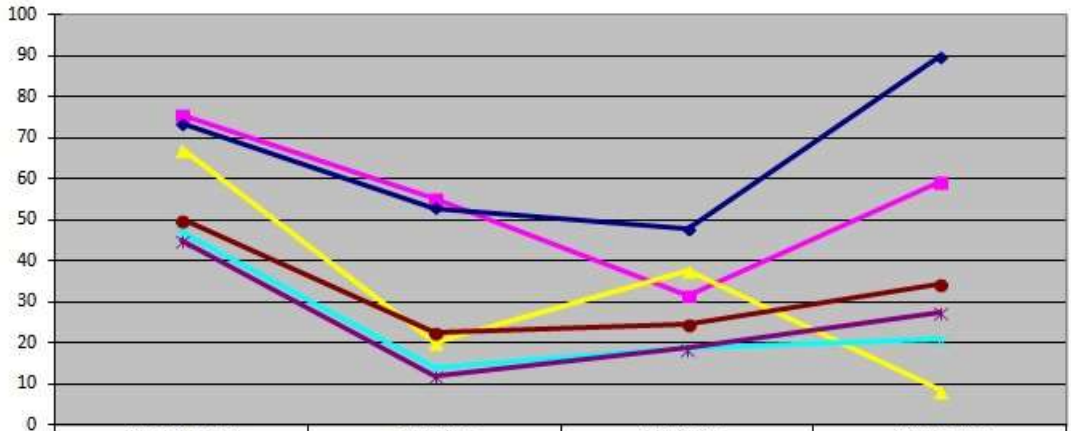
Assessment of the different functions attributed to mobile devices

In terms of the functions attributed to the various devices by the students, our analysis focuses on four main categories: entertainment, expression, motivation, and information. Of these, device use for entertainment purposes was found to prevail on average (59.89%), followed by information (40.16%). Respondents indicated a lower proportion of device use for expression and motivation purposes, which accounted for 29.43% and 29.92%, respectively.

As can be seen in figure 2, within the entertainment category, mobile phones are the most frequently used (75.7%), followed by laptops (73.7%), Mp4 players (67.5%), Tablets (50.3%), iPod

type devices (47.1%), and e-Books (45.0%). For information search purposes, the use of laptops was found to be prevalent (90.06%), followed by mobile phones (59.36%), Tablets (34.50%), and, in a significantly lower proportion, e-Books (27.48%), iPods (21.05%), and Mp4 players (8.48%). In terms of device use for expression purposes, mobile phones (54.97%) and laptops (52.92%) were found to predominate. Stated use of Tablets (22.51%), Mp4 players (20.17%), iPods (14.03%) and e-Books (11.99%) was scarcely significant.

Lastly, as regards the motivation factor, the use of laptops was found to prevail among the students surveyed (47.95%), followed by Mp4 players (37.72%), mobile phones (31.58%), Tablets (24.56%), iPods (19.01%), and e-Books (18.71%). Therefore, despite the growing market for and use of tablets, laptops were found to continue playing a clear leading role (66.2%), together with mobile phones (55.4%) for the aforementioned functions. Mp4 players (33.5%) and Tablets (33.0%) occupy a middle position in the ranking, while e-Books (25.8%) and iPod (25.3%) rank lower.

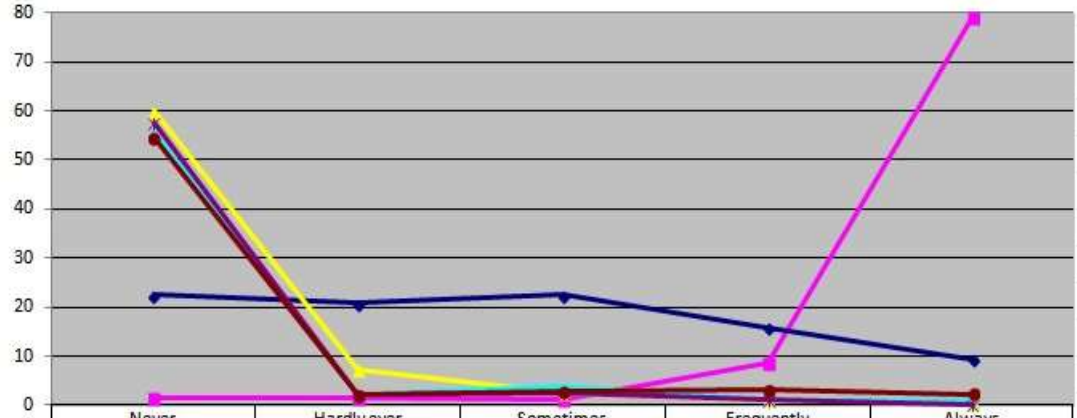


	Entertainment	Expression	Motivation	Information
Mobile phone	75.7	55.0	31.6	59.4
Laptop	73.7	52.9	48.0	90.1
Mp4 player	67.5	20.2	37.7	8.5
iPod	47.1	14.0	19.0	21.1
e-Book	45.0	12.0	18.7	27.5
Tablet	50.3	22.5	24.6	34.5

Figure 2: Percentage use of mobile devices for different purposes

Use of mobile devices for learning purposes

Figure 3 displays the use made by university students of mobile devices for learning purposes. They indicated a clear preference for laptops (79.2% use them always). A surprisingly high use of mobile phones for learning purposes was stated by the respondents (47.66% if we add the *Sometimes*, *Frequently,* and *Always* categories). Also worth noting is the number of respondents who indicated they never used Mp4 players (59.9%), iPods (57.6%), e-Books (55.6%) or Tablets (54.7%) for such purpose.



	Never	Hardly ever	Sometimes	Frequently	Always
Laptop	1.5	1.5	1.2	8.8	79.2
Mobile phone	22.5	20.8	22.5	15.8	9.4
Mp4 player	59.9	7.3	2.6	1.2	0.6
e-Book	55.6	2.0	3.8	1.2	0.9
iPod	57.6	2.0	2.6	1.2	0.3
Tablet	54.7	2.0	2.9	3.2	2.3

Figure 3: Percentage use of mobile devices for learning purposes

Conclusions and discussion

The data collected through the questionnaire administered to 342 subjects originate from 4 Spanish universities in widely diverse geographical locations, involving students of diverse ages, with a prevalence of females and undergraduate students, and a significant representation of students from rural areas and, hence, of towns with less than 50,000 inhabitants.

As regards Internet access among university students, it was found that computers remain the most frequently used means of internet connection in Spanish higher education. In this respect it is worth highlighting that laptops combine several of the mobile device characteristics for educational purposes indicated by Naismith et al. (2004): compact size, light weight, connectivity facilities, etc. Also worth noting is the fact that mobile phones already take a prominent place, ranking higher than other devices enabling easy mobility, and their traffic is expected to continue growing, particularly through the use of smartphones.

Of the functions enabled by mobile technology devices, entertainment and information are the ones university students most frequently indicate using. Laptops are the devices with the broadest functionality, together with mobile phones. This is explained by the opportunities they offer and the smaller number of problems to connect to the Internet. Possibly for the same reasons, this is the type of device most frequently used for information searches and perceived as the most motivating. Laptops likewise remain the most popular devices for learning purposes among students, although mobile phones are gaining ground. In fact, the use of mobile devices is set to grow in future, to the detriment of fixed systems. Global mobile Internet traffic is expected to reach 11.2 exabytes per month by 2017, which represents a thirteen-fold increase from 2012. Moreover, connection speed will foreseeably increase sevenfold between 2012 and 2017. This is due, in addition to the ease of use of the keyboard, to functionalities offered by laptops and their screen size. It also explains the

prevalence of laptops as the most utilitarian and preferred device for searching, collecting and/or organizing information, as well as for learning purposes (Cisco, 2013).

Mobile phones are the most widely used devices for entertainment and expression, and also play a significant role in information searching. Laptops rank second in popularity for entertainment and expression purposes. It is worth noting the motivating power of MP4 players ahead of mobile phones.

Despite the existing difficulties, the use of new technologies in university training is currently a reality (Ricoy et al., 2013). In fact, the results presented in this preliminary study are highly encouraging, although in general terms the possibilities afforded by mobile devices with Internet connection for ubiquitous learning have not been sufficiently analyzed or exploited (Hyeongjik et al., 2013), and this is a further reason to inquire deeper into them through the aforementioned research project. Besides the influence of other variables, such as autonomy in the use of the technology and social support (Di Maggio et al., 2004), it should be noted that training in device use, device use modes, and the connection and access possibilities afforded by them are key factors in the education of university students.

References

Baek, E. O. and Monaghan, J. (2013). Journey to textbook affordability: An investigation of students' use of eTextbooks at multiple campuses. *International Review of Research in Open and Distance Learning,14*(3), 1-26.

Cisco (2013). *Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2012-2017*. Retrieved 29 July, 2013, from http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/white_paper_c11-520862.pdf

Cook, J. and Pachler, N. (2009). Appropriation of mobile phones in and across formal and informal learning. In R. Land and S. Bayne (Eds.), *Digital differences: perspectives on online education* (pp. 101-128). Rotterdam: Sense Publishers.

Cope, B. and Kalantzis, M. (2009). Ubiquitous learning: An agenda for educational transformation. In *Proceedings of the 6th international conference on networked learning*. Retrieved 29 July, 2013, from http://www.lancs.ac.uk/fss/organisations/netlc/past/nlc2008/abstracts/PDFs/Cope_576-582.pdf.

Dede, C. (2005). Planning for neomillennial learning styles. *Educause Quarterly*, *28*(1), 7-12. Retrieved 28 July, 2013, from http://www.educause.edu/pub/eq/eqm05/eqm0511.asp.

Di Maggio, P., Hargittai, E., Celeste, C., and Schafer, S. (2004). *From unequal Access to differentiated use: A literature review and agenda for research on digital inequality.* New York: Russell Sage Foundation. Retrieved 18 July 2013 from http://www.eszter.com/research/pubs/dimaggio-etal-digitalinequality.pdf

Houser, C. and Thornton, P. (2004). Japanese college students' typing speed on mobile devices. In *Proceedings of the 2nd IEEE international workshop on wireless and mobile technologies in education.* Retrieved 20 July, 2013, from http://portal.acm.org/citation.cfm?id=978777&dl=GUIDE&coll=GUIDE&CFID=108110150&CFTOKEN=21035248.

Hutchins, E. (1995). *Cognition in the wild*. Cambridge: MIT Press.

Hyeongjik, P. D., Won, B. L., and Soo Cheon, L. (2013). Conjoint analysis for mobile devices for ubiquitous learning. In higher education: the korean case. *The Turkish Online Journal of Educational Technology*, *12*(1), 45-51. http://www.tojet.net/articles/v12i1/1215.pdf

Liu, G. Z. and Hwang, G. J. (2009). A key step to understanding paradigm shifts in e-learning: towards context-aware ubiquitous learning. *British Journal of Educational Technology*, *40*(6), 421-450.

McLester, S. (2007). Technology literacy and the MySpace generation: They're not asking permission. *Technology and Learning*, *27*, 16-22.

Naismith, L., Sharples, M., Vavoula, G., and Lonsdale, P. (2004). *Literature review in mobile technologies and learning*. Bristol: Futurelab.

Pachler, N., Cook, J., and Bachmair, B. (2010). Appropriation of mobile cultural resources for learning. *International Journal of Mobile and Blended Learning*, *2*(1), 1-21.

Power, T. M. *and* Morven-Gould, A. (2011). Head of gold, feet of clay: The online learning paradox. *International Review of Research in Open and Distance Learning, 12*(2), 19-39.

Redecker, C. (2008). *Learning 2.0: Case database. European Communities*. Retrieved 18 July, 2013, from http://ftp.jrc.es/EURdoc/JRC51916_TN.pdf

Ricoy, M. C., Feliz, T., and M.J. Couto (2013). The digital divide among university freshmen*. TOJET: The Turkish Online Journal of Educational Technology, 12*(2), 262-268. Retrieved 23 July, 2013, from http://www.tojet.net/

Siemens, G. (2006). *Knowing knowledge*. Retrieved 23 July, 2013, from www.knowingknowledge.com.

Shudong, W. and Higgins, M. (2005). Limitations of mobile phone learning. In *IEEE international workshop on wireless and mobile technologies in education* (pp. 179-181). Tokushima: Yamaguchi University.

Yu-Liang, R. (2005). Mobile learning: Current trend and future challenges. In *Fifth IEEE international conference on advanced learning technologies* (pp. 603-607). Retrieved 20 July, 2013, from http://www.computer.org/portal/web/csdl/doi/10.1109/ICALT.2005.202

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Sketching the user interface of digital textbooks applied to formal learning environments

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Abstract

Digital textbooks, also known as e-textbooks, have become progressively more present in everyday life, being mostly used by undergraduate students and more frequently used in learning institutions in the US. There is a plausible reason for that to happen mostly in the US, since american publishers have a strong role on biasing those habits by releasing a large number of free access textbooks platforms. However, when students want to read content of a specific course they have to pay for chapters or the entire book content. It becomes important to examine these platforms in order to identify which strategies can be adapted to the formal learning environments using digital textbooks and therefore enhance the learning process.

Previous work focusing in the analysis of digital textbooks platforms allowed to acknowledge a number of key aspects and features that are required when designing these valuable resources for the cited purpose. In this way, it became possible to conceptualize a platform framework and present in this paper a sketch of a user interface which congregates the main resources that aim towards enhancing personal learning environments.

Keywords

digital textbooks, e-textbooks, user interface, teaching and learning technologies, digital educational resources, user experience.

Introduction

As mobile devices with Internet access proliferate, especially tablets, the interest on the use of these in academic context increases. Therefore several initiatives emerge all over the world where the tablet comes to share the space traditionally occupied only by textbooks. "The Toronto District School Board recently announced plans to move to digital textbooks by 2015 (…) Daytona State College, a university of 35 000 students in the US state of Florida, is working towards becoming a 100% e-book campus. Starting in 2009, the university has offered electronic texts for its courses at a price of around USD 20 and offered e-readers at discounts as well" (OECD, 2012). Moreover what

begins to be experienced more frequently in formal contexts is the replacement of the textbook for the tablet. In Portugal, for the first time in history the school year will start with two classes of seventh grade using tablets instead of textbooks. This will happen in a public school in the south countryside of Portugal, where the school principal intends to proceed with the programme as long as students surpass the mid-term evaluations (Séneca, 2013).

About four years ago, Gonçalves and Ramalho (2009), analyzed one of the few resources available as digital textbook, "Manual Digital" (Digital Textbook) as the name suggests is presented to public as a formal alternative to traditional textbooks. These researchers found that the adequacy and relevance curriculum is very well done, since it integrates easily in existing syllabus and provides a logical constructivist learning process. It should be said that the cited software was designed for the first grade and the content was about selection of stories and games, drawings and basic interactivity tasks. Besides these examples, no other resources exist in Portugal that present themselves formally as digital textbooks or e-textbooks.

Now, predicting that these initiatives using computers or tablets in formal learning context will be multiplied, it is pertinent to invest in the conceptualization of tools that facilitate the inclusion of these devices and resources in the classroom. The work presented here, is an approach to the layout and functionalities regarding an interface platform that could match the purpose.

Previous work

This paper presents itself as following the examination of several reading and trading platforms of e-books and e-textbooks. There were fourteen main platforms briefly analyzed along with their most significant solutions and resources in order to find some common features and other distinct implementations that could contribute to the work now presented (Fernandes, 2012).

Most valuable tools and features

Apple iBooks and iBook Author applications have notable features but are distinguished primarily of other resources because they produce moderately closed content in the sense that only Apple devices like the iPad can play such resources. This exclusivity, to some extent, makes these tools and resources less relevant to the present work. Also, “they do not completely contend with the majority of the platforms analyzed because they lack the need to be curriculum oriented” (Fernandes, 2012).

Regarding the other platforms analyzed, and according to Fernandes (2012) cited work, there are some features that need to be addressed and highlighted:

a) The “asterisk” is a utility to mark relevant passages like a bookmark function;
b) The “snap summary” function condenses notes and highlights into one place for further viewing and printing, with filter options, intended to perform a study guide;
c) Embedding Google Docs third-party application;
d) Instant messaging application (with students or instructors);
e) Sharing highlights with students (selected parts of a document);
f) Zooming without losing quality (applied only to text) ;
g) “Following” friends and teachers (like in online social networks as Facebook);

h) Read-aloud text to voice synchronization;

i) Online social network interaction like share with social networks as Facebook and Twitter;

j) Study guides with quizzes and chapter/lessons reviews;

k) Live chat with class or e-mail embed feature to contact instructors;

l) Collaborative study groups;

m) Flashcards/study cards;

n) Search results organized by page order or instances per page (suggesting more instances on each page and/or other relevant search results);

o) "Dual book view" (comparison mode), it opens side-by-side two pages from different books.

It is clear that a considerable number of features rely on Internet access. Some of these are closely linked primarily from activities in the context of non-formal and informal learning, nevertheless, we can question about the use of these addressed to formal contexts.

"MyLib" user interface sketch

The name "MyLib" was assigned to the interface presented in this paper. In the sections that follow a detailed layout and options are proposed as well as planned features.

MyLib application framework

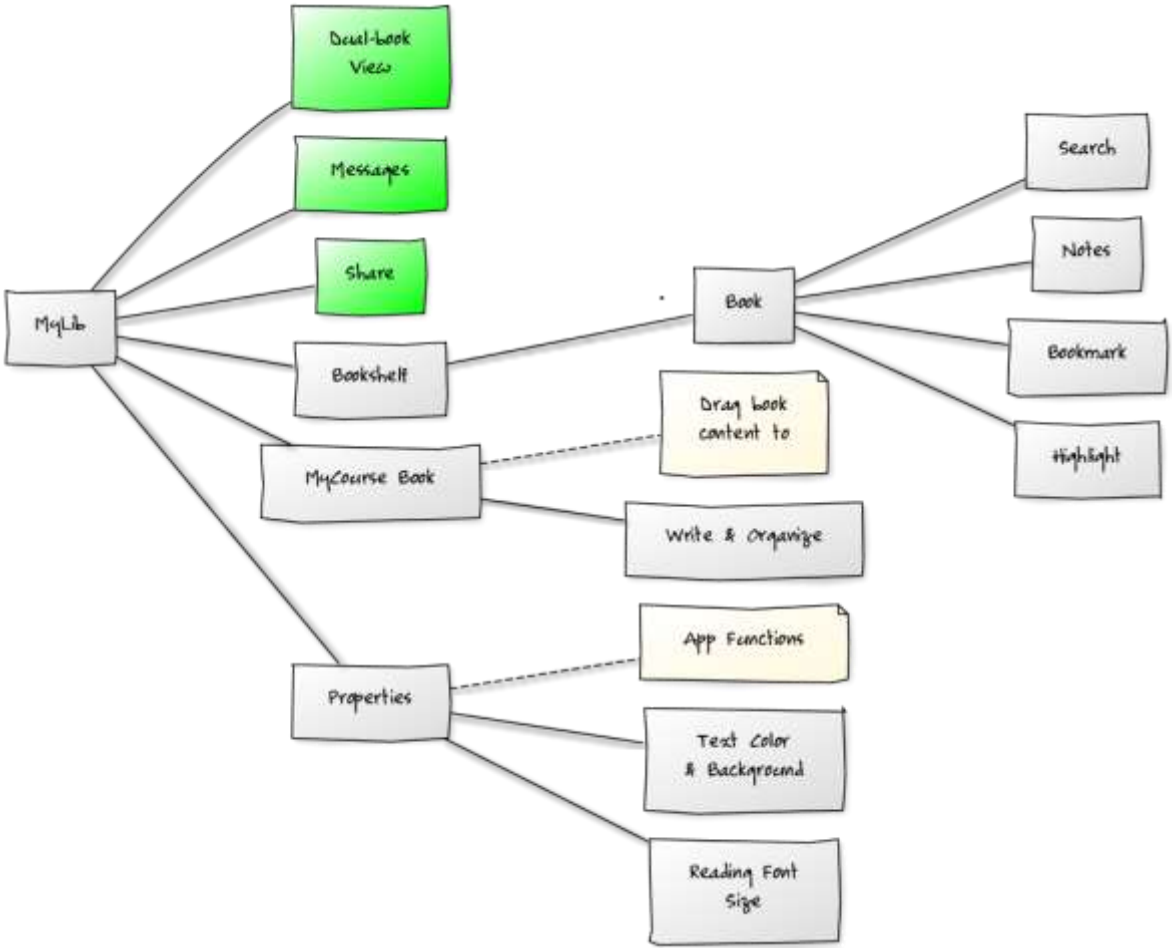

Figure 4 – Application overview

This framework diagram (Figure 1) intents to show the main classes of MyLib divided in 3 main areas and functions.

In "Properties" we have access to reading optimization functions; from the "Bookshelf" we access the "Books" and its content; and from "MyCourse Book" we access the digital exercise book features (produce notes and organize content collected from books). Aside, like independent but complementary features we have "Dual-book" navigation; "Messages" as the messaging center; and "Share" options.

MyLib interface layout

The present interface prototype sketch was developed in high fidelity[14] (look and feel) and as seen in the picture (Figure 2), there are three main areas in the layout: top bar (main reading and auxiliary functions); content (book); and sidebar, where the module "MyCourse Book", as previously described, serves as a repository of content selected from the book, as well as producing additional notes, in order to function like a digital exercise book.

[14] The interactive version of this prototype and details are publicly available at the address: http://www.lmtm.lfernandes.info.

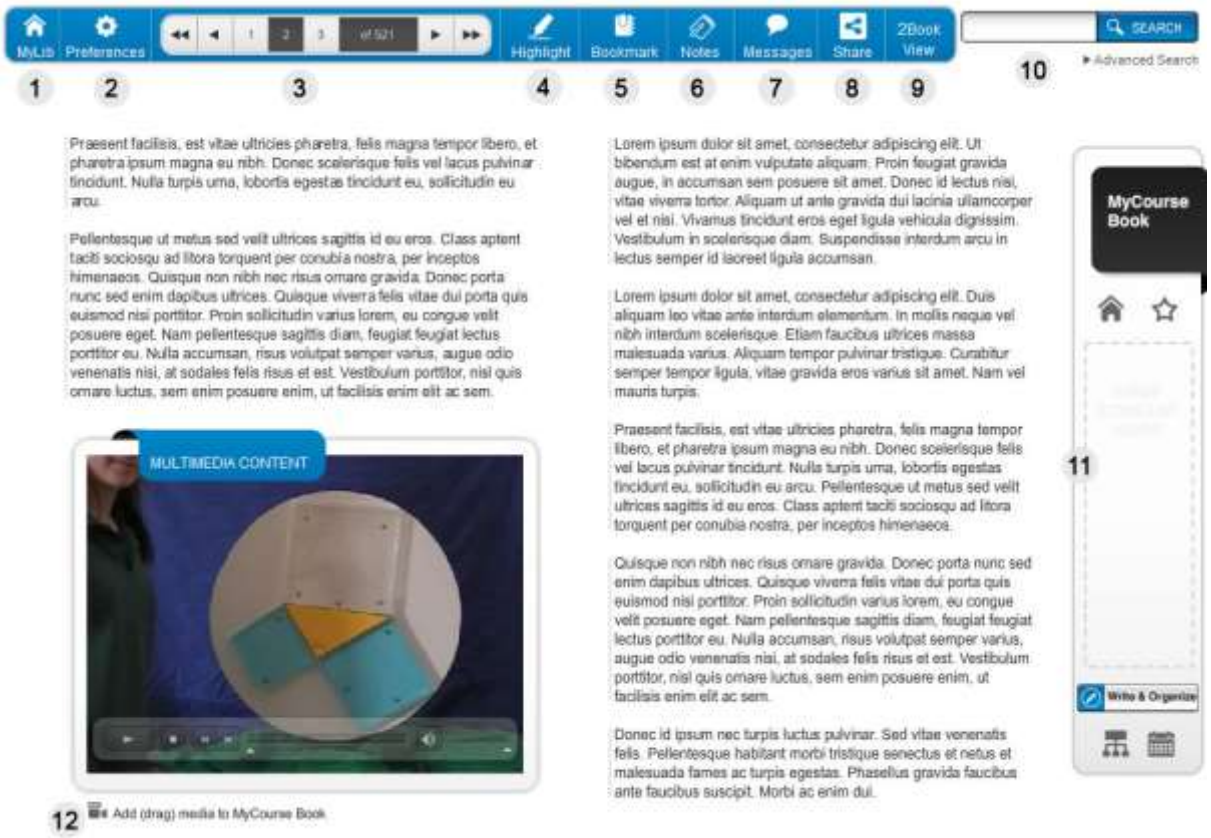

Figure 5 - Reading view layout

In order to identify more clearly what was defined for the interface will be now described the numbered items in Figure 2:

1) Home button where users can access to "Bookshelf" where they find the textbooks;
2) Preferences button that enables options to optimize reading capabilities, like change background and foreground colors;
3) Navigation panel to navigate between pages;
4) Option that enables text Highlight capabilities;
5) Bookmark button to mark and save the state for reading later;
6) Produce instant Notes about the page that user is reading, and automatically adding it to "MyCourse Book" (11);
7) Access to messaging center where users (students) can exchange messages synchronous or asynchronously with colleagues or instructors;
8) Share option enables users to share some portion of text or their thoughts on social networks or blog;
9) Dual book view enables to navigate and compare simultaneously within two different books;
10) Search and advanced search capabilities to look inside the textbook for text or media;
11) "MyCourse Book" area, where any content can be dropped and organized. This may work as the digital exercise book where students can compile and organize the notes taken and the content from the textbooks that they found relevant to some matter;

12) Example of a draggable content, in this case a video, which could be dragged to "MyCourse Book" area (11).

MyLib expected contribution

Lim, Song, and Lee (2011) state that should be examined teachers' acceptance of digital textbooks, their skills for using them, their perceptions about their pedagogical value, and their other views and observations regarding the usability of these tools in order to incorporate the findings into the development of new user interfaces; and to examine design principles with a specific theoretical underpinning, so the findings could be more consistently applied in the design of user interfaces.

MyLib has been proposed as an application interface that brings together the most used and crosscutting features to most applications already on the market, however, the current work intends to result in idealization of a platform to be used in the formal learning context, despite not exclude features with less formal character.

As it can be seen in the online prototype (http://www.lmtm.lfernandes.info), there are innovative features such as the use of colored bookmarks with colors associated to degree of relevance; the proposed integration of ways of communicating synchronous and asynchronous between peers and instructors; navigation mode for comparison in two textbooks, and finally the functionality perhaps more important, the possibility of building a digital and interactive exercise book where the student can thematically organize the information consulted using the resources of textbooks and the notes that he made.

What is now proposed is a dynamic platform with multimedia content, focused on providing the best learning experience to the student. What becomes obvious is that there is an assumption that the digital textbooks are produced in a way that all these proposals are possible to materialize, which is far from being true. That is an effort that will have to be done to massively develop truly digital textbooks with multimedia resources.

MyLib expected technologies

For a more robust and operational solution, it would be prudent to invest in languages and consolidated a framework that allows the desired level of interaction and embedment. The application must also make use of interaction styles already established and revived by new haptic interfaces, where younger learners are very comfortable with. For this purpose, there should be considered the following options:

1) HTML5, due to important features such as:
    a. embed video and audio, high quality drawings, charts and animation and many other rich content without using any plugins and third party programmes;
    b. reduced need for JavaScript;
    c. greater consistency and improved accessibility;
    d. drag and drop tools easier to implement;
    e. offline application cache;
    f. client-side database.

2) CSS3, mainly due to:
    a. easy to achieve multi column layout;
    b. handling multiple background images;
3) EPUB3, due to:
    a. may be a way to integrate e-books on the platform;
    b. uses HTML5 and CSS3;
4) WebKit, mainly due to:
    a. unify, publishing for mobile devices;
    b. uses HTML5 and CSS3.

Ideally, it would be helpful to build a unifying platform, leveraging the use of various devices and the Web. At the same time, the application must be appealing and enhances user experience the best way possible.

MyLib: formal learning and personal learning environment

According to Graham Attwell (2007), Personal Learning Environment (PLE), is not a software application, as a matter of fact, he states that there is no consensus about the best definition for the term, although it is many times associated with Web 2.0 and e-Learning 2.0 (Mota, 2009).

The underlying issue in this work is the adaptability of an application to a formal learning environment so it becomes is important to address some questions centered on the learner and on the learning process. APA (1997) outlines some principles for Learner Centered Approaches for Instruction divided into four different categories: cognitive and metacognitive, motivational and affective, developmental and social, and individual differences.

At the "cognitive and metacognitive" level we may say that some features presented may encourage students to an intentional process of constructing meaning from information and experience. Regarding "motivation and effectiveness" MyLib proposal encourages the search for goals and interests. At the "developmental and social" field we could point the social interaction features and the chat boards as a way of socialize online and communicate with others, with the possibility of strengthening the bonds acquired in the classroom. Finally, the "individual differences" which meets the personal learning environment, as the students can walk their own path at their own pace.

Rockinson-Szapkiw et al. (2013) point out that students who used e-textbooks in the study had higher levels of affective and psychomotor learning. However, they also state that no difference in cognitive learning or final grades suggests that e-textbooks may be a viable option for learning suggesting, that researchers may examine the use of digital resources and choices in textbooks best suited to students' affective, psychomotor, and cognitive learning needs.

While many voices rise to defend the traditional book and textbook, others try to examine the new media in classroom towards new learning paradigms. "Indeed, the introduction of e-book in education could be a jumpstart in promoting highly literate society" (Embong et al., 2012).

Conclusion

This paper should be understood as an introductory study, trying to contribute to a burgeoning research underlying the presence of digital textbooks in classrooms.

As Liesaputra (2012) says "books are arguably the most mature user interface ever devised for presenting information", and the e-textbooks are usually associated with accessibility, mobility, immediacy and space, and to a lesser extent with integration of multimedia elements, legibility, durability and ecology (Arévalo et al., 2013).

The profusion of content, technical advances of the devices, the consolidation of one or more standard formats and conditions of sale (price, copyright) will determine the settlement of the e-Book as a parallel reality or concurrent to the printed book. We must look beyond the commercial indicators and focus the future research on the most important issues related to the adaptability of devices and resources and the well-being of users.

If texts are longer than a page, scrolling and the lack of spatiotemporal markers of the digital texts to aid memory and reading comprehension might impede reading performance. Implementing both reading assessment tasks (i.e., text reading and response tasks) in the same medium – the computer – leads to additional cognitive costs (Mangen et al., 2013).

Digital textbooks are still facing several problems, limitations and constraints as reported by Wu et al. (2007) pointing that a small size of screen is a key limitation to prolonged reading tasks. And the nearly the same is observed by Pölönen et al. (2012) concerning innovative technology in the field of near-to-eye (NED).

The emergence of e-Books as textbooks among the school children requires all parties (i.e. teachers, technologist, parents and even policy makers) to think how to adapt themselves in using e-Book. While e-Book will not replace print books in the near future, it will definitely be used to complement print books. In classrooms, teachers and students will start to value the convenience and accessibility of e-Book. Technologists can expand e-Book usage among a large number of school children through creating awareness of e-Book usability. Parents will be exposed to the latest development in education technology. Indeed, the introduction of e-book in education could be a jumpstart in promoting highly literate society. (Embong et al., 2012).

References

APA Work Group of the Board of Educational Affairs (1997). Learner-centered psychological principles: A framework for school reform and redesign. Washington, DC: American Psychological Association.

Arévalo, J. A., García, J. A., Díaz, R. G. (2013). Estudio sobre el uso de los libros electrónicos en las bibliotecas universitarias de Castilla y León, BiD: textos universitaris de biblioteconomia i documentació, June, N. 30.

Attwell, G. (2007). Personal Learning Environments - the future of eLearning ? 2, January, pp. 1–8.

Embong, A. E., Noor, A. M., Hashim, H. M., Ali, R. M., Shaari, Z. H. (2012). E-Books as Textbooks in the Classroom, Procedia - Social and Behavioral Sciences, Volume 47, 2012, pp. 1802-1809.

Fernandes, L. (2012). Digital Textbooks Platforms: Trends and Technologies, Proceedings from II

Congresso Internacional TIC e Educação, pp. 3191-3211

Gonçalves, D. and Ramalho, R. (2009). Desenho, Criação e Avaliação de Conteúdos Pedagógicos Multimédia para o 1º Ciclo do Ensino Básico, The 10th International Conference on Textbooks and Educational Media, pp. 193-198.

Johnson, M. and Liber, O. (2008). The Personal Learning Environment and the human condition: from theory to teaching practice. Interactive Learning Environments. 16, 1, April, pp. 3–15.

Liesaputra, V., Witten, I. H. (2012). Realistic electronic books, International Journal of Human-Computer Studies, Volume 70, Issue 9, September 2012, Pages 588-610

Mangen, A., Walgermo, B. R., Brønnick, K. (2013). Reading linear texts on paper versus computer screen: Effects on reading comprehension, International Journal of Educational Research, Volume 58, 2013, pp. 61-68.

Mota, J. (2009). Personal Learning Environments: Contributos para uma discussão do conceito. Educação, Formação & Tecnologias. 2, pp. 5–21.

OECD (2012), E-books: Developments and Policy Considerations, OECD Digital Economy Papers, No. 208

Pölönen, M., Järvenpää, T., Häkkinen, J. (2012) Reading e-books on a near-to-eye display: Comparison between a small-sized multimedia display and a hard copy, Displays, Volume 33, Issue 3, July 2012, pp. 157-167.

Rockinson-Szapkiw, A. J., Courduff, J., Carter, K., Bennett, D. (2013). Electronic versus traditional print textbooks: A comparison study on the influence of university students' learning, Computers & Education, Volume 63, April 2013, pp. 259-266.

Séneca, H. (2013). Todos os livros no tablet, EXAME Informática, N. 219, September 2013, pp. 78-79.

Wu, H., Lee, C., Lin, C. (2007). Ergonomic evaluation of three popular Chinese e-book displays for prolonged reading, International Journal of Industrial Ergonomics, Volume 37, Issues 9–10, September–October 2007, pp. 761-770.

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Keeping up with innovations

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In 1996, four years after the first widely used web search engine came into being, Manuel Castells published his prophetic and enormously influential 'The Rise of the Network Society' in which he observed a the beginnings of a very different basis for the development of society as it moves into an information age. This information age is characterised by the primacy of knowledge but also by a very different politics of knowledge. Gone are the old knowledgocracies of libraries, teachers and savants rationing and controlling access to knowledge. The current generations have grown up with relatively free and open access to knowledge; with greatly expanded social networks and a new conceptions of learning based on connectivism coupled with increasing reliance on peer support and a 'just-in-time' rather than 'just-in-case' attitude to knowledge. The technological changes, nascent at the time of Castell's writing, now fully support this new model of autonomous and peer-oriented learning. The financial stresses and strains the global economy has been through the last years have reinforced a trend which was already surfacing for other reasons - a questioning of the value of formal education and rising expectations on the quality of higher education generally.

Against this background, it is not hard to understand the headline "*the End of the University as We Know It*' in January's *American Interest.* A few years after Castell's work Clayton Christensen published 'The Innovator's Dilemma' picturing waves of disruptive innovation moving through such industries as publishing and music. Many see the rise of Massive Open Online Courses (MOOCs) as evidence that such a period of disruption has arrived in higher education. MOOCs are new. The most prominent MOOC, Coursera, was founded last year by Daphne Koller and Andrew Ng out of Stanford University USA. Within twelve months it has garnered over 4 million adherents and played a part in the new education revolution.

The University of London International Programmes launched four courses on the Coursera platform in late 2012 and started these courses with over 200,000 registrations in June this year. The courses last 6 weeks and are free with no entry requirements. Why did London decide to do this? The International Programmes are not new and have been existed under their former designation as the University of London External System since 1858 when they were as pioneering as MOOCs are today. The International Programmes currently have 54,000 students studying in over 180 countries and are a low-cost way of acquiring a prestigious degree wherever you are in the world. The International Programmes has found MOOCs interesting for a number of reasons. Firstly, the Coursera platform gives us access to a large number of people interested in furthering their education in innovative

ways. But also, MOOCs are interesting because they offer ways to experiment with providing an enhanced but affordable learning support for distance learners. As an access-oriented set of programmes we are always interested in how to provide more pedagogic support in such areas as formative assessment at low cost enabling to keep our fees to students as low as possible.

Are MOOCs going to sweep away traditional universities? I personally doubt this very much and despite some momentous headings in the press along these lines the majority of media coverage and critical analysis sees no immediate major threat to traditional universities particularly at undergraduate level where the vast majority of students look for a traditional campus experience with close support and a strong social component. It's worth noting that the majority of MOOC participants already have a first degree and many have a second or third. However, it is also clear that this picture is changing. Young gifted students at school are taking extra degree level studies to supplement a curriculum that doesn't sufficiently challenge them and an increasing number of entry level courses are appearing in MOOC format. One of the potentially most significant changes that MOOCs have brought to higher education is a change in expectations. When you can tune in for free to a world-leading academic walking you through the essentials of micro-economics, why would you want to spend time at the lecture provided by your local college on the same subject? Many universities are taking this on board and are experimenting with pedagogic approaches that include MOOCs and use the class time to analyse and discuss - the so-called 'flipped classroom' model.

Another interesting aspect of MOOCs is the strong level of interest in countries such as India and Brazil. India is one of the top users of MOOCs and this may be an indication of changing attitudes to distance and flexible education in a country with one of the biggest open learning universities in the world but a great degree of ambiguity about this form of learning. India is often cited as the country with the greatest likely increase in students entering higher education over the coming years and where the supply - demand equation is likely to be under greatest strain.

Many critics see MOOCs as a 'flash in the pan' and point to the lack of clear purpose, business model and pedagogy. It is true that despite considerable experimentation in business models that match free aspects of learning to paid for access to certification and credits no winning model has yet emerged. Other potential business models involve potential employers as paying users of MOOC databases and there are a variety of other experiments going on. This is likely to be a fast-moving environment. Critics also stress that the pedagogic approach of most MOOCs is based on cognitive-behaviourist principles that have been the mainstay of pedagogy for decades and represent nothing new or revolutionary at all. This may well be true but may not remain so as MOOCs are rapidly evolving with features such as peer assessment on a large scale increasingly playing a part. We also see some work on connectivist MOOCs harnessing social media to play out learning through diverse and fluid networks. The work going on in MOOCs represents an enormous educational laboratory which is producing massive datasets which are themselves staring to feed back into the pedagogical models producing innovative designs with the holy grail being a learning experience that is tailored around each individual's needs and adapting itself as the learner moves forward.

Personally, I see two very clear advantages to MOOCs. One is the 'just-in-time' nature of learning making it easy to learn a skill or area of knowledge at a time when it will most benefit the learner. Secondly, the MOOC movement seems to be encouraging multi-disciplinism where it has become easier to take a course in philosophy alongside one in computer programming. In a world where the majority of innovation is at the boundaries of disciplines this could help bring significant change to society.

The University of London International Programmes publishes the report on its MOOCs on Monday 4th November and these will be available on the website http://www.londoninternational.ac.uk/.

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From on-campus to online distance education: a three-dimensional perspective: International market, institutional policies and implementation.

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Abstract

The TU Delft has the ambition to transform a considerable number of its masters programmes into an online distance learning (ODE) model. This paper will discuss these developments from three perspectives: a) the market for online education and rapid changes, b) the policies of TU Delft including its high ambitions for the coming years and c) a description of the on-going pilots including the first's results: what does it mean to start with online distance education from the perspective of the shop floor (lecturers and supportive staff)? Which hurdles have to be taken?

1. Introduction

Delft University of Technology (TU Delft) - the oldest university of technology in the Netherlands- has over
18,000 students on-campus from all over the world and offers 15 BSc and 33 MSc degrees. However, it also wants to be a forerunner in the field of Online Education in order to offer the expert knowledge of TU Delft to a wide audience of students worldwide. The TU has therefore the ambition to transform a considerable number of its masters programmes into an online distance learning model. From the start of this academic year (2013/14), three different pilots started. The pilots comprise courses in Aerospace Engineering more specifically Aerospace Structures & Materials (ASM), Civil Engineering, more specifically Water Management (WM), and Engineering and Policy Analysis (EPA).
Also with respect to open education, the ambitions are high.

This paper will look at this process in a nutshell from three perspectives ('macro-meso-micro'):

a) the international market for online education (paragraph 3)
b) the institutional policies of the TU Delft (paragraph 4) and
c) a unique insight into the implementation of on-line distance learning pilots including observations on lessons learned so far (paragraph 5).

2. Definitions

In this paper we will use the following two distinctions defining:

- *Open Education* (OE), which refers to all educational information freely available (no costs) on the Internet. This may range from downloadable content (such as iTunes U content, digital textbooks, and video or audio materials) through informal teaching such as MOOCs. ´Open´ means that it is *for free*. Students may receive a certificate but this not a formal document and does not include grading. Normally, there is no or very limited interaction with the teacher.
- *Online distance education* (ODE), which refers to fully structured online courses that include direct interaction with the teacher, assessments and the awarding of a qualification. Students have to pay a *fee.*

The following table gives an overview of the different types of education and their characteristics.

Table 1: overview different types of education

	Traditional	**Open Educational Resources (OER)**	**OE**	**ODE**
Access	Tuition fee	Open	Open	Tuition fee
Student Interaction	Yes, mostly offline	No	Yes, online learning platform & social media. Also peer review	Yes, online learning platform & social media
	Traditional	**Open Educational Resources (OER)**	**OE**	**ODE**
Interaction with lecturers	Yes	No	Limited, often only indirectly	Yes, online learning platform & social media
Exams	Yes	Self-testing only	Yes, self-tests with automated feedback	Yes (sometimes on campus)
Certificates	Yes, accredited	No	Yes, but not accredited	Yes accredited
Diploma	Yes accredited	No	No	Yes, accredited

However, in practice the boundaries between the different types of education are not so strict. In fact, there is an increasing overlap. *This will also have implications for the higher education landscape*. We will elucidate this in the next paragraph.

3. Market for online education

3.1 Introduction

Before embarking on the online distance education market TU Delft desired a thorough overview of the market. That is why TU Delft asked the consultancy firm Capgemini Consulting to make an assessment of the market for – and developments with respect to- ODE and OE, i.e. from the perspective of non-profit universities. In their report dated November 2012 they addressed the current market, the different business models, career prospects and the influence of Open Education. Paragraph. 3.2 and 3.3 reflect or quote- the main findings of their report.

3.2 Market scan and business models for ODE

Market scan ODE

The market for ODE has been growing substantially for over a decade. In the most mature online education market, the United States, more than 30% of all students currently enrolled in a formal degree programme follow at least one course completely online. It is expected that this number will continue to grow in the coming years, especially in the emerging economies since they will experience a surge in the number of students seeking high quality higher education. The ODE market has been dominated in the last decade by for-profit universities, offering predominantly career-oriented courses and (graduate degree) programmes to adult learners.

The academic quality of online education has been much debated though. *Recently high ranked non-profit universities have started investing substantially in online education as well*. They offer blended or online- only degree programmes to both distance learners and on-campus students. Because of their higher academic reputation, these universities have seen significant growth in student enrollments in online programmes and have quickly gained market share at the cost of the for-profit universities. This development has contributed to the improvement of the reputation of online education. The tuition fees for online education offered by for profit universities are usually in the same price range as on-campus fees.

Business Models for ODE

The above-mentioned report makes a distinction between 3 business models: *Elite, Standard and Hybrid,*

depending on the type and scale of the student population the university aims to serve.

A. The ‘ Elite business model’ promises students ‘best in class academic degree programmes for small groups with personal faculty-student and student-student interaction’. This model focuses on maximizing the match between the experience in online courses with that of on-campus classes and activities. Most courses and programmes have a maximum enrollment not exceeding 50 to 60 online students per graduate degree programme. This limits the possibilities of large-scale growth and the reduction of production and delivery costs through scale and standardized course delivery.

B. The ' Standard business model' for online degree programmes promises 'affordable professional education with maximum flexibility and support for independent self-study'. The online programmes and courses are designed for maximum flexibility for large groups of students and are therefore highly structured. The focus in this model is on growth and cost reduction. Content creation and delivery are highly standardized and the support organization is large and focused on recruitment, 24/7 online support and other services for the online distance learners.

C. The ' Hybrid business model' tries to combine the high quality and selectiveness of the Elite model with the scale advantages of the Standard model. To achieve this, high ranked selective universities have partnered with online enablers for the production and delivery of online degree programmes. These partners provide support for the production of content and for the delivery process of the courses. These universities profit from the experience of these enablers in the for-profit market segment. Because of the larger scale, usually reached by offering a wide range of courses and programmes with student enrollments that can scale to a couple of hundred students per programme, a reasonable amount of standardization, differentiation in roles of lecturers and tutors, and centralization of the back-office processes is needed

Career prospects
Online education is – same as on campus education- all about enhancing career prospects. Undergraduate students more often desire to change careers, whereas graduate students more often sought advancement in their careers. Factors that influence the selection of a specific university are – not surprisingly – reputation, costs and quality.

3.3 Open Education and the potential impact on online education

However, next to online distance learning recently a trend has started to develop in the form of Open Education: Higher Education open for all and for free. In this paragraph we will discuss OE and its impact on online distance education.

Open Educational Resources and Open Education are booming!
Since MIT initiated OpenCourseware in 2001, the number of courses published as OpenCourseWare (OCW) has grown to over tens of thousands. You Tube, iTunes U, Khan Academy (http://www.khanacademy.org/), TEDx (http://ed.ted.com/) and many other organizations have created special channels for education with a large variety of video's, presentations and other course materials.

Figure 1: Screenshot African Health OER network http://www.oerafrica.org/;. The mission of the Network is 'to advance health education in Africa by using open educational resources (OER) to share knowledge, address curriculum gaps, and support communities around health education.'

There are OER networks all over the world. A great example within the framework of development cooperation is the African Health OER network.

However, especially MOOCs (Massive Open Online Courses) are a novelty in the history of education. Media coverage has been tremendous. Since the first official MOOC launched by Stanford University on Artificial Intelligence in 2011, MOOC-platforms and initiatives grow and grow. There are many types of platforms: national, multi-national (like OpenupEd http://www.openuped.eu/), private (for example Udacity /https://www.udacity.com), hybrid (cooperation between companies and universities) and joint forces of universities with a very high ranking (like edX, www.edx.org/). There are also different type of MOOCs - which we will not discuss here- but a lot of attention is generated by the fact that many MOOCs attract a very huge number of students, more than any professor will be able teach on campus during his whole career. Moreover, most MOOCs are provided by leading experts in their field.

As a result of the MOOCs, new business models for the distribution and use of online courses are emerging. For example, some successful MOOC-platforms have very recently partnered with (lower ranked) universities to offer students the possibility to convert non-formal MOOC certificates into formal credits for regular degree programmes. For governments it might be very interesting to invest in MOOCs in order to reduce the costs of education on the one hand and improve the accessibility and quality on the other hand. However, it might also change the whole higher education landscape, especially if MOOC's will lead to credits. This is illustrated by the following quote from **'Trend report Educational resources 2013'.**

'Supply and demand for open education can be expected to rise enormously in the next few years. Non-formal certificates are increasingly being offered. Technology provides more and more options for secure testing, either at examination centres or at the candidate's home. This will make accepted and validated open education certificates increasingly realistic.
Once the certification hurdle has been overcome, the next challenge will be to gain recognition by the education sector and the business community. How can the many different types and contents of open education be made comprehensible so that there is a reliable possibility for comparing and accepting them, for learners, the education sector, and the business community?
If this can be achieved, then it will bring about drastic changes in the education landscape. Learners will then be able to put together "learning packages" more flexibly. This is an irreversible trend, and higher education institutions will therefore need to consider the role that they can and wish to play in the world of open and online learning. The question is whether, given these trends, the business model of traditional higher education institutions is still tenable. What the learner of the future will ask is "What do I need in order to gain a particular diploma, and what free open online learning

module or test can enable me to achieve that objective?'

Although some experts talk about the next revolution in education, it is too early to draw definite conclusions. Some people argue, for example, that especially the brightest and most motivated students will really benefit and that the majority of the other students will need the campus type of support and guidance. OE is definitely the 'flavor of the month'. One of the implications is that the difference between ODE and OE is not so clear for many students ('why should I pay if I can get it for free'). One trend is already emerging: it enhances competitiveness and increase price-pressure among providers of ODE.

4. Policies TU Delft

4.1 Introduction

As said before TU Delft has always been attracted to offering their education to an as wide as possible audience. As a result of this ambition in 2006, the TU Delft made the decision to start with OCW following the example of MIT. In 2007, the first courses were published online as OCW. In 2009, The TU Delft also decided to become a sustaining member of the OpenCourseWare-consortium.
Since then, the TU Delft has always been very ambitious when it comes to OER, OE and ODE.

Figure 2: TU Delft library, source : M&C TU Delft

4.2 Policy plan

In the ICT in Education policy report titled *'the next step'* (approved in 2011), focal points were – among other things - OE and ODE. Within the framework of this report a business plan for OE and ODE was formulated. The general conclusions of this business (international developments) have been highlighted in the previous paragraph. As a follow-up to the business plan, a workshop was organized in January 2013. During this workshop, the ambitions for the coming years have been formulated as follows:

- When it comes to ODE, the ambition is to offer a number of online Masters by 2016. Moreover, in 2020 every world class course and programme that can be offered online, should also be available online for on- campus and distance learning students. For ODE, the TU Delft will follow the 'elite model' as described in paragraph 3 (high reputation, limited access, high fees). This also fits with our model that education and research go hand in hand.
- When it comes to MOOCs, the TU Delft wants to be an early adaptor. TU Delft will offer 4 MOOCs on the high profile EdX platform (https://www.edx.org/school/delftx/allcourses) in 2013/14 in fields in which we have a worldwide reputation.

For both ambitions, a roadmap has been designed on the basis of the discussions during the workshop; this roadmap also clearly describes the changes required in the back office (IT-support, marketing, library services, etc.).

The main motives for our ambitions and policies are as follows:

- *Idealistic.*
  Offering online courses or a complete online graduate degree track provides the opportunity to share valuable academic knowledge with parts of the world (especially underdeveloped regions of the world) that need it the most and do not have access to high quality higher education.
- *Strengthening brand / world class reputation / online.*
  By offering online courses or complete online-only graduate degree programmes for distance learning students we enhance our visibility and leading position in this academic field.
- *Quality:*
  New course material for the online-only degree programmes gives us the opportunity to innovate our courses.
- *Enhancing flexibility and attracting more international and talented students.*

Especially for MOOCs:

- Reaching new and unprecedented numbers of global students for the academic niches where the TU Delft is a global leader.
- The chance to generate new revenue streams for MOOCs produced by the TU Delft once a new monetization strategy succeeds.

For the TU Delft, there is a strong sense of urgency. OE and ODE will change the higher education landscape and the business models one way or the other as described in paragraph 3. TU Delft wants to be a forerunner and a global player. This also means that targets keep moving.

4.3 Selection of ODE-pilots

Within the framework of the TU Delft policies described above funds (subsidy for faculties) have been
allocated for pilots with ODE. In addition, a central support team was formed for both ODE and OE (headed by an expert in E-learning) focusing on all aspects affecting the supporting services within the university: from ICT to Administration and from Finance to Legal.

In 2012, three ODE –pilots were selected: the MSc track *Water Management (MSc Civil Engineering), the MSc track Aerospace Structures & Materials (MSc Aerospace Engineering), and the MSc degree in Engineering & Policy Analysis*

Figure 4 : Screenshot Website http://www.tudelft.nl/en/study/online-education/online-distance-education/

In the next paragraphs we will discuss two ODE-pilots from the perspective: what does it mean to go from policy to implementation?

5. From policy to implementation

5.1 introduction

In this part of the paper we will focus on the ODE-pilots and on our experiences so far from the perspective of the shop floor. The first part deals with the starting points of the ODE-pilots. The next paragraph will briefly describe the ASM and EPA pilot. In paragraph 4.3 we will reflect on the experiences and issues encountered in these two pilots. For both pilots a subsidy of K€ 100 each was available for the production of 5 - 6 online courses (each 5 ECTS) in 2012/13 and the actual delivery in 2013/14.

5.2 Starting points

The starting points for the design of the pilots with ODEs were:

- Online & on-campus education is exactly the same (content and time schedule). Online and campus students have to meet the same learning objectives with the same quality but the way the learning objectives are achieved differ for campus and online students.
- Our target group also consists of professionals. The idea is that they interact with campus-students within assignments and in the online learning environment ('collaborative learning'). The implementation will differ per track. The assumption is that campus students have a fresh understanding of theories and that professionals have far more experience with trying to solve actual problems. Our aim is thus to create a win-win situation.
- The courses will also be published as OCW (to show the quality of the courses and to attract students).
- A fee of € 200 per ECTS. This fee corresponds (relatively) to our tuition fee for our 'regular' masters.
- A dedicated central support team (without additional costs for the faculty) headed by an e-learning expert. An enthusiastic team of lecturers.

5.3 Description of pilots

5.3.1 ASM-pilot: short description

Historically, ASM is one of the oldest departments at the Faculty of Aerospace Engineering going back well over 65 years. Its corresponding master track programme attracts 50 – 60 new students on a yearly basis with numbers on the increase. The ASM-track is designed for students who are interested in the Design, Manufacturing and Analysis of Aerospace Structures and Materials and its graduates typically work in the structural design & manufacturing departments of large aircraft manufacturers, but also in the offshore and space industry. A second group of graduates uses their knowledge in aerospace to start spin off companies employing aerospace materials and techniques in other areas. The employability of the students is extremely high. In the Track, about 35% of the students come from abroad from all over the world. Next to that the department is often asked to teach specialist courses to industry professionals and it also attracts many exchange students each year.

Given this external demand, as well as the strong tradition in trying out new educational methods of delivery, it was decided to take part in the pilot. Its staff is highly motivated and enjoys trying new things in their teaching. It was decided to first focus on the more theoretical courses within the track with a view to slowly expand the number of courses and as well as developing lab works.

Box 1: Description ASM online courses (www.lr.tudelft.nl/ASMonline)

A total of 6 courses have been developed as part of the pilot. The courses are:

- *Buckling of Structures:* This mechanical failure mode is particularly critical in thin-walled structures and is of high interest to many aerospace and other lightweight structures designers
- *Advanced Structural Analysis:* This course educates the student in the world of thin-walled structural analysis focusing on the calculation of deformations and stresses. The course builds up a solid foundation in structural mechanics by covering the basics of strain, stress and virtual work and applying them to plate and beam problems.
- *Introduction into Adaptive Aerospace Structures:* This course introduces the student to the application of adaptive structures in the aerospace world. This type of structure is becoming more and more used in military and civil aerospace applications and promises to enhance the efficiency of aerospace structures.
- *Structural and Non-linear structural modeling:* both courses focus on Structural Modeling covering first the basic theory of the Finite Element Method (FEM), considering static and dynamic analyses, and secondly the basics of non-linearities in the Finite Element Method (FEM), considering static and stability (buckling) analyses.
- *Advanced Design Optimization of Aerospace Structures:* A course in which the student will learn how to design and optimize a composite structure by analyzing the different failure modes that can occur.

More details on the pilot can be found in Saunders-Smits et al. (2013)

5.3.2 EPA – pilot: short description

The on-campus EPA master (duration 2 years) attracts around 40 new students a year. The study is designed for students who have a background in engineering but aspire a career in management and governance. EPA has a very strong international orientation; 85% of the students come from abroad, half of them from Asia, Africa and Latin America. EPA is also offered as a double-degree programme with the Harbin Institute of Technology (HIT) in China. EPA is also partner in the Erasmus Mundus programme on Economics and Management of Network Industries (EMIN).

These online courses jointly form the 'policy track'. The courses will be offered by staff members from two different sections within the Faculty of Technology, Policy and Management: Policy Analysis and Sustainability.

Most of the challenging issues faced by society today cannot be solved by technology alone. Engineering excellence must be coupled with insight into societal needs and the mastery of project and process management tools. Solutions require collaboration both across disciplines and across national and cultural boundaries. Political, moral, cultural and socioeconomic considerations are crucial to the decision-making process. The Master's programme in Engineering and Policy Analysis (EPA) deals with these issues. Multi-actor perspectives, stakeholder management techniques, adaptive policymaking, exploratory modeling and how to deal with deep uncertainty are all part and parcel of EPA.

Box 2: Description online EPA-courses (http://www.tudelft.nl/en/study/master-of%20science/master-programmes/engineering-and-policy-analysis/online-distance-education/).

From September 2013 TU Delft will start offering an online coherent package of 5 courses in the field of policy analysis. The courses introduce students to the complexity of developing and defining policies and sustainable solutions for the challenges of tomorrow. The courses are:

- *Principles of Policy Analysis.* This course is about techniques and conceptual models to analyse and clearly define problems, to identify potential solutions and to compare them.
- *Continuous Systems Modeling.* This course introduces the System Dynamics method for modelling dynamic and multi-actor systems.
- *Policy and Strategy Models.* This course is an introduction to game theory. Game theory is a leading analytical perspective for understanding the diverse phenomena which occur when decision-makers interact
- *Policy Analysis of Multi-actor Systems.* In this course students learn how to deal with complex problems in multi- actor environments
- *Technology Development & Impact Assessment.* This course aims to give students insight in the dynamics of technology development in a societal perspective and methods to assess and deal with the impact of new technologies.

5.4 Reflections and Lessons Learned

Halfway the implementation of our pilot we may draw the following initial conclusions:

1. *Online education does indeed lead to higher quality*
   Online education means that you have to rethink your education. All materials have to be clear, to the point and concise (our experience shows that a web lecture of around 15 minutes is similar to a traditional lecture of 45 minutes in a classroom!). You can no longer rely on the way you always taught your course. Our experience is that the redesign of courses had indeed a very positive impact on the quality of the courses, also for on-campus students. This is acknowledged by the lecturers involved. Among other things, we have recorded a large number of high quality 'snippets' (knowledge clips). We will, for example, also publish an e-book in field of continuous systems modelling as a result of the pilots.

2. *Enthusiasm of teachers is essential to cope with the workload*
   The courses will be up and running in 2013/14. However, managing the workload is extremely difficult. We supported lecturers by means of student-assistants but this only partly solves the problem. There are many priorities. Crucial is that the lecturers believe in online education and 'go for it'.

3. *Steep learning process*
   Lecturers undergo a steep learning process. How do I flip a classroom (suddenly you have write scripts, and prepare auto cue's, learn new computer programmes and think how you'll look on TV!).How do I motivate online students? How do I organize online assignments? How much time do I want to be available online for discussions with students? How do I organize Q&A sessions with students? How do I organize and monitor

group work?

4. *Each course has its own unique set up and challenges.*
   For example, what is the best way to digitalize a ASM-course which were previously taught with the use of chalk deriving equations on a traditional blackboard? Different methods were tried and tested in the first year when we trialed our online endeavors on our own students. The solution was to record videos and demonstrations by a combination of Media desktop Recorder, Smart Paper and Smart Board presentations in TU Delft's dedicated Audiovisual Facilities. All examinations take place via digital submission but where necessary we will also use online oral examinations.

5. *Open or online: what is the difference?*
   We noticed that the distinction between OE and ODE education is often not clear for all internal and external stakeholders (including prospective students). Especially since the beginning of this year, we noticed that OE (i.e. MOOCs because of the unprecedented enrolment figures) is much higher on the agenda of managers than ODE. We also notice that students get confused: why should I pay if I also can get it for free? As mentioned in paragraph 3 we may have to rethink our business model.

6. *Quality of ODE*
   Be prepared for discussions about the quality of online education in comparison with on campus. There is still some scepticism among staff about the quality of ODE (in paradox with observation # 1!).

7. *Involve the Examinations Committee directly from the start*
   A flaw in our approach was that the fact that we involved the 'examinations' committee too late in our ODE-efforts. Secure tests for online students for an accredited degree is still a hot potato in our discussions.

8. *Involve marketing in an early stage*.
   Marketing ODE for a diffuse target group is far more complex that marketing efforts for our traditional students who know how to find their way to Delft. This is also ad steep learning process: what works, what doesn't work?

Figure 5: Online courses & didactics
Source: http://www.flickr.com/photos/gforsythe/5552385806

9. *Low hanging fruit*
   Try to look for low hanging fruit during your pilot when it comes to your target group.
   Is there a clear target group who is waiting for your online education and willing to pay (individuals or companies)? Knowing your target group will also facilitate the evaluation.

10. *Be modest in your expectations for the enrolment in the courses during the first year.*
    In line with the above, our target groups do not automatically associate TU Delft with online learning. This will take time.

11. All in all we found that what is important to students is that lecturers remain authentic and

that the technology works.

12. *Last but not least: Invest in a learning organization!*
    Developments and ambitions in OE and OE are going very fast as described in paragraph 1 and 2 of this paper. Targets of administrators keep moving. Some flavors of the month remain, some disappear. As indicated before, it is not too hard to predict that business model will change but the way how (and how fast!) is very much open to debate.

6. A final remark

From all this you may wonder if we feel we should continu developing online courses. The answer to these questions is a resounding yes! Of course we should! Over the past year we have witnessed a flurry of activities in which staff and students alike come together to improve education. This project at its very worst firmly lays the foundation for high quality 21st century engineering education at its best we will be able to offer top-notch education to a large worldwide community.

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References

Internal documents

1. TU Delft, Policy document 'the next step', ICT in education policy 2011 – 20141
2. Capgemini Consulting; *Business Plan Delft Online Education*, November 2012
3. *Report on Acceleration Workshop TU Delft Online Education Strategy*, January 2013
4. Enserink, B, & Groot Kormelink J.B.J; . Project document *Collaborative online learning in the field of policy analysis & modelling; January 2012*
5. Dopper, S & Mebus, L; *Didactical starting point for Delft Online Distance Education*; concept April 2013

External references

6. Academic Partnerships; *A Guide to Quality in Online Learning* (not dated but published in May 2013) http://www.academicpartnerships.com/docs/default-document-library/newbooklet15_singleb.pdf
7. Gagné's Nine Events of Instruction (http://academics.georgiasouthern.edu/col/id/gagne_9_events.php)
8. Jacobi, R., Jelgerhuis, H., Van der Woert, N. (2013). Trend Report: Open Educational Resources 2013; Surf, Utrecht, March 2013. (http://www.surf.nl/en/publicaties/Pages/Default.aspx)
9. Mebus, L. Ouwehand, M, van Zijk, R: Step-by-step plan for producing video for *online distance learning; May 2013*
10. Salmon, Gilly. (2011) E-moderating. The key to teaching and learning online. Routledge (3rd edition) , November 2009 (http://elearningcyclops.wordpress.com/2009/01/29/using-gagnes-9-events-of-learning-in- e-learning/)
11. Young, J. (2013). Georgia Tech to Offer a MOOC-Like Online Master's Degree,at Low Cost. The Chronicle of Higher Education. (http://chronicle.com/article/Ga-Tech-to-Offer-a-MOOC-Like/139245/)
12. Saunders-Smits, G.N., De Breuker, R., Mebus, L.F.M., Hol, J.M.A.M., The First Steps towards an Online Master in Aerospace Engineering, Proceedings of the 41th SEFI Conference, 16-20 September 2013, Leuven, Belgium

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EU-law-drafting, a simulation through active e-learning

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Abstract

The theme of this contribution is the design of a web based project for training students in drafting adequate EU-legislation. Didactical and educational principles and goals of the project will be explained. As the idea and design are based on experiences in developing and teaching a course in drafting domestic legislation, this paper will start by going into the domestic course and will describe the lessons learned.

For the 4th Conference on Law Education and ICT for lawyers and political scientists at the UOC, the Open University of Catalunya, in Barcelona in June 2013, I wrote a paper[15] and gave a presentation on experiences and ideas for the new project. I have been developing the ideas further since and now a model for the new course is presented in this adapted paper that can be discussed by the broader audience of the EADTU Conference 2013.

The new course aims at training law students living in various EU member states, via active and collaborative e-learning in the making of European legislation. This will be done in a setting simulating the real EU legislative process. Before the actual simulation, participants will be prepared for the actual making of EU legislation through assignments with peer and tutor's assessment. Students will have to act in the roles of the EU-Commission, of political groups in the European Parliament and of the Council of the EU. They have to do research and design components of a regulation or directive. Afterwards they will have to discuss the proposed legislative act in simulated plenary debates. All assignments and the debate will be done through the website and are debated in a virtual classroom. Students will obtain juridical as well as political and communicative knowledge and skills that lawyers need. ICT provides opportunities to teach these competences through distance teaching and to let students learn in groups from and with each other and their teachers, regardless of time and location.

7 Capitulo 11 in Agustí Cerrillo i Martínez , Ana María Delgado García (Coordinadores), (2013)

The new course could be characterized by the keywords:

- Active learning
- E-learning
- Collaborative learning
- Student from various EU countries
- Virtual platform
- Simulation
- Learning assessment
- EU legislation

1. INTRODUCTION

Around the turn of the centuries, at the Law School of the Dutch Open University we came to realise that besides the more or less traditional education in the theory of the different law disciplines, we should also prepare our students for working as academic lawyers by training them in academic legal skills.

This awareness was also stimulated by developments in educational science that focused on competencies in the education of academics[16]. Thus I thought it might be possible to integrate my former experiences as a legislation lawyer at a Dutch ministry in my work as a constitutional law teacher. I designed a legislation course in which students are trained in competencies they need when working within the process of making laws, be it as a legislation lawyer or a politician. The course, called Legislation, has been part of the Master Programme at the Law School for over ten years now. Over the years the course has been adapted because of experiences of both students and staff. But as from the start students have been very enthusiastic about this new way of learning.

Since the legislation of the European Union nowadays has great impact on domestic law in the EU member states I came to realize that students should not only be trained in making domestic legislation and thus I started thinking about developing an online course on EU legislation. Such a course would also open the chance to have students of various EU member states collaborate in a project through which they acquire profound knowledge on as well as competencies for making EU laws.

In this paper I will start by giving a brief description of experiences in the development and exploitation of an active e-learning course based on collaboration by students.

I will not go into the actual design as I have already given a specific description thereof in an article

8 Kirschner, P.A., Martens, R.L. & Strijbos, J.W. 2004

published in The Law Teacher in 2004[17].

After a brief description of goals, outcomes and lessons learned, I will present my ideas for a course in a virtual platform in which students from universities in various EU-countries can learn by collaborative work how to design EU legislation that will affect their domestic constitutional law system.

2. LAW DRAFTING IN A VIRTUAL PLATFORM FOR ACTIVE LEARNING

Before developing the domestic course, together with educational scientists I started defining the leading principles from which to work. The course had to focus on a simulation of the legislative procedure, students had to be learning by collaboration with peers and assessment by tutors and all activities would have to be done in a need virtual setting allowing students to learn regardless of moment or location. The didactical concept of collaborative learning[18] had proven to be stimulating and very effective for students. Such a learning setting is characterized by its shared realistic and relevant problems, shared needed goals, room for multiple perspectives on problems and solutions, shared responsibilities both for the process of achieving a final product and for the product itself and mutual trust between participants so that they are valued for their contributions and initiative[19]. Students tend Discussing, accepting and learning from criticism given by fellow students proves to work very effectively and efficiently for adult students. They learn more actively from and by one another than when only taught by tutors. The whole course was to be offered in an electronic learning setting, a virtual platform, as students should not be required to attend physical meetings with other students and teachers. Thus students could participate from everywhere, the only condition being that they have access to the Internet.

2.1 Course on domestic legislation

Although the procedures of all sorts of legislation making could be simulated, after some consideration, I decided to model the domestic legislation course r after the procedures in Dutch Constitutional Law on central governments' level. This choice was made because the procedures on the level of decentralised government in the Netherlands can vary from one municipality or province to another whereas the procedures for the central government's level are laid down in legislation and are therefore more easily accessible.

2.2 Goals and competences in the course on domestic legislation

Before starting designing our course on domestic or national legislation, we defined the goals we were after. We wanted students to

- acquire a profound knowledge of legislative competencies of the various public authorities, of the various types of legislation and of the legislative procedures on the Dutch national government level;

17 Van Haaren-Dresens (2004)
18 Cf. Dillenbourg, P. 1999
19 Kirschner, P.A., Martens, R.L. & Strijbos, J.W. 2004

- acquire deep insight in the aims that can and the aims that cannot be reached by legislation, of legislative processes and of techniques to draft parliamentary legislation;
- develop the skills to use this knowledge and insight in a simulating where they must actively act in the role of members of Dutch national parliament (MP) or ministers in the Dutch national cabinet, thus demonstrating the newly acquired competencies;
- acquire and demonstrate the consciousness that is required for serving the general interest as a critical, accurate and punctual professional in the public service;
- be transparent in their work and render accountability for it.

On passing the course, students have acquired confronting and facilitating competencies.

The confronting competency can be described as the ability to act in a specific role, represent and defend the interest that belong with this role and reach the goals aimed at by the role.

The facilitating competency can be defined as the ability to create a legal structure that enables, legitimates or even steers social activities. This structure i.e. the legislation drafted is being created from the hermeneutic perspective towards the perspectives of those who use the structure.

2.3 Virtual platform

The course's virtual platform is based on Blackboard. The learning setting structures the course and includes an E-Book with all assignments. All learning materials students need are either presented to them by staff or have to be searched for or consulted on the internet. The only extra is a printed book on legislation students have to read at the start of the course in order to assure they all have an adequate and equal level when actually starting the assignments. The virtual class programme we use is called Elluminate Live![20] .

The electronic learning setting should not be complicated as many law students around the turn of the century had little or none experience with e-learning and even nowadays cannot be considered digital natives[21].

Before Blackboard was available at the Open University, we used a general setting for e-learning developed by the Educational Sciences Department of the Dutch Open University[22]. In later years we had an experiment using serious game settings[23] but we came to find out that these settings were too complex for our course and did not have any advantages over our previous setting. The Blackboard platform does work very well for students as well as staff. The latter can structure the

20 www.elluminate.com (last consulted on 11 October 2013)
21 Cf. Prensky, M. (2001) and Williams, P. & Rowlands, I. (2007)
22 Called Studienet (old) whereas our current Black Board setting is called Studienet (new)
23 Called Cyberdam, developed by a foundation which develops e-materials for higher education institutions in the Netherlands, called Rechtenonline (www.rechtenonline.nl last consulted on October 2013), and Emergo, developed by the Educational Scientist Department of the Dutch Open University

content in a simple way that has proven to be very clear to users. Easily accessible newsgroups can be approached through the platform. It also provides the opportunity for staff to track student's performances, both individual and within the group in which they collaborate. Course reports and performance dashboards can be generated easily in Blackboard. Thus staff can trace and confront 'free riders'. The Elluminate setting is also integrated in the virtual platform which gives us the possibility to have a virtual classroom session for the plenary debate in Parliament at the end of the legislation project in which all students participate, either as MP's or as Ministers. Furthermore, virtual classes are being used by students when they want to have a group meeting. A virtual class requires the availability of all participants on a set time whereas the newsgroups or discussion boards are a-synchronic and thus give students more freedom in time.

2.4 Lessons learned

The course was developed in a relatively short period and thus, one year after the start of the project, we first started with two pilot sessions of the course with some 15 students each. Although the course has been successful as from the start, we strived after and ameliorating it after each yearly session on the base of students comments, assessment by colleagues as well as our own findings. The fact that in recent years, there have not been many suggestions for changes anymore may be considered a signal that the course more or less has reached its optimal format.

The lessons learned over the years the course has been in the law curriculum to a large degree correspond with findings in educational science research and literature.

The most important lessons learned can be described as follows.

- E-learning provides a very efficient and effective method for having students collaborate with peers independent of where and when they want to study.
- The e-learning setting has to be easy to access and to use as not every student is familiar with computer based education and therefore a setting that is too sophisticated, might discourage them.
- In order to optimize cooperation, groups of student should exist of 4 until 6 students. This provides the possibility to share responsibilities and guarantees that groups are not too vulnerable if some members resign during the course.
- A strict scheme with deadlines for assignments has to be available rather long before starting the course in order to have students plan their activities in time.
- Students have to be instructed very clearly on what is expected of them.
- Students have to be instructed that they are expected to behave as responsible adults and are to respect the various ways in which peers will communicate and work.
- Student's activities in the course have to be assessed and evaluated by staff permanently. This makes the course rather intensive for staff.
- Staff has to intervene in time if problems occur with individual students or within a group.

- Evaluation of assignments per individual student is rather difficult as most work is the result of work done by the group.

The main remarks students make in their evaluations of the course are paraphrased here.

- They state that the concept of the course is stimulating.
- They say working in the virtual platform is less complex then they had expected it to be.
- They are very positive about the learning effects of collaboration.
- They say that they think they have learned more by this active learning method than they learn in traditional methods.
- They state that they consider themselves able to demonstrate the competencies acquired in their professional lives.

3. IDEAS FOR A NEW COURSE

The experiences and success of the course as well as our experiences in Summer Schools for law students of various nationalities, made us think about possibilities to expand the concept of our course to EU law drafting. Besides training in the making of EU legislation this would also provide the opportunity to have students of different EU member states collaborate and learn from one another. The backgrounds of participating students in various constitutional law systems would add an important extra for all participants as thus they would have an excellent platform for exchanging relevant knowledge and experience and build up an international network of constitutionalists that could be rewarding in their professional career. Thus I came to start a project for designing a course through which students can be trained in European legislation. In future, an optional module may be designed for the transformation of this legislation, where required, in the various national constitutional law systems.

3.1 EU legislation

EU laws can be Regulations, Directives or Decisions. Regulations are the highest ranking EU laws; have binding legal force in every EU state without any need for national implementing. Directives are legislative texts that must be transformed by national authorities in domestic law whereas decisions are texts applicable in specific cases only and involve particular authorities or individuals.

In the first session of the new course the making of an EU Regulation would be simulated.

Until 2009, the normal procedure for making legislation in the EU was the so called Co- Decision Procedure that was introduced by the Maastricht Treaty (1992) and adapted in 1999 by the

Amsterdam Treaty. As the Lisbon treaty came into effect on 1 December 2009, the normal legislative procedure in the EU is the so called Ordinary Legislative Procedure. This procedure would be the one to be followed in the new course.

In the normal EU legislative procedure, proposals for European laws are drawn by the European Commission and are then sent to the European Parliament and the European Council which finally must adopt them jointly. Students in the new course would fulfil the roles of these authorities in groups composed of participants from different EU member states. Thus they would learn with and from each other's domestic law systems and would contribute from various backgrounds to an EU legislative act as is the case in the real EU law-making process.

Parliament and Council both may propose amendments to the text of the Commission in two readings. In the course these two readings will be conducted by students. The last stage in real life, i.e. that of a Conciliation Committee, consisting of an equal number of members of Council and Parliament, if Parliament and Council cannot agree, will be skipped for practical reasons. The Commission, after delivering its proposal, will stay participating actively in the course as it will have to comment the Parliament's and the Council's positions.[24]

As the procedure for EU-law-making is rather complex before starting the course, students should already be familiar at Bachelor level with the constitutional law system in their own country in order to be able to discuss EU legislation with other participants at an adequate level.

3.2 Goals and competencies

The goals and competencies to be reached will be similar to those described above for the domestic legislation course as students will be

- getting a profound knowledge of legislative competencies of the various authorities within the EU as well as in the Council, of the various types of legislation and of the legislative procedures in Brussels and Strasbourg ;
- getting deep insight in the aims that can and the aims that cannot be reached by EU legislation, of EU legislative processes and of techniques to draft EU legislation;
- developing the skills to use this knowledge and insight in a simulating where they must actively act in a role of an authority that acts in EU legislative processes thus demonstrating the newly acquired competencies;
- acquiring and demonstrating the consciousness that is required for serving the general interest as critical, accurate and punctual professional in the public service;
- being transparent in their work and rendering accountability for it.

The competencies to be acquired will also be similar to the ones described above but important

24 For more information on the legislative procedure :
http://www.europarl.europa.eu/aboutparliament/en/0080a6d3d8/Ordinary-legislative-procedure.html
(last consulted on 11 October 2013)

extras can be added:

- students can be trained in an international setting;
- they would cooperate with lawyers-to-be from different legal systems and traditions and thus will be able to get acquainted with various legal systems;
- students can assess aspects of the EU legislative procedures from the various points of view that they all bring from their national systems;
- they can use their knowledge and skills to re-assess their national systems;
- they can be trained in transforming the EU legislation into their national systems.

3.3 The contents of the course

The course will have two components, the first one being focused on enlarging the knowledge of students of EU legislation. This first component will be divided in various assignments which have to be fulfilled individually by students but will be assessed by peers in their study group. These study groups will be composed of students of various countries in order to have them confronting EU-law with various national constitutional law systems.

The first assignment will be to study literature or, preferably web based texts on EU-legislation individually. On internet, many reliable texts are available[25]. A set period will be given for this assignment and students will have to report the conclusions of their study to their peers and to staff.

Then an assignment, made by staff, on legislative competencies of various EU authorities will be handed out. Students will have to write papers on this theme individually and send them to the other students in their group for peer-assessment. They also will have to assess the papers of their peers themselves. The peer evaluation will have to be taken in consideration and the text of the paper will have to be adapted after this consideration. The final paper will be sent to the staff and will be assessed by the examiners.

A further assignment, made by staff, will confront students with specific aspects of the legislation they have to deal with in the second component of the course. They will be confronted with the doctrine of hierarchy of legislation. Another assignment will focus on an analysis of existing documents in a real EU legislative procedure in order to prepare students for the documents they have to draw themselves in the second component of the course. The procedure for peer-assessment and staff assessment will be the about the same all assignments.

The second component of the course will be the actual simulation of a legislative procedure within the EU. For this component students will cooperate in groups that would act in a role given to them

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25 E.g. http://eur-lex.europa.eu/en/index.htm
http://europa.eu/eu-law/
http://www.europarl.europa.eu/aboutparliament/en/0080a6d3d8/Ordinary-legislative-procedure.html
(all last consulted on 11 October 2013)

by staff. A memorandum about the need for EU legislation on a specific subject will be drawn by staff and would be presented to the groups of students. The student's group acting as the European Commission will be requested to draft a regulation. The other student's groups will have to take position in the capacity of either political party in the EU Parliament, or as EU Council. The group acting as EU commission will have to comment these positions. All groups will have to take all steps and deliver all documents that are taken and delivered by the real actors in the legislative procedures in the EU. They also will have to discuss the draft legislation in plenary debates, modelled after the real debates in the EU Parliament. It might be considered to invited some EU MP's to instruct students in a video message about how to actually do a debate; this message could be integrated in the virtual platform shortly before the debate is to take place. The debates will take place in a virtual classroom provided by staff in order to facilitate participating from wherever each individual student and tutors are. Staff members will be acting as Presidium in the debates. The voting procedures will be simulated also via the virtual classroom program. The last voting cast will conclude the course albeit that a virtual class can follow within a week or a fortnight to evaluate the course. In this class the outcomes of the assessment of papers and documents will also be presented to the participating students by staff. After finishing the course, students could be given the option to be trained in the domestic follow up of EU legislation. This could be done by an optional extra module in the learning platform for the steps necessary to transform EU directives into domestic law. As the procedures for transformation are not the same in all EU constitutional law systems, the content of this optional module would vary per member state and staff members of the respective State would have to assist in designing this module.

3.4 Learning Setting

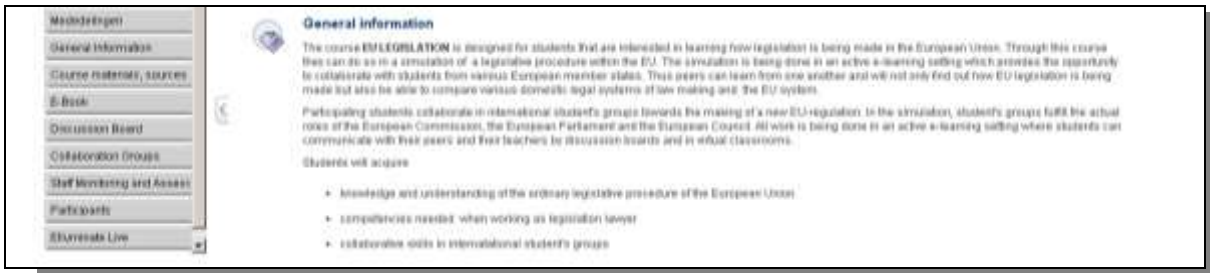
The learning setting is based on the practical principles described hereafter.

An uncomplicated and reliable virtual platform has to be used with a helpdesk that can be reached easily by students. Students from (Open) Universities in various EU countries have to be recruited in order to be able to train students in an international setting. Constitutional law experts from Law Schools of Political Science Schools of (Open) Universities in various EU countries will have to participate because availability of knowledge of national constitutional law systems is required.

In order to have students and staff from various EU member states communicate effectively, the English language will have to be the only language used in the course.

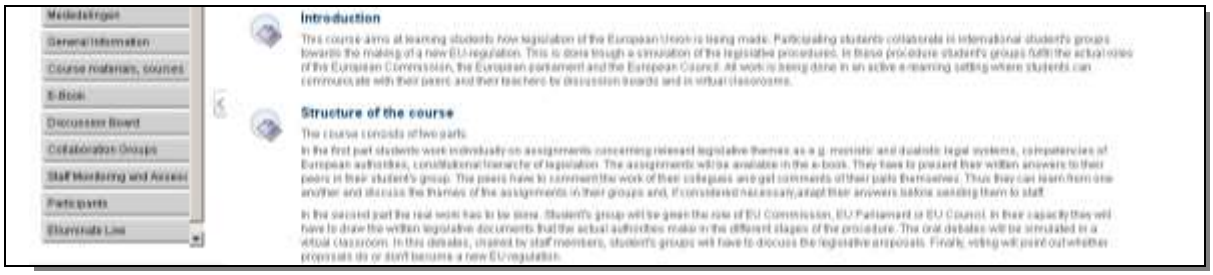
The first draft for the learning setting has just been designed in Blackboard. The course site starts with a button for general information about the goals of the course, it's structure, the methods used for collaboration and the assessment procedure.

The following screen print shows the part describing the course's content and didactical goals.



3.5 E-book

The first draft of the E-Book that also may be discussed during the workshop at the EADTU Annual Conference 2013, opens with two short paragraphs, i.e. the Introduction, containing an excerpt of the general information concerning the goals of the course and the structure of the course.



The E-book contains clear descriptions of the assignments and the legislative process . As said before, in Part I students work individual on the assignments but have to subject their initial papers to peer assessment by the other members of their peer group. The assignments are all designed to prepare students for the work that has to be done in the second part of the course.

Below the relevant passage from the E-Book in screen print.

Part I

ASSIGNMENT A

Here you can find the *Guide for the ordinary legislative procedure*, downloaded from the website of the European Council. **Study** this document. Then **search** the various websites of the European Union for more relevant information on the legislation of the EU.

Now **describe** in a paper (about 3 pages A4, font: Arial 10 pts, margins 2,5 cm), the **legislative procedures** in the 'Strasbourg' and the 'Brussels' institutions within Europe. Please **go into**

- the various legislative acts
- the authorities concerned
- their competencies

Account for the sources used for your paper.

Post your paper in your Collaboration Group for peer assessment. **Comment** on the papers of your peers. **Consider and discuss** the comments of your peers on your own paper. Then **finalize** your paper and **post** it in the Discussion Board.

ASSIGNMENT B

Describe the hierarchy of legislation in your domestic constitutional law in a paper (about 3 pages A4, font Arial 10 pts, margins 2,5 cm). **Post** your paper in your Collaboration Group. **Study** the papers of your peers from other member states, **discuss** the differences in the various domestic systems in the Collaboration Board. Then **add** a description of these differences with the pro's and con's in respect to your own domestic systems in your paper. **Finalize** your paper and **post** it in the Discussion Board.

Account for the sources used for your paper.

ASSIGNMENT C

Describe the various areas of policy for which the European Union has law making competencies in a paper (about 2 pages A4, font Arial 10 pts, margins 2,5 cm). **Post** your paper in your Collaboration Group for peer assessment. **Comment** on the papers of your peers. **Consider and discuss** the comments of your peers on your own paper. Then **finalize** your paper and post it in the Discussion Board.

Account for the sources used for your paper.

ASSIGNMENT D

Research whether and if so, how, the European Union has regulated mobile roaming, and **describe** the results of your research in a paper (about 2 pages A4, font Arial 10 pts, margins 2,5 cm). Post your paper in your Collaboration Group for peer assessment. **Comment** on the papers of your peers. **Consider and discuss** the comments of your peers on your own paper. Then **finalize** your paper and post it in the Discussion Board.

Account for the sources used for your paper.

Part II in the following screen print describes the actual simulation of the legislative procedure within the European Union.

Part II

The making of a EU Regulation

Student's collaborate in groups that act as:

A. the European Commission

B. the European Parliament:

1. *Group of the European People's Party (Christian Democrats)*
2. *Group of the Progressive Alliance of Socialists and Democrats in the European Parliament*
3. *Group of the Alliance of Liberals and Democrats for Europe*
4. *Group of the Greens/European Free Alliance*
5. *European Conservatives and Reformists Group*
6. *Confederal Group of the European United Left- Nordic Green Left*
7. *Europe of Freedom and Democracy Group*

C. The European Council

Each group has to elect chairpersons for each subpart of the assignment. The chairperson is responsible for the communication within the group and with staff and for posting the group's documents in time in the discussion board.

STAGE I

The Commission **draws a proposal** for a new Regulation based on a working document that is provided here. The proposal is being posted in the discussion board.

STAGE II

During its 1st reading, the European Parliament **examines** the Commission's proposal and each student's group **amends** it.

Staff will set a time limit on Parliament's 1st reading.

Vote: by a simple majority of votes cast by student's group (one vote per group)

When the proposal is sent to Parliament, the rapporteur and "shadow rapporteurs" (Members usually appointed by each of the political groups to follow a procedure) usually start collecting opinions. For practical reasons, this stage is adapted: each student's group can propose amendments and is rapporteur for its own political group. It draws its written position in first reading which is being posted in the discussion board.

The voting will be done per amendment proposed and the amendments adopted will be the **Position of the European Parliament at 1st reading** which will be posted by staff in the discussion board.

STAGE III The Commission **comments** the Parliament's position in a written document posted in the discussion board.

STAGE IV

The Council in first reading **examines** the Parliament's position and may **adopt or amend** it. It draws a written document in first reading which is being posted in the discussion board: draws a written comment in first reading.

Staff will set a time limit on the Council's 1st reading.

Vote: The Council decides by qualified majority, unless its position differs from that of the Commission, in which case unanimity is required.

Resulting document: **Position of the Council at first reading**

NOTE: Preparatory work in Council runs in parallel with the 1st reading in Parliament, but Council may only formally conduct its 1st reading based on Parliament's position. Council can: accept the EP position, in which case the legislative act is adopted; or adopt changes to

STAGE V

The Commission **comments** the Council's position in a written document posted in the discussion board.

STAGE VI

Parliament in its 2nd reading **examines** Council's position and each student's group **proposes amendments** in a written document posted in the discussion board.

Parliament must conduct a 2nd reading within a time limit set by staff.

Vote: Any amendments or rejection of Council's position must be approved by an absolute majority of student's group of MEPs.

The European Parliament voting to modify Council's position it adopts the **Position of the European Parliament adopted at 2nd reading.**

Result: The legislative proposal **is not adopted by Parliament**

STAGE VII

The Commission **comments** the Parliament's position in 2nd reading in a written document posted in the discussion board.

STAGE VIII

Council **examines** Parliament's 2nd reading position and either approves all of Parliament's amendments meaning the act is adopted, or does not approve all amendments, leading to the convening of the Conciliation Committee. For practical reasons the course does not include this convening procedure.

Result: the act is **adopted** or **rejected**

NOTE: Stages II, IV, VI and VIII are concluded by voting.

The E-Book has to be made more attractive for students by integrating multimedia such as You Tube films on the subject of the legislative procedures, interviews with MP's, EU- Commissioners or scientists. Students appreciate materials that give them further explanations and state that these materials often add seriously to their learning. However as educational science says, this integration

should be done thoughtfully and carefully[26].

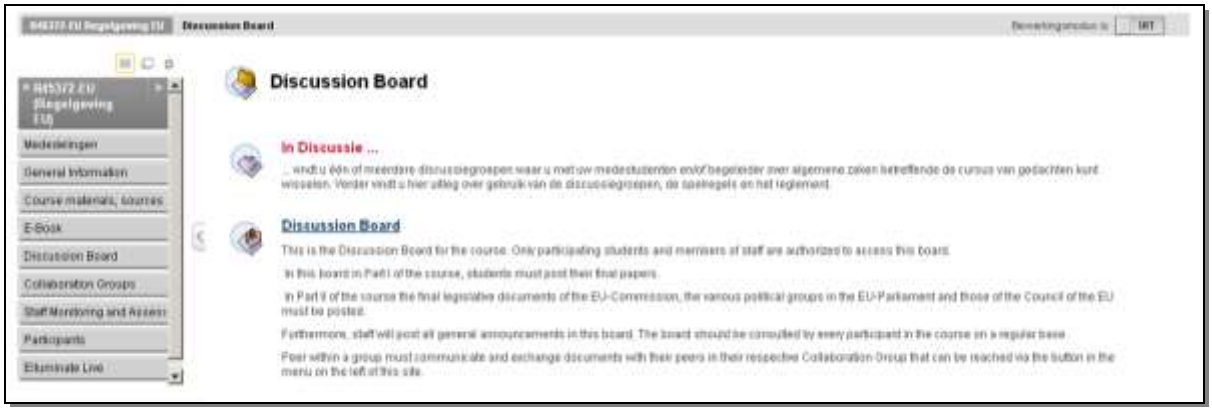
In my draft a first step towards providing instructive multimedia is made by integrating a videographic from the website of the EU Parliament on the Ordinary legislative procedure films, shown here beneath as screen print.

A bibliography with links to digital libraries and institutional websites has to be added. Students in various EU member states have to be able to do their research through the Internet and must account for the sources they use in all the papers submitted to staff for assessment.

The E-book will be easily accessible through a button in the learning platform as all the newsgroups and the collaborations groups will. Each group of students will have its private newsgroup to be used for collaboration within the group, see next screen; staff participates passively in these groups. Communications between students in other ways than via the newsgroup will of course be possible and allowed but students should know that these contacts would not be taken into consideration by staff when assessing student's activities.

26 Cf. Kester, L. (2013)

Furthermore, there will be a newsgroup (Discussion Board) accessible for all students and staff in the course, to be used for providing general information by the staff and for posting group documents that all participants must either make or study in the legislative procedure as well as for submitting all papers for assessment by staff. Here beneath the screen print of the Discussion Board, still partly in Dutch.



The virtual classroom facilities will also be accessible for all participants through the learning platform. The default at the Open University in the Netherlands is Elluminate Live! It has been tested thoroughly by our Educational Science Department and it has proven to work very well, also in my own experiences. It allows students and staff to participate from wherever they choose. Elluminate permits oral communication, messaging by chat to all or restricted participants as well as the exchange of either documents, web links, You Tube videos etc. Participants in a virtual class have to use a headset and the moderator has to give clear instructions on his granting participants the use of

the microphone. Students can be placed in separate rooms reserved for specific groups during a class an can easily be brought back to the plenary meeting again. Voting is also possible in the classroom.

Students might request virtual class sessions to be prepared by staff during the course session for group meetings. Thus they can also test Elluminate in time for the plenary debates that will take place via the virtual classroom also.

3.6 Assessment by staff and curriculum

There will be no exam at the end of the course but the whole process will be monitored by the tutors. They can intervene and assess students at any time. In literature assessment is considered as part of the instructional process and plays a central role in supporting and enhancing students' learning[27]. It should be noted that the workload for tutors is quite heavy in this type of learning settings[28]. E.g. tutors have to check all newsgroups daily in order to be able to steer in time and to guarantee the continuity of the learning processes of all students. Although this should better not be communicated to students, during the course staff would have to work towards passing ratings for all participants. Tutors can give directions and instructions during the whole process to each student in order to have him of her improve accomplishments, and thus steer towards the passing of all students.

The first component of the course, meant to prepare students for the second one, should have a relatively modest weight. It could e.g. weigh for 1/3 whereas the simulation, being the most important part of the course, could weigh for the other 2/3.

It goes without saying that the learning setting will provide information on the assessment. In the menu the button Staff Monitoring and Assessing gives the relevant information as shown here:

27 Cf. Chan, C.K.K. & Van Aalst, J. (2004)
28 Cf. Roosmalen, P. van, Supporting the tutor (2008)

Monitoring and assessing

Staff will:

- provide a document on which the Commission has to base its proposal for a Regulation;
- monitor the Discussion Board as well as all Collaboration Boards ;
- communicate with the chairpersons of each group;
- instruct students whenever considered necessary
- assess all documents as well as activities of individual students and groups.

Monitoring

All participants will be authorized for the course's Discussion Board. This board is meant for posting final documents and for communication with staff and with all other participants. Each group has its own Collaboration Group for collaboration within the group and for communication with staff. Staff monitors all Collaboration Groups as well as the Discussion Board. Students must realize that communation by other means can not be taken into consideration for assessment.

Assessing

There will be no exam at the end of the course. In stead student's work is assessed during the whole course. The results of the assessment, to be made known after the end of Part II of the course, will be individual. They consist of the assessment of the written documents produced in Part I as well as of the contribution to the collaborative documents in Part II. Beside the documents, all activities will be taken into consideration. The legal quality of all documents and activities will be assessed as will be the competencies to act in the role assigned, to collaborate and communicate with peers and staff, as well as the attitude towards all assignements, towards peers and staff. It goes without saying that all participants must be able to write and speak in adequate English. If all requirements are met, students will earn 10 EC for the LLM curriculum of their own university.

The legal quality of all documents and activities should be assessed as will be the competencies to act in the role assigned, to collaborate and communicate with peers and staff, as well as the attitude towards all assignments, towards peers and staff.

The assessment of the students' achievements by staff would include the quality of individual work and group work. Students should be assessed on principled knowledge, deep learning and metacognitive understanding as they would be asked to demonstrate their competent performance and show their ability to use and apply skills and knowledge in authentic situations[29]. The emphasis thus should not be of on examining superficial learning outcomes such as factual recall or the application of facts, but should be on the assessment of contribution to others' learning and on collaboration instead of on individual competitive assessment.

The course preferably should be part of a Master curriculum in Law or Political Sciences. The course will have a nominal study load of 200 hours. On finishing the course successfully, students will be rewarded 10 European Credit Points for their Master curriculum.

Because of the didactical concept of collaborative learning a course session has to take place in a set period of about 6 months. Within this session students should be able to work on an average of about ten hours per week on the course. A scheme for activities has to be available rather long before the actual start of a session in order to allow students to plan their study activities in time.

29 Cf. Chan, C.K.K. & Van Aalst, J. (2004)

4. TO CONCLUDE

As was already stated in educational science literature almost a decade ago[30], different students will perceive collaboration differently as each individual internalises co-constructed knowledge in the light of his prior knowledge, experience and perspective. This will apply a fortiori if these students come from various countries in the EU and have been educated in different school systems. Will our course enable them to make an adequate EU regulation by collaborate active e-learning via a virtual platform? Will they demonstrate the competencies that they were meant to acquire by taking the new course? It will be very interesting to see whether we can reach the goals for the new active learning course as EU legislative procedures are rather complex and students as well as staff will have to deal with great challenges. Nevertheless I hope that when we can actually offer the course, they will all enjoy it and think it a valuable addition to their curriculum.

5. BIBLIOGRAPHY

- Alfieri, L., Brooks, P.J., Aldrich, N.J. & Tenenbaum, H. R. (2011), Does discovery-based instruction enhance learning? in: Journal of Educational Psychology, 103
- Brummelhuis, A. ten, 'Het primaire proces vervangen door ICT is een illusie' in Dies Magazine 2013 Professionaliseren is leuk! Open Universiteit, Heerlen 2013, issuu.com/open_universiteit/docs/dies_magazine_2013?e=4604970/4971465
- Agustí Cerrillo i Martínez, Ana María Delgado García (Coordinadores), (2013)

  Buenos practicas docentes en el uso de las TIC en al ambito de Derecho, UOC and Huygens Editorial, Barcelona 2013
- Chan, C.K.K. & Van Aalst, J (2004), Learning, assessment and collaboration in computer supported environments, p 93, in: What we know about CSCL and implementing it in higher education, edited by Jan-Willem Strijbos, Paul A. Kirschner and Rob L. Martens, Kluwer Academic Publishers, Boston, Dordrecht, New York, London 2004
- Cf. Dillenbourg, P. (1999), What do you mean by collaborative learning?, in: P. Dillenbourg (ed), Collaborative learning: cognitive and computerational approaches, pp. 1-16, Pergamon, Elsevier Science, Amsterdam 1999
- Kester, L. (2013) , Oratie: Hoe leer je effectief van een internetfilmpje of tv-programma, Open Universiteit, Heerlen, 11 October 2013, http://www.ou.nl/web/persberichten/home/-/asset_publisher/6fwK/content/oratie%3A-hoe-leer-je-effectief-van-een-internetfilmpje-

22 Strijbos, J.W., Kirschner, P.A., & Martens, R. L., (2004)

of-tv-programma?redirect=http%3A%2F%2Fwww.ou.nl%2Fweb%2Fpersberichten%2Fhome%3Fp_p_id%3D101_INSTANCE_6fwK%26p_p_lifecycle%3D0%26p_p_state%3Dnormal%26p_p_mode%3Dview%26p_p_col_id%3Dcolumn-5%26p_p_col_pos%3D1%26p_p_col_count%3D2

- Kirschner, P.A. (2013), Knopvaardig is wat anders dan digitaal geletterd, online article on

  http://4w.kennisnet.nl/artikelen/2013/03/08/knopvaardig-digitaal-geletterd/ (consulted: 10/04/2013)

- Kirschner, P.A., Martens, R.L. & Strijbos, J.W (2004), CSCL in higher education. A framework for designing multiple collaborative environments, in: What we know about CSCL and implementing it in higher education, edited by Jan-Willem Strijbos, Paul A. Kirschner and Rob L. Martens, Kluwer Academic Publishers, Boston, Dordrecht, New York, London 2004

- Prensky, M. (2001), Digital Natives, Digital Immigrants Part 1. On the Horizon, 9*(*5)

- Reints, A. & Wilkens, H. (2013) Wat bepaalt de kwaliteit van digitaal leermateriaal, online article on http://4w.kennisnet.nl/artikelen/2013/02/13/wat-bepaalt-de-kwaliteit-van-digitaal-leermateriaa/ (consulted: 10/04/2013)

- Roosmalen, P. van, Supporting the tutor, Heerlen 2008, on http://dspace.ou.nl/bitstream/1820/1267/1/PhD-SupportingTheTutor-PvR-18042008.pdf

- Strijbos, J.W., Kirschner, P.A., & Martens, R. L. (2004), What we know about CSCL… and what we do not know about CSCL, p. 247, in: CSCL in higher education. A framework for designing multiple collaborative environments, in: What we know about CSCL and implementing it in higher education, edited by Jan-Willem Strijbos, Paul A. Kirschner and Rob L. Martens, Kluwer Academic Publishers, Boston, Dordrecht, New York, London 2004

- Valcke, M. (2010), Onderwijskunde als ontwerpwetenschap. Een inleiding voor ontwikkelaars van instructie en voor toekomstige leerkrachten. Gent, Academia Press, 2010.

- Van Haaren-Dresens, I. (2004), Students as legislators: Simulating the making of an act of parliament by collaborative electronic learning , in: The Law Teacher, 38:2

- Williams, P. & Rowlands, I. (2007), Information behaviour of the researcher of the future: Work package II. Londen: University College London.

- Websites of the European Union:

  - http://eur-lex.europa.eu/en/index.htm

  - http://europa.eu/eu-law/

  - http://europa.eu/legislation_summaries/index_en.htm

- http://www.europarl.europa.eu/aboutparliament/en/0080a6d3d8/Ordinary-legislative-procedure.html
- http://www.europarl.europa.eu/aboutparliament/en/006ff89b2c/Introduction.html

(All digital sources last consulted 11 October 2013)

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Opening on-line education: The institutional model of a "Global Degree"

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Abstract

Global developments dictate more than ever the reorientation of the existing educational structures and the creation of new ones, so to respond to the new challenges that students are facing. This paper endevours to present the formulation and development of a new educational structure and mode, such as the proposed **"Global Degree"**, which comes to fill this gap. This new educational norm based on the methodology of the **"International Academic Credit" (IAC)**, which will be globally established will create solutions for making learning more targeted, flexible, updated and applicable. It will work on a parallel route with conventional degrees offered by Universities around the globe and it should not aim to substitute the existing higher education structures.

The core methodological instrument is the **IAC** which measures and represents the academic workload, which is required for studying and it works similarly to the ECTS. Methodology also uses all the current innovative technological educational tools such as virtual learning via ***Second Life***, but also the latest applications on distance education and e-learning whereas, television and the internet serve as educational platforms. Students will be awarded a **"Global Degree"** by any of the Institutions that will participate in the **"Global Degree Consortium"**.

What is proposed is an "extensive hybrid" higher education methodology, where each student will build his own Degree regardless the mode of attendance (full time, part time, distance learning), the method of studying (conventionally, via e-learning, virtual learning, *Second Life*), the location of the University, or even the language of tuition.

Keywords: open learning, open education, global degree, distance learning, international credits.

Introduction

"It is in fact a part of the function of education to help us escape, not from our own time — for we are bound by that — but from the intellectual and emotional limitations of our time."

T. S. Eliot

It is commonly accepted today that the education landscape is changing and there are more types of learning than ever before: conventional, part-time, full-time, distance and online. Simultaneously, global developments dictate more than ever the reorientation of the existing educational structures and the creation of new ones, so to respond to the new challenges that students are facing. People want and need to learn in different ways, which support their preferred styles so it is important that we meet demand and give learners what they want, when they want it.

In this framework, this paper endevours to present the formulation and development of a new educational structure and mode, such as the proposed **"Global Degree"**, which comes to fill this gap. This new edcational norm, if established, will create by definition a new **institutional model** for higher education.

The concept of the creation of a "Global Degree" will be first presented followed by an assessment of global learning today together with the new methods of what we call "new learning". Following this reference, the methodology, the SWOT analysis and the implementation plan of the "Global Degree" will be analysed followed by the concluding remarks.

The potential establishment of a "Global Degree" is a concise and innovative proposal that will revolutionise international higher education and at the same time blend conventional learning with distance learning without abolishing any of the existing structures.

Its mission statement: "one world, one degree, limitless capabilities" stands at the core of the proposal.

The Concept

As noted, the global developments and the contemporary international setting dictate more than ever the reorientation of the existing educational structures and the creation of new ones, in order to respond to the new challenges that countries and students are facing.

The formulation and development of a new educational structure and mode, such as the proposed **"Global Degree"**, comes to fill this gap. This new educational norm based on the methodology of the **"International Academic Credit" (IAC)**, which will be globally established, will create solutions for making learning more targeted, flexible, updated and applicable. The **"Global Degree Project"** will also accommodate life - long learning and continuous education programs.

It will work on a parallel route with conventional degrees offered by Universities around the globe and it should not aim to substitute the existing higher education structures.

The institutions that will participate in the **"Global Degree Project"** will sign an "**International Academic Treaty"** and adopt the **"International Academic Credit" (IAC)** as a parallel system to those that they already use. Participating Institutions could then award a **"Global Degree"** to successful graduates without abolishing the awarding power of their traditional ones. **"Global Degrees"**, will acquire the same academic and professional rights as conventional ones in the country of the awarding Institution and globally where possible. **"Global Degrees"** will have an additional distinct logo and watermark in order to be distinguished from the conventional ones that institutions award.

Each student shall accumulate the newly established "**International Academic Credits" (IACs)** as he/ she did so far with traditional credits or ECTS for instance, with the distinctive difference that the location, the time, the mode of learning and the institution are now placed on a different layer and they do not constitute constraints but opportunities for flexible learning and continuing education processes.

More specifically, what is proposed is an "extensive hybrid" higher education methodology, where each student will **build** his/ her own Undergraduate or Postgraduate Degree regardless the mode of attendance (full time, part time, distance learning), the method of studying (conventionally, via e-learning, virtual learning, *Second Life* etc), the location of the University, or even the language of tuition.

Students will then be awarded a **"Global Degree"** by **any** of the Institutions that will participate in the **"Global Degree Consortium"** and additionally, they will be able to build new Degrees and to acquire new knowledge in the future based on the "**International Academic Credits" (IACs)** they have already attained. A civil engineer, for instance, could receive his/ her **"Global Degree"** and in fifteen years he/ she could return to University and study to be an architect using the relevant **"International Academic Credits"** he/ she has accumulated in the past as an engineering student plus those that are specialised for architecture. In this way, continuous education is enhanced and the learning process never stops.

Global Learning Today

Before proceeding to the methodology of the proposed new educational norm, it is vital and fruitful to assess the contemporary situation regarding global learning today. The Organisation for Economic Cooperation and Development (OECD) has just released a new report, which is part of the *Education Indicators in Focus* series, looking at higher education graduates between the ages of 25 and 34 in OECD and Group of Twenty member countries – 42 countries in total.

In this report (OECD, 2012) top findings include:

The expansion of higher education in rapidly -developing G20 nations has reduced the share of tertiary graduates from Europe, Japan and the United States in the global talent pool.

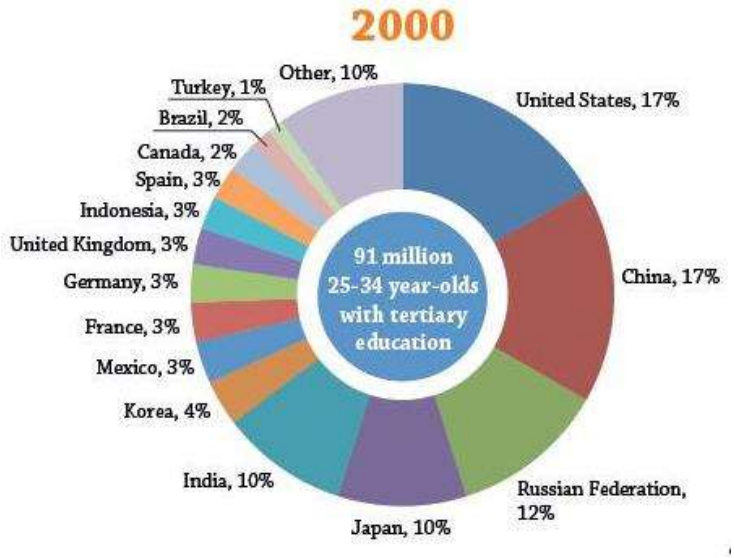
If current trends continue, China and India will account for 40% of all young people with a tertiary education in G20 and OECD countries by the year 2020, while the United States and European Union countries will account for just over 25%.

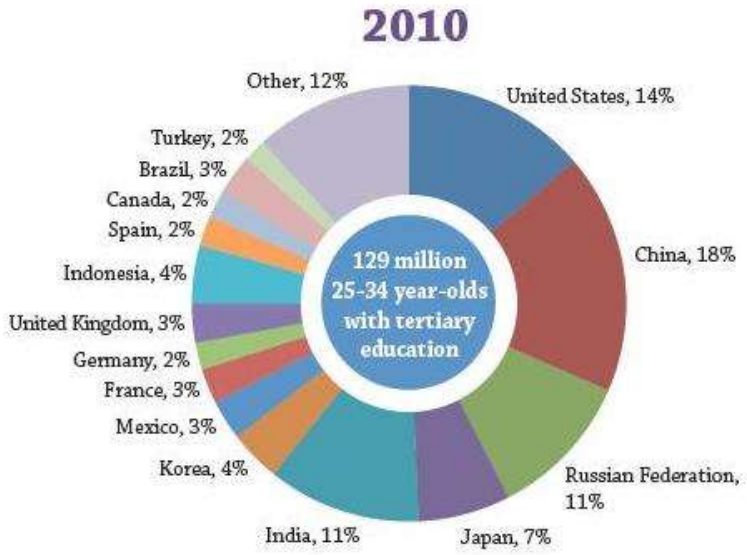
The strong demand for employees in "knowledge economy" fields (i.e., STEM) suggests that the global labour market can continue to absorb the increased supply of highly -educated individuals.

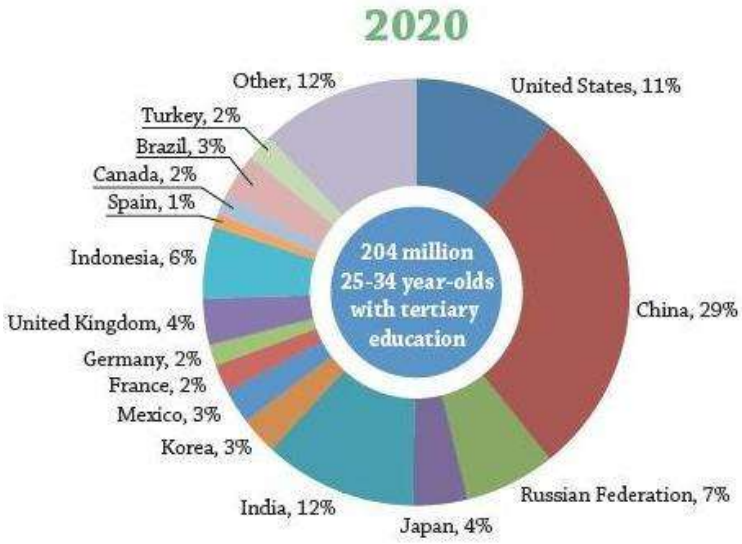
Highlights: 2010 vs. 2020

- China is expected to produce 29% of all higher education graduates aged 25-34 (up from 18% in 2010);
- the United States is expected to produce 11% of all those graduates (down from 14% in 2010);
- India, which produced 11% of graduates in 2010, is expected to overtake the United States and produce 12% of the share of graduates by the end of this decade;
- the UK's share should increase from 3% in 2010 to 4% in 2020;
- significant declines are forecasted for Japan (from 7% to 4%) and the Russian Federation (from 11% to 7%);
- in 2020, 6% of young graduates will hail from Indonesia.

Share of 25-34 year-olds with a tertiary degree across OECD and G20 countries (2000, 2010, 2020)







(Source: OECD, 2012).

The global talent pool has grown rapidly over the past decade

In 2000, there were 51 million 25-34 year-olds with higher education (tertiary) degrees in OECD countries, and 39 million in non-OECD G20 countries.

Over the past decade, however, this gap has nearly closed, in large part because of the remarkable expansion of higher education in this latter group of countries. For example, in 2010 there were an estimated 66 million 25-34 year-olds with a tertiary degree in OECD countries, compared to 64 million in non-OECD G20 countries.

The number of higher education graduates will continue to grow

It' s likely that the global talent pool will continue to grow across most OECD and G20 countries, and that the fast-growing G20 economies will continue to account for an increasingly large share. According to OECD calculations, there will be more than 200 million 25-34 year-olds with higher education degrees across all OECD and G20 countries by the year 2020.

What' s more, 40% of them will be from China and India alone.

By contrast, the United States and the European Union countries are expected to account for just over a quarter of young people with tertiary degrees in OECD and G20 countries.

By 2020, China aims for 20% of its citizens – or 195 million people – to have higher education degrees. If this goal is realised, China will have a population of tertiary graduates that is roughly equal in size to the entire projected population of 25-64 year-olds in the United States in 2020.

The "knowledge economy" must grow to absorb the growing talent pool

In many ways, the rapid expansion of the global talent pool – and its expected growth in the future –

is no surprise. Since higher levels of education are strongly linked to higher employment rates and larger earnings premiums, individuals have strong incentives to pursue more education.

Similarly, as national economies continue to shift from mass production to "knowledge economy" occupations, countries have strong incentives to build the skills of their populations through higher education.

At the same time, the explosive growth of the talent pool raises an important question: 'Will the global labour market continue to absorb the increased supply of higher-educated workers in the future?' (OECD, 2012).

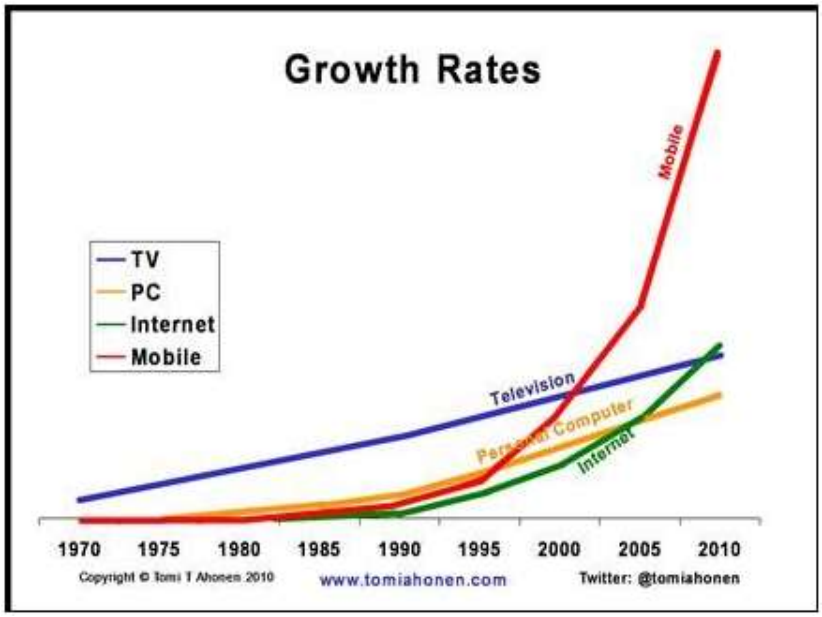
New Learning

It is expected that the future of education will eliminate the classroom, the borders between countries and all the stereotypes for acquiring knowledge. Technology can turn our entire lives into learning experiences. As Nicholas Carr (2012) argues, a hundred years ago, higher education seemed on the verge of a technological revolution. The spread of a powerful new communication network—the modern postal system—had made it possible for institutions to distribute their lessons beyond the bounds of their campuses. Anyone with a mailbox could enroll in a class.

The rapid explosion of the information age introduced to education methodology a series of tools and instruments that changed learning for ever such as: educational platforms, video lessons, social networking, cloud computing, smart objects, mobile learning, educational gaming etc. According to the latest ICT Facts and Figures (ITU, 2013), currently 2,7 billion people, almost 40% of the world's population, are online. Europe is the region with the highest Internet penetration rate in the world (75%), followed by the Americas (61%). 41% of the world's households are connected to the Internet. In 2020 the number of Internet users will reach the number of almost 5 billion, equivalent to the entire world population in 1987. This compares with 1.7 billion users in 2010 and only 360 million in 2000.

Additionally, the growth of students accessing their course materials from mobile devices is increasing on a daily basis. In 2013, there are almost as many mobile - cellular subscriptions as people in the world. It is very fruitful to observe the growth rates statistics published by Tomiahonen.com in regards to mobile usage:

Mobile Usage Growth Rates



(Source: Scholarix, 2011).

It is very evident, how the growth of mobile subscription is exploding all over the world, whereas, the e-Learning market hit $ 52.6 billion by 2010. In this framework, it is interesting to notice that 77% of American Corporations are using online learning, 51% of companies have at least delivered 1 training session via e-learning and 80% of employers have used e-learning courses.

Following these references, demand for open courses and greater access to knowledge has been increased so rapidly that we observed new developments and initiatives on a constant basis. An example of the new era of learning are the **Massive Open Online Courses (MOOCs)**. In reality, MOOCs merely added momentum to the steady growth in learning that has occurred since the turn of the millennium. These “massive open online courses,” are earning praise for bringing outstanding college teaching to multitudes of students who otherwise would not have access to it, including those in remote places and those in the middle of their careers. The online classes are also being promoted as a way to bolster the quality and productivity of teaching in general—for students on campus as well as off. There is also a rapidly increasing number of educational initiatives that are build around the concept of open education via the use of the latest educational technology. New associations, strategic alliances and coalitions are formed between some of the best institutions of the world in order to realise these new initiatives.

E-institutions Initiatives

e-institutions

A look at some of the major online education efforts

Name	Founded	Enrollees	Model	Details
Coursera	2012	1.5 million	for profit	Backed by $22 million from VCs and colleges. Nearly 200 courses available, over a wide range of subjects.
edX	2012	155,000*	nonprofit	MIT and Harvard have each pledged $30 million. Seven courses available. Will offer certificates to people who complete the work.
Udacity	2012	739,000	for profit	Got $5 million in seed funding. Offers 14 courses, focused on computer science, ranging from beginner to intermediate to advanced.
Open Learning Initiative	2002	51,000	nonprofit	Carnegie Mellon project offers Web classes and researches online teaching methods. Has 15 courses, including sciences and French.
University of Phoenix	1976	346,000	for profit	Has physical campuses for undergrads and grad students but also offers individual courses online.
The Open University	1969	264,000	nonprofit	Based in the U.K. Combines Web curriculum with physical study centers. Offers hundreds of free online courses in a range of fields.

**EdX figure is for Spring 2012 class only.*

(Source: Nicholas Carr, 2012).

The leaders of Udacity, Coursera, and edX have not limited their aspirations to enhancing distance learning. They believe that online instruction will become a cornerstone of the college experience for on-campus students as well. The merging of virtual classrooms with real classrooms, they say, will propel academia forward. They claim that they are reinventing education and that these initiatives will change the world.

As Marina Gorbis (2013) argues, MOOCs today are our equivalents of early TV, when TV personalities looked and sounded like radio announcers (or often were radio announcers). People are thinking the same way about MOOCs, as replacements of traditional lectures or tutorials, but in online rather than physical settings. In the meantime, a whole slew of forces is driving a much larger transformation, breaking learning (and education overall) out of traditional institutional environments and embedding it in everyday settings and interactions, distributed across a wide set of platforms and tools. They include a rapidly growing and open content commons (Wikipedia is just one example), on-demand expertise and help, mobile devices and geo-coded information that takes information into the physical world around us and makes it available any place any time, new work and social spaces that are, in fact, evolving as important learning spaces (TechShop, Meetups, hackathons, community labs).

Another example is the **Khan Academy**, a non-profit educational web portal created in 2006 by educator Salman Khan. Its mission is to provide “a free world-class education for anyone anywhere”. The web portal supplies a free online collection of more than 4,300 micro lectures via video tutorials. Although it has no qualification awarding power, the fact that Khan Academy has delivered over 260 million lessons proves that there is huge motivation and potential for the future.

Methodology

One of the most important developments in education apart from the application of the new technological developments has been the translation of qualifications into outcomes and competencies. In this way, it is easier now to measure educational values so that we can transfer knowledge more easily and more effectively.

As Marina Gorbis (2013) noted, we are moving away from the model in which learning is organized around stable, usually hierarchical institutions (schools, colleges, universities) that, for better and worse, have served as the main gateways to education and social mobility. Replacing that model is a new system in which learning is best conceived of as a flow, where learning resources are not scarce but widely available, opportunities for learning are abundant, and learners increasingly have the ability to autonomously dip into and out of continuous learning flows. Instead of worrying about how to distribute scarce educational resources, the challenge we need to start grappling with in the era of socialstructed learning is how to attract people to dip into the rapidly growing flow of learning resources and how to do this equitably, in order to create more opportunities for a better life for more people.

Following this reference, the core methodological instrument for the accreditation of the "Global Degree" is the **International Academic Credit (IAC)**, which measures and represents the academic workload, which is required for studying.

Similarly to the European Credit Transfer System (ECTS) the International Academic Credits (IACs) are measured as follows: relation between the expected learning outcomes (based on the selected teaching and learning methods and assessment approaches) and the time available in terms of student workload. To earn **1 International Academic Credit**, a student must carry out **25 hours of activity**. These could be broken in:

- attending or viewing lectures
- individual study
- activities or practical / lab exercises

The methodology also uses all the current innovative technological educational tools such as virtual learning via ***Second Life*** but also the latest telematic applications on distance education and e-learning whereas, digital/ satellite television and the internet serve as educational platforms.

Above all, in the centre of the **"Global Degree Methodology"** and the **International Academic Credit** is the student. The didactic model focuses on the following learning dynamics:

1. use of new technologies in higher education
2. need for continuing education and life-long learning
3. active participation of students and self-learning process

In this new model, the individual student becomes the centre of this new educational process.

A **Personal Learning Environment (PLE)** could be then created including institutional support, pedagogical technological interface, and resource support.

Everything focus on the student as the **"Global Degree Didactic Model"** is been build around his/ her academic and professional aspirations. This new context will include the following features: the learning ecosystem, world view, information reflective thinking, the work environment, social interactions, technology and experiences.

Following this reference, the establishment of a "Global Degree" will also utilise and incorporate in its methodology the following learning norms and structures:

PLN – Professional Learning Network: This acronym is relatively new, but the idea is not. Teachers have always had learning networks or "communities," people we learn from and share with. Teachers are information junkies; we are also social. Put the two together and tech and you have a personal learning network.

MOOC – Massive Open Online Courses: As analysed in the previous section, massive open online course (MOOC) is a model for delivering learning content online to any person who wants to take a course, with no limit on attendance.

Flipped Classroom: A reversed teaching model that delivers instruction at home through interactive, teacher-created videos and moves "homework" to the classroom.

Blended Learning: Blended learning is a formal education program in which a student learns, at least in part, through online delivery of content and instruction, with some element of student control over time, place, path, and/or pace (Teachers with Apps, 2013).

The methodology will also expand to use certain contemporary technological and innovative instruments and trends such as: open and interactive content, mobile learning, the sharing of teaching and educational material, networks and informal learning: eg. Twitter, personal learning environments, E-portfolios and educational e-learning platforms. For example, a Virtual Leaning Environment (VLE) discussion forum, a Twitter account or a Skype session will be proved ideal global communicative skills for the answering of questions or for class interaction.

The number of hours needed to build a learning program under the "Global Degree" initiative, is nearly impossible to be calculated due to the blending of different types and modes of educational methodology. Nevertheless, it is fruitful to present the average development times for learning programs:

Development times to create one - hour of training:

1. **34:1 — Instructor-Led Training (ILT)**, including design, lesson plans, handouts, PowerPoint slides, etc. (Chapman, 2007).
2. **33:1 — PowerPoint to E-Learning Conversion** (Chapman, 2006a).
3. **220:1 — Standard e-learning**, which includes presentation, audio, some video, test questions, and 20% interactivity (Chapman, 2006a).
4. **345:1 — 3rd party courseware**. Time it takes for online learning publishers to design, create, test and package 3rd party courseware.
5. **750:1 — Simulations** from scratch. Creating highly interactive content (Chapman, 2006b).

6.
7. Development times to create one - hour of e-learning (The elearning Guild, 2002):
8.
4. **Simple Asynchronous:** (static HTML pages with text & graphics): 117 hours
5. **Simple Synchronous:** (static HTML pages with text & graphics): 86 hours
6. **Average Asynchronous:** (above plus Flash, JavaScript, animated GIF's. etc): 191 hours
7. **Average Synchronous:** (above plus Flash, JavaScript, animated GIF's. etc): 147 hours
8. **Complex Asynchronous:** (above plus audio, video, interactive simulations): 276 hours
9. **Complex Synchronous:** (above plus audio, video, interactive simulations): 222 hours

Note that these are averages, thus any one program might take as little one hour or up to 500 hours depending on the person's design skills and knowledge of the subject, amount of material to be converted, and the type of transformation needed.

SWOT Analysis

A SWOT analysis of the proposed new educational norm is necessary as it highlights at the same time all key features, characteristics and constraints of the proposal. Following this reference, the strengths, weaknesses, opportunities and threats are epitomised as follows:

Strengths

- Universal accessibility
- Global perspective
- Global sharing of knowledge
- Sustainability and environmental protection
- Affordable tuition fees
- Flexibility
- Continuous and life long learning
- Multicultural experience
- Degree building opportunity

Weaknesses

- Poor knowledge of technology
- Digital literacy
- Lack of faculty expertise
- Gradual and slow adaptation to change
- Start-up expenses
- Legal and bureaucratic constraints

Opportunities

- Increased student enrolment
- Continuous improvement process
- Space for constant development and expansion

- Use of new technologies
- Collaborative learning

Threats

- Traditional universities' skepticism
- Lack of cash flow
- No marketing and management experience
- Professional and regulatory issues
- Administration and decision-making
- Political obstacles
- Online safety / awareness

Implementation Plan

To fulfill its grand objectives, "Global Degree" will need to exploit the latest breakthroughs in education methodology and innovative learning that were highlighted. Delivering a complex class to thousands of people simultaneously demands a high degree of expertise.

The following implementation steps should be realized in order to forward the **"Global Degree Project"**:

- Establishment of an international steering committee
- Creation of an **International Consortium** in the form of a not for profit Organization under the name of **"Global Degree"**
- Institutionalization of the **"International Academic Credit (IAC)"**
- Development of a liaison network with Universities, International Organizations and Private and Public Entities
- Signing of the relevant "**International Academic Treaty"** which will put the **"Global Degree"** into effect

Concluding Remarks

The proposal for the establishment of a "Global Degree" which was presented in this paper, as it was highlighted in the introduction, will create by definition a new institutional model for higher education. It is also a concise and innovative proposal that will revolutionise international higher education and at the same time blend conventional learning with distance learning without abolishing any of the existing structures.

By utilizing all the latest innovative developments of technology and all the modern educational methodologies such as, open learning, the social media, mobile learning, blended learning, augmented reality etc., the "Global Degree" initiative will also bring a new stream of positive thinking regarding the future of education. As Plato said: "Do not train children to learning by force and

harshness, but direct them to it by what amuses their minds, so that you may be better able to discover with accuracy the peculiar bent of the genius of each."

Apart from the obvious benefits, graduates with a "Global Degree" will also be able to:

- Recognise and achieve goals and ambitions, especially in response to global challenges;
- Enhance their knowledge with a global perspective;
- Recognise that they belong to an international community and use this understanding effectively to understand multiculturalism;
- Practice their skills and creativity beyond their regional environments.

In conclusion, the "Global Degree" would lead to a better knowledge of the world around us and should assist us to better cope with it. As Salman Khan said: "This is the information revolution. It's crazy that every other field is getting revolutionised except education".

References

Carr Nicholas (2012), *The Crisis in Higher Education* [online]. Available at <http://www.technologyreview.com/featuredstory/429376/the-crisis-in-higher-education/> [Accessed 15 August 2013].

Chapman, B. and the staff of Brandon Hall Research (2007). *LCMS Knowledgebase 2007: A Comparison of 30+ Enterprise Learning Content Management Systems.* Published by Brandon Hall Research, Sunnyvale, CA.

Chapman, B. and the staff of Brandon Hall Research (2006a). *PowerPoint to E-Learning Development Tools: Comparative Analysis of 20 Leading Systems.* Published by Brandon Hall Research, Sunnyvale, CA.

Chapman, B. and the staff of Brandon Hall Research (2006b). *Online Simulations 2006: A Knowledgebase of 100+ Simulation Development Tools and Services.* Published by Brandon Hall Research, Sunnyvale, CA.

Gorbis Marina (2013), *The Future Of Education Eliminates The Classroom, Because The World Is Your Class* [online]. Available at <http://www.fastcoexist.com/1681507/the-future-of-education-eliminates-the-classroom-because-the-world-is-your-class> [Accessed 15 August 2013].

ITU (2013), *The World in 2013 - ICT Facts and Figures* [online]. Available at <http://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2013.pdf> [Accessed 15 August 2013].

OECD (2012), *Education Indicators in Focus - 2012/05 (May)* [online]. Available at <http://www.oecd.org/edu/50495363.pdf> [Accessed 15 August 2013].

Scholarix, (2011), *Can Google+ deliver on-line education?* [online]. Available at <http://www.scholarixsolution.com/wp/online-course-development-google/> [Accessed 15 August

2013].

Teachers with Apps (2013), *PLN, PBL, MOOC, APPR - Blended Learning, Flipped Classroom* [online]. Available at: <http://teacherswithapps.com/blog-pln-pbl-mooc-appr-blended-learning-flipped-classroom/> [Accessed 15 August 2013].

The eLearning Guild. (2002). *The e-Learning Development Time Ratio Survey* [online]. Available at: <http://www.elearningguild.com/pdf/1/time%20to%20develop%20Survey.pdf> [Accessed 27 October 2007].

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The potential of MOOCs to widen access to, and success in, higher education study: an historical comparison

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Abstract

Massive Online Open Courses (MOOCs) have become a much discussed development within higher education. Various claims and counter claims about the role and significance of MOOCs are being made, including their perceived role to widen access to higher education in both developed and developing countries. Much of this debate has focused on the philosophical and operational similarities and differences between the types of MOOCs that have emerged to date. In contrast there has been much less discussion about how such courses do, or do not, fit in with existing expectations of, and reporting on, higher education in term of increasing participation rates in higher education, of widening participation to members of society that have not traditionally participated in higher education, and of successful completion of higher education qualifications. Similarly, there has been little comparison of the role of MOOCs with the past experiences of larger online open and distance learning courses operated by 'open' universities around the world. This paper compares and contrasts the ways in which current MOOCs and one particular large population online Open University course from a decade earlier have served or might serve those objectives. The paper concludes that MOOCs, like open educational resources (OER), are forcing a re-conceptualisation of higher education study amongst all universities that was previously mainly found in 'open' universities and that they should also frame a re-conceptualisation of the measures widely used as part of national and international policy.

Keywords: Open educational resources; MOOCs; online courses; widening participation; policy and practice

Introduction

Massive Online Open Courses (MOOCs) have become a much discussed development within higher education under the aegis of open education (Daniel, 2012). Although the first MOOC appeared in 2009 it was not until 2011 and 2012 that they burst upon a wider public consciousness) and attracted significant policy attention (Universities UK, 2013. In one sense MOOCs are a technology-enabled development of the slightly longer-lived open educational resources movement that has provided access to many of the supporting materials used in higher education teaching programmes only previously available to registered students (Lane, 2008); in another sense they represent an expansion of existing online education practices being used with traditional students within higher education institutions in an effort to enhance the teaching and learning experience (Johnson et al, 2012; Yuan and Powell, 2013).

Various claims and counter claims about the role and significance of MOOCs are being made in online media (e.g. Boxall, 2012; Craig, 2012), including their degree of openness and their perceived role to widen access to higher education in both developed and developing countries (Liyanagunawardena et al, 2013). Much of this debate focuses on the philosophical and operational similarities and differences between the types of MOOCs that have emerged to date (Universities UK, 2013; Rodriguez, 2013) although nearly all are free to participants with no up-front fee, and all are open entry, in that no prior qualifications are required of the enrolees (although many do stress the expected level of prior educational attainment). In contrast there has been much less discussion about how such courses do, or do not, fit in with existing expectations of, and reporting on, higher education in term of increasing participation rates in higher education, of widening participation to members of society that have not traditionally participated in higher education, and of successful completion of higher education qualifications (e.g. OECD, 2013; EU, 2012). Similarly, there has been little comparison of the role of MOOCs in supporting these broader societal and governmental aims with the past experiences of doing so through open and distance learning courses operated by 'open' universities around the world. This paper reviews what is currently seen as commonly agreed socio-economic policy objectives for participation in higher education around the world and compares and contrasts the ways in which MOOCs and their large population open university counterpart courses serve or might serve those policy objectives. It does so by building upon conceptual frameworks that I have previously been applied to the role of open educational resources in widening participation to higher education study (Lane, 2012).

Policy objectives in widening participation in higher education

Widening participation in higher education has different dimensions. OECD regularly publish data on the proportion and type of people completing specified levels of education but not the numbers that participate for some period but do not 'complete' a particular level (e.g. OECD, 2013). The report is clear about the benefits of educational attainment:

Educational attainment is frequently used as a measure of human capital and the level of an individual's skills, in other words, a measure of the skills available in the population and the labour force. The level of educational attainment is the percentage of a population that has reached a certain level of education. Higher levels of educational attainment are strongly associated with higher employment rates and are perceived as a gateway to better labour opportunities and earnings premiums. Individuals have strong incentives to pursue more education, and governments have incentives to build on the skills of the population through education, particularly as national economies continue to shift from mass production to knowledge economies. (OECD, 2013, p28)

While it follows that widening access to, and attainment in, higher education has both a social and an economic dimension, as noted in this quote, the levels of educational attainment in a particular population may hide great inequalities in the chances and opportunities to do so throughout all sectors in society. Indeed, widening participation, rather than widening access, is a relatively new term used within higher education. For instance, within the European Higher Education Area

(EHEA)[31] and following the Bologna Declaration in June 1999 it was not until 2009 (EU, 2009) that they focussed on equitable access and completion:

The student body within higher education should reflect the diversity of Europe's populations. We therefore emphasize the social characteristics of higher education and aim to provide equal opportunities to quality education. Access into higher education should be widened by fostering the potential of students from underrepresented groups and by providing adequate conditions for the completion of their studies. This involves improving the learning environment, removing all barriers to study, and creating the appropriate economic conditions for students to be able to benefit from the study opportunities at all levels. (EU, 2009 p2)

They go on to note that widening participation shall also be achieved through lifelong learning and that intermediate qualifications within the first cycle at the national level can be a means of widening access to higher education.

Widening participation as a concept has been most debated and developed within UK policy and practice circles for over 10 years and what it encompasses has varied. Accordingly, there is no settled definition of widening participation but the Higher Education Funding Council for England recently stated on their website:

We see widening participation as a broad expression that covers many aspects of participation in HE, including fair access and social mobility.

We continue to emphasise - but with renewed focus – that addressing widening participation relates to the whole 'life-cycle' of a student in HE. This covers pre-entry, through admission, study support and successful completion at undergraduate level, to progress on to further study or employment. (Hefce, 2013)

This definition identifies that certain societal groups or communities may be excluded from current educational provision (the type of student) and that a number of factors may be involved (that involve the processes used to administer HE) and assumes equality of outcomes. While it may be simple to use socio-economic class as a major measure of potential exclusion it is another matter to disentangle the wide variety of reasons that effectively lead to this exclusion.

Inevitably, as outlined by Lane (2012), the chance to participate is constrained firstly by the absolute *availability* of places for study within a country (e.g. the number of higher educational institutions and the capacity of those institutions to teach students). It is constrained secondly by the *affordability* of opportunities (for instance study may involve great costs) and thirdly by its *accessibility* (such as being taught in a second or third language for the student or involving significant travel). Fourthly there is a question of *acceptability* of the opportunities on offer (for example the provision may be of poor quality, have an implied bias in the intellectual position taken by the teachers or it may be in subjects prospective students do not want to study). Nevertheless, even where provision is available, affordable, accessible and acceptable it may not be taken up by some less privileged groups in society for other, wider, physical, social, psychological and cultural reasons.

31 Currently involving 46 countries within Europe

The emerging shape of MOOCs

Background

MOOCs have not been been driven by explicit policy initiatives either at a national or institutional level. They have arisen through the social entrepreneurship of key individuals and/or institutions, each of whom probably has different short-term and long-term motivations and aspirations for running MOOCs. There has been extensive discussion and debate about them in the regular and social media spheres (e.g. Boxall, 2012; Craig, 2012), which indicate, in part, a desire to improve educational opportunities for learners on the basis that current opportunities are insufficient or ineffective. In contrast the academic literature on MOOCs has been sparse as they are generally so new that little time has elapsed for detailed studies to be undertaken, although that is quickly changing as special edition of journals[32] become devoted to MOOCs as do many conferences. Most articles to date have concerned cMOOCs which began earlier than the xMOOCs (Rodriguez, 2013) now gaining so much attention (the former are characterised pedagogically by less structure, facilitation rather than teaching and greater learner autonomy; the latter as online equivalents of classroom based teaching models). This newness, coupled with logistical difficulties in getting either pre-enrolment or exit data on the participants, means that it is difficult to compare MOOCs from different providers, let alone make comparisons with fee-based large online courses. However two notable sources give some early indications of who is attracted to these MOOCs and how the 'students' taking them perform.

MOOC and enrolled student characteristics

The first source of data on MOOCs and their student characteristics comes from a researcher who has been trying to aggregate any published information on MOOCs and in particular the stated completion rates where there are different assessment modes (Figure 1) and where the course length varies (Figure 2). This meta-analysis shows that reported completion rates are very low whatever the characteristics of the MOOC. Further, the general pattern across many of these MOOCs is that there is up to a 50% drop out in the first two weeks which drops down to 25% still participating through later weeks but with less than half that proportion actually completing the assignments. This pattern has caused much debate around what it means to participate in an open and 'free' course and whether completion is as meaningful measure of performance as it is for a credit-bearing course that is part of a qualification. An argument put forward is that as these courses are free, and they should be seen as more akin to academic books, public lectures or educational broadcasts where many may start to engage but few stay the course and those that do not still gain what they want from the experience. In other words the learner decides what is success for them, not the course provider or a policy maker.

32 For example see http://jolt.merlot.org/ or http://www.educause.edu/library/resources/research-practice-assessment-rpa-special-issue-moocs-and-technology

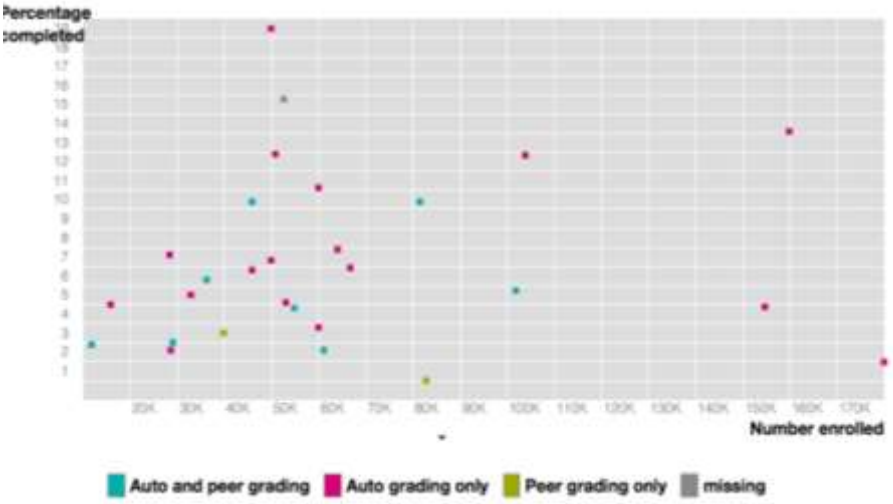

Figure 1 Graph of completion rates versus enrolment numbers for many MOOCs with different assessment modes (Source: Katy Jordan[33])

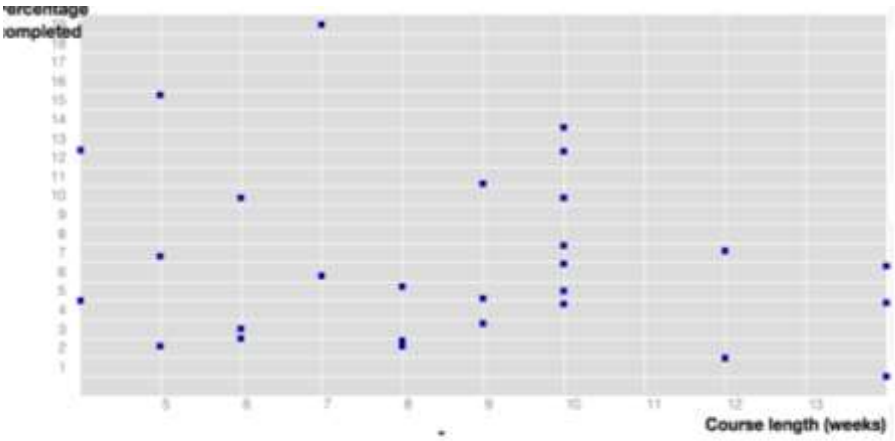

Figure 2 Graph of completion rates versus course length for many MOOCs (Source: Katy Jordan)

The second source is a report from the University of Edinburgh (Edinburgh @ MOOCS Group, 2013) who have run six MOOCs through Coursera[34] and surveyed 'students' on entry and, where possible, on exit from those courses. Figure 3 shows the age distribution of all the 'students' surveyed , which is very widespread, while Figure 4 details their highest previous level of academic study, which indicates that over 70% were well educated (five of the courses were at undergraduate entry level, one was at postgraduate level). Of these enrolees, 75% indicated this was their first experience of a MOOC and 53% were enrolled on only one MOOC. The majority were female (54%) but this varied widely across the six courses from different disciplines e.g. the E-Learning and Digital Cultures course

33 See http://moocmoocher.wordpress.com/2013/02/13/synthesising-mooc-completion-rates/
34 See https://www.coursera.org/

had 59% women. The 'students' came from many countries with 28.0% from the US, 11.0% from the UK, 4.6% from India down to 1.8% for Germany which was the 10th in the list by proportion. So overall the student body came from all around the globe, as has also been reported for most other MOOCs.

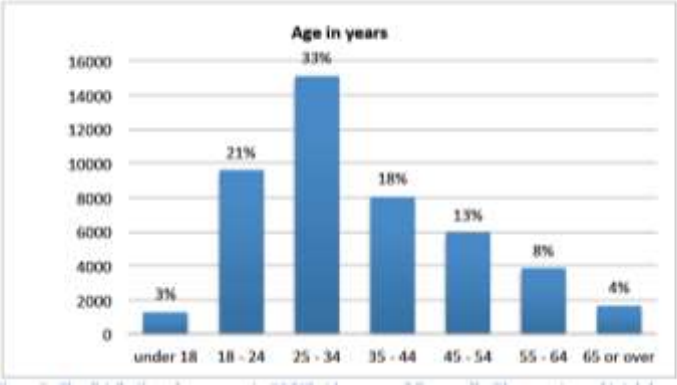

Figure 3 Age distribution on entry to first wave of Edinburgh MOOCs on Coursera (Source: Edinburgh @ MOOCS Group, 2013)

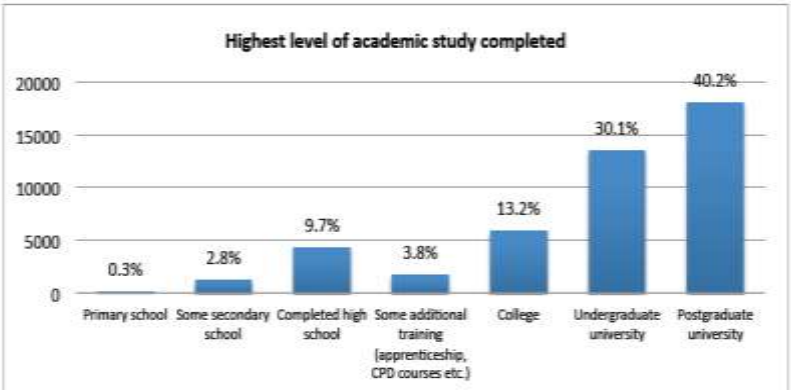

Figure 4 Level of academic achievement on entry to first wave of Edinburgh MOOCs on Coursera (Source: Edinburgh @ MOOCS Group, 2013)

The aspirations or motivations for enrolling and completing an Edinburgh MOOC varied with a greater number of reasons being shown on exit (Figure 6) compared to enrolment (figure 5), although interestingly it is the interest led rather than career/achievement led reasons that dominate both (the subject matter of the MOOCs will influence this in part but the high previous educational qualifications will do so in part as well). Whatever the reasons for studying 77% of completers surveyed found the courses met or exceeded their expectations and nearly 38,000 statements of accomplishment have been issued. It should be noted that the MOOCs were set up to allow study without active engagement with quizzes or social media, thus acting more like a free standing open

educational resource than a supported course (as with many MOOCs support during the course provided through a small number of teaching assistants who monitored forums and dealt with problems but not direct teaching).

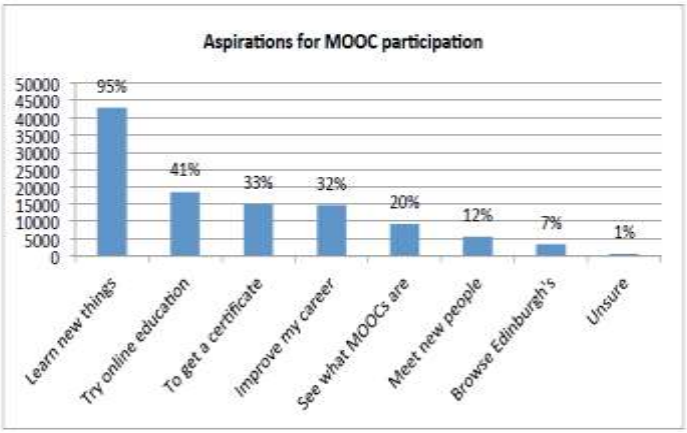

Figure 5 Aspirations on entry for the first wave of Edinburgh MOOCs on Coursera (Source: Edinburgh @ MOOCS Group, 2013)

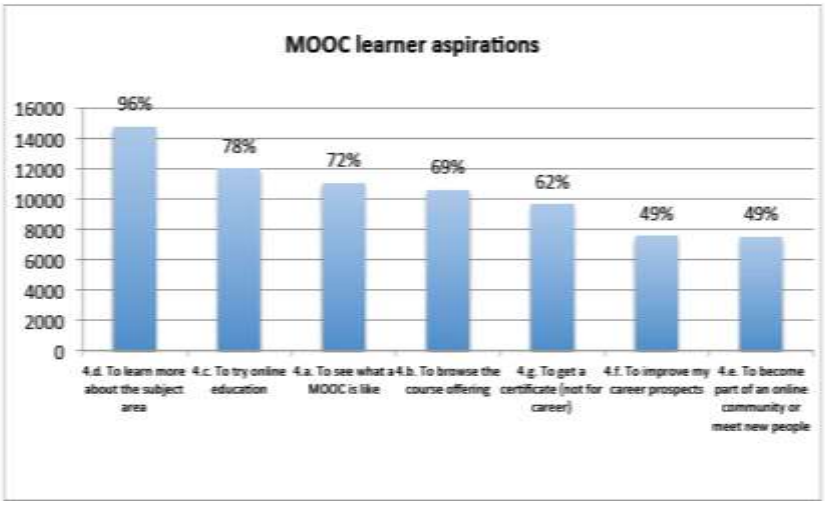

Figure 6 Aspirations on exit for the first wave of Edinburgh MOOCs on Coursera (Source: Edinburgh @ MOOCS Group, 2013)

The historical emergence of a large population online course at The Open University

Background

The OU has a long history of using different media technologies to deliver its teaching and support

students' learning[35] including the use of online/web-based technologies, beginning in the late 1980s and culminating in the first large scale credit-bearing fully 'online' course in 1999[36]. This latter course, *T171 You, your computer and net* is the focus of this section. I first set out its characteristics and student demographics and behaviour before going on in the next section to contrast it with the information on MOOCs from the previous section.

Many of the details of this course have been analysed before (Weller, 2000; Mason and Weller, 2000; Weller and Robinson, 2001) but I want to take a personal, historical perspective of it. While I was not directly involved in the course myself, I did take a particular interest in it as I took up the post of Dean of the course's host Faculty (the Technology Faculty at that time) on January 1 2000 and had to deal with its effects on both the Faculty and University.

To provide the context, the Technology Faculty prior to 2000 had had a single 60 CATS credits level 1 (first year course) called *T102 Living with Technology* that spanned six major technological/engineering topics including information technology and communications. With around 3-4,000 students per annum, it still delivered most of the teaching materials in printed texts and had face to face tutorials but it also included many computer based activities delivered on CD-ROM/DVD and used computer mediated communications for student to student and student to tutor discussions (on average there was one Associate Lecturer assigned to groups of 20 students which meant there were over 100 of them who tutored to and marked the assignments of their students). *T102* was coming to the end of its planned life and for various reasons the Faculty decided in the late 1990s that it did not want to develop a direct replacement course as it had done twice before in its history, but develop a set of more focussed 30 CATS credits courses. Three members of academic staff took this opportunity to propose that one of these courses needed to reflect the major technological development of our time – the Internet – both in terms of discipline content and mode of teaching and learning. John Naughton[37], author of the later books *A Brief History of the Future: The Origins of the Internet* and *From Gutenberg to Zuckerberg: What you really need to know about the internet* was the first; Martin Weller[38], later author of *Delivering Learning on the Net: the why, what and how of online education* and *The Digital Scholar: How Technology Is Transforming Scholarly Practice* was the second; and Gary Alexander[39], later author of *eGaia Growing a peaceful, sustainable Earth through Communications* was the third.

Course characteristics

This open entry 32 week course (as with all OU undergraduate courses at the time) was designed as three independent but linked 10 CATS credits blocks dealing respectively with becoming a confident computer user, the story of the personal computer and the story of the internet, and so was an entry-level course about information and communication technology delivered entirely over the web with online tuition[40] (Mason and Weller, 2000) and as with other course there were 20 students on

35 See http://www.open.ac.uk/researchprojects/historyofou/learning-teaching-and-research
36 See http://www.open.ac.uk/researchprojects/historyofou/story/1990s-decade-technological-expansion
37 Now Emeritus Professor of the Public Understanding of Technology at the OU
38 Currently Professor of Educational Technology at the OU
39 Now retired
40 Although there was one optional face to face tutorial provided at the outset of the course and there were two set books provided with wrap around academic material on the course web site.

average for each Associate Lecturer. The course team were also trying to take advantage of the internet as a delivery mechanism in terms of (1) quick production; (2) quick alteration and updating of course material; (3) interaction with, and feedback, from students: (4) interactive materials and (5) flexibility in study patterns (Weller, 2000). Owing to its innovative nature the course was piloted, starting in February 1999, with nearly 900 students (although the initial target was 500); but demand for the course was high and subsequently nearly 12,000 students enrolled on two presentations in 2000 (originally the plans were to have one February presentation capped at 8,500 students but demand forced us to put on a second May presentation for a further 3,500 students). This large demand caused many issues for operating on such a large scale online, as described by Weller and Robinson (2001), that feel very similar to some of the many issue faced by the pioneers of MOOCs in recent years, except for having to recruit over 600 Associate Lecturers to provide the dedicated support throughout the course presentation.

As we shall see in the next sub-section dealing with student characteristics and behaviours, it was recognised very early on that many students were mostly interested in the first block as at the time the general interest in using computers and surfing the internet was expanding greatly, and many did not complete the course. It was therefore decided to 'spin-off' the first module into a 10 CATS credit course (known as *TU170 Learning online: computing with confidence*[41]) first presented from May 2001 and a new block added to T171 dealing with e-business for February 2002 (2001 was the only other year with a May presentation). The course itself was replaced in 2005 by a similar 30 CATS credit course *T175 Networked Living: exploring Information and Communication Technologies*.

Student characteristics

I can only give some headline figures here but in terms of numbers of students starting and finishing T171 two trends stand out. First, the explosive level of interest in its early years and the rapid drop off in numbers (some of this could be accounted for by the spin off course TU170 but this is only about 1500 students per annum – the rest was almost certainly a drop off in interest). The second was the much lower completion rate than the Faculty average showing much less desire to complete or to progress on to another module. In part this may reflect the nature of the students as indicated in Table 2 and discussed below including a fair proportion with no direct financial commitment. Even the general completion rates were seen as being too low and since then many efforts have been made to improve the average completion rates above 70%. Interestingly, just as with MOOCs the 'decay-curve' pattern of withdrawal from OU courses is similar in that most drop out in the first 2-3 weeks and much fewer after one third of the way into the course (which was the last point they could get a partial refund on their course fee).

41 And which co-incidentally fitted in with a new programmeme of 10 CATS credit courses called Relevant Knowledge all of which were run as online courses and covered a variety of topics of variable popularity

Table 1 Initial course populations and completions by year (Source: OU internal documents)

Year	1999	2000	2001	2002	2003	2004
No. students at course start	844	11,193	11,524	9,018	5,351	3,032
Percent sat exam – T171	36.6	45.0	42.4	42.4	46.6	47.2
Percent sat exam – all Technology Faculty undergraduate courses	62.1	54.6	53.2	54.4	58.0	62.6

When we look at some of the demographics of the students taking T171 in its first two years as shown in Table 2 it can be seen that the T171 pilot in 1999 was different from the larger scale presentations in 2000 and both were different to another entry level course in the Faculty. Interestingly T171 attracted a greater proportion of current OU students with a higher proportion of female students. It should also be noted that in 2000 13% of all T171 students were in receipt of financial assistance whereby theirs course fee was paid for them.

Table 2 Major characteristics of T171 students compared to a 60 CATS credit level 1 course (Source: OU internal documents)

Percentage registered	**T171 in 1999**	**T102 in 1999**	**T171 in 2000**
All students			
New	70	86	73
Continuing	30	14	27
Age range			
< 25	5	11	8
25-29	10	22	16
30-39	31	44	40
40-49	25	17	23
50-59	17	4	9
60-64	5	1	2
>65	5	1	2
Gender			

Male	55	79	65
Female	45	21	35
Ethnic origin			
Asian	2	1	2
Black	1	3	2
White	72	74	72
Disability			
Disability	6	3	4
Previous qualifications			
Low	7	7	10
Lowish	29	40	37
Medium	16	25	19
High	37	19	26

If we now look at what students completing T171 thought about the course it is surprising that so many students rate it more highly than the Faculty average for most factors although the amount of time needed to study it was much perceived as much greater. Of course it would be interesting to have the view of those that did not complete but it has always proved difficult to get responses from both passive withdrawals (ones who don't let us know) and even active withdrawals (ones that do) with the latter most often citing 'life events' as getting in the way of their studies and not the content or nature of delivery of the course.

Table 3 Percentage of *completing* T171 students agreeing with statement (Source: OU internal documents)

T171 completers	2000		1999*	
	T171	Technology overall	T171	Technology overall
The course met its aims and objectives *very* successfully	29.4	27.1	32.1	21.3
I was *very* satisfied with overall course quality	35.7	27.9	44.4	33.5

I was *very* satisfied with the quality of tuition.	22.3	35.5	30.1	32.2
I found the course *very* interesting	48.4	38.2	54.1	41.4
The time spent study was *a lot more than expected.*	50.8	34.0	59.0	31.8
I found the academic level *very* difficult	4.0	8.1	8.1	14.5
I would recommend the course to another student	87.9	76.3	90.4	82.9

Discussion

It is tricky to draw very firm parallels between current day MOOCs and their fore runner massive online courses within open universities. While both are open entry the fee for a credit bearing course tied to grant support and the nature of tuition and support meant the OU course was much more geographically focussed (most students were from the UK); most students were already distance learners (probably not the case with MOOCs); and most were signing up for a long duration course lasting 32 weeks (in contrast most MOOCs last five to ten weeks). Nevertheless, there are a number of similarities and differences which it is worth commenting on, particularly in relation to access and achievement in higher education study.

First, for T171, like many early xMOOCs, the medium was the message. The extensive interest that surprised the early course providers in both cases was in subjects that related very much to computers and communications technologies. In both cases too online courses have quickly moved into many other disciplines.

Second, interest in the topic seemed to be a prime motivating factor rather than any vocational or job related factors. However, whereas that interest in MOOCs has been mostly with the already well educated, the interest in the OU course was from as diverse a background as most other OU courses. The fact that the course was clearly part of the existing credit bearing provision rather than a separate adjunct to it might account for some of this difference.

Third, completion rates were much higher for the OU course than nearly all MOOCs to date. Again, the fact that T171 was part of existing credit bearing provision would account for this as well as the higher levels of direct tutorial support provided by Associate Lecturers compared to the much lower levels of personal support given in MOOCs.

Fourth, how do these observations on massive online courses look against the framework of availability, affordability, accessibility and acceptability previously used for OERs (Lane, 2012). There is little doubt that MOOCs, like OERs, have increased greatly in *availability*. While coverage of topics may not be comprehensive there is no shortage of them. In contrast, there were no other courses like T171 available in the UK and probably worldwide at the time. In terms of affordability then yet again MOOCs do well as there is mainly the costs of accessing them and no fee to enrol. While the

fee for T171 was less than £200 at the time, and while some students from disadvantaged backgrounds could get assistance with their fee, accessing a personal computer and installing an internet connection at home, *affordability* is more of an issue but also relates to *accessibility*. While a course might be available does not make it easily accessible for some, the costs of a PC and internet connection can vary greatly by country and represent a significant proportion of their income. Equally, many MOOCs do not meet basic W3C internet accessibility standards, nor do they meet the more demanding accessibility requirements of national legislation, such as the Disability Discrimination Act 1995 in the UK[42]. The fact that most MOOC participants to date have been well educated may point to them being useful for well educated and privileged people that can cope with the much lower levels of support available in these courses. While the OU's open entry policy means that we take in many students from nationally recognised widening participation categories we find that they require much more support than other students and even then their completion rates and levels of attainment are less than students from more advantaged backgrounds. In many case this extra support is needed to overcome the often self perceived views of such students that they are not capable of studying at this level or by these means. In other words the (perceived) *acceptability* of the provision to the student is low. In the OU we also try to advise such students on their best options and provide specific access courses to scaffold their entry into full degree level study. None of this is currently available in the MOOC world where it is very much take it or leave it provision and they have no obligation to meet the needs of those less able or capable of taking the courses.

Finally, what does this mean for policy on widening access to, participation in and achievement from higher education? Since MOOCs are not credit bearing courses as such and even where there might be such recognition offered for a fee it would require passing many of them to complete a full degree, MOOCs do not readily seem to offer scope for meeting a major measure of performance of widening participation and attainment. MOOCs do offer scope to widen access to higher education level study in life-long learning context but to understand the track such developments would require a substantive change in the way that both participation rates and level of attainment are currently measured. Equally there would need to be consistent and comparable ways of collecting and presenting such information if it is to be useful in both monitoring and shaping educational policy aspirations as noted at the front of this paper. Even before we get to that stage it is also going to be necessary for MOOC providers to do more to monitor and assess who is taking their MOOCs, what might be the barriers to participation by certain groups in different countries, and whether they truly see it as part of their mission to adapt their courses to meet the needs of the disadvantaged as well as the advantaged members of society rather than assume that big numbers from many countries truly equates to widening access to higher education or higher education study.

Conclusions

This paper has examined a limited set of data in order to compare some features of current large population MOOCs, as non credit bearing short courses, with a large population credit bearing online course run as part of an open university's standard programme more than 10 years earlier. It has concluded that MOOCs, like OER, are forcing a re-conceptualisation of higher education study amongst all universities that was previously mainly found in 'open' universities and that there is also an urgent need to re-conceptualise the measures of performance widely used as part of national and

42 See http://www.legislation.gov.uk/ukpga/1995/50/contents

international policy on widening access to and participation in higher education.

References

Boxall, M. (2012) MOOCs: a massive opportunity for higher education, or digital hype? Retrieved from http://www.guardian.co.uk/higher-education-network/blog/2012/aug/08/mooc-coursera-higher-education-investment

Craig, R. (2012) Elitism, equality and MOOCs. Retrieved from http://www.insidehighered.com/views/2012/08/31/massive-open-courses-arent-answer-reducing-higher-ed-inequality-essay

Daniel, J. and Uvalić-Trumbić, S. (2012) *What are MOOCs and will they change higher education?* Paper given at Korea National Open University, 26th September, 2012. Retrieved from http://sirjohn.ca/wordpress/?page_id=29

Hefce (2103) What do we mean by widening participation? Retrieved from http://www.hefce.ac.uk/whatwedo/wp/policy/

EU (2009) *Communiqué of the Conference of European Ministers Responsible for Higher Education*, Leuven and Louvain-la-Neuve, 28-29 April 2009, IP/09/675. Retrieved from http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/675&format=HTML&aged=0&language=EN&guiLanguage=en

EU (2012) The European Higher Education Area in 2012: Bologna Process Implementation Report. Retrieved from http://www.ehea.info/Uploads/(1)/Bologna%20Process%20Implementation%20Report.pdf

Johnson, L. Adams, S. and Cummins, M. (2012), The New Media Consortium Horizon Report: 2012 Higher Education Edition. Austin, Texas. Retrieved from http://www.nmc.org/pdf/2012-horizon-report-HE.pdf

Lane, A. (2008) Widening Participation in Education through Open Educational Resources, pp 149-163. In Eds. Ilyoshi, T. and Vijay Kumar, M.S., Opening Up Education: The Collective Advancement of Education through Open Technology, Open Content, and Open Knowledge, MIT Press.

Lane, A. (2012) A review of the role of national policy and institutional mission in European Distance Teaching Universities with respect to widening participation in higher education study through open educational resources, Distance Education, 33 (2), pp. 135-150.

Liyanagunawardena, T, Williams, S. and Adams, A. (2013) The impact and reach of MOOCs: A Developing Countries' perspective, eLearning Papers, 33, May 2013, 8 pp.

OECD (2013) Education at a Glance 2013: OECD Indicators, OECD Publishing. Retrieved from http://www.oecd.org/edu/skills-beyond-school/

Mason, R. and Weller, M. (2000) Factors affecting students' satisfaction on a web course, *Australian Journal of Educational Technology*, 16 (2), pp. 173-200

MOOCs @ Edinburgh Group (2013) MOOCs @ Edinburgh Report #1, 34 pp. Retrieved from https://www.era.lib.ed.ac.uk/handle/1842/6683

Rodriguez, O. (2013) The concept of openness behind c and x-MOOCs (Massive Open Online Courses), Open Praxis, 5 (1) pp. 67-73

Universities UK (2013) Massive open online courses: higher education's digital moment? 32pp, ISBN 978-1-84036-285-5. Retrieved from www.universitiesuk.ac.uk

Weller, M.J. (2000) Creating a Large-scale, Third Generation, Distance Education Course, Open Learning, 15 (3), pp. 243-252

Weller, M. and Robinson, L. (2001) Scaling up an Online Course to Deal with 12,000 Students, Education, Communication and Information, 1 (3), pp. 307-323

Yuan, L. and Powell, S. (2013) MOOCs and disruptive innovation: Implications for higher education, eLearning Papers, 33, May 2013, 8 pp.

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Open educational resources for all? Comparing user motivations and characteristics across The Open University's iTunes U channel and OpenLearn platform.

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Abstract

With the rise in access to mobile multimedia devices, educational institutions have exploited the iTunes U platform as an additional channel to provide free educational resources with the aim of profile-raising and breaking down barriers to education. For those prepared to invest in content preparation, it is possible to produce interactive, portable material that can be made available globally. Commentators have questioned both the financial implications for platform-specific content production, and the availability of devices for learners to access it (Osborne, 2012).

The Open University (OU) makes its free educational resources available on iTunes U and via its web-based open educational resources (OER) platform, OpenLearn. The OU's OER on iTunes U reached the 60 million download mark in 2013; its OpenLearn platform boasts 27 million unique visitors since 2006. This paper reports the results of a large-scale study of users of the OU's iTunes U channel and OpenLearn platform. A survey of several thousand users revealed key differences in demographics between those accessing OER via the web and via iTunes U. In addition, the data allowed comparison between three groups: formal learners, informal learners and educators.

The study raises questions about whether university-provided OER meet the needs of users and makes recommendations for how content can be modified to suit their needs. As the publishing of OER becomes core to business, we reflect on reasons why understanding users' motivations and demographics is vital, allowing for needs-led resource provision and content that is adapted to best achieve learner satisfaction, and to deliver institutions' social mission.

Keywords: open educational resources, free educational resources, iTunes U, OpenLearn, informal learning

Introduction

The creation of OER, whereby individuals and educational institutions make their learning content freely available, has grown rapidly over the last decade. This ranges from tutors posting lecture notes online, to philanthropically-funded content production projects and educational institutions resourcing free content creation as business as usual activity. The Open University (OU) uses several platforms to share its open and free content, the main two being OpenLearn and iTunes U.

Since the launch of the iTunes U platform in 2007, educational institutions have exploited it as an additional channel to provide free educational resources. In recent years it has developed from merely a platform for video and lecture content, to a host for entire courses and subscribable subject areas that go beyond traditional print media. iTunes U was designed to appeal to educators at all levels, though it is largely dominated by undergraduate content. The platform was originally developed for use to teach privately to groups of students who log in with a password, but it is now predominantly used to distribute free content. Whilst educational institutions must apply to Apple to add content (and not all are accepted) it has allowed many universities to test the water with regard to producing podcasts for potentially massive audiences – podcasts that can be downloaded and watched/listened to offline. There are now over 600 institutions delivering content via iTunes U, though less is known about who is using it and why.

The OU has used the iTunes U platform since June 2008 to initially deliver Collections of audio visual content, adding ebooks (423 to date) in October 2010 and iTunes U Courses (79 to date) in January 2012. The iTunes U Courses feature a number of interactive ebooks published by the OU on Apple's iBookStore. Many of the audio and video files are elements of larger projects and courses produced for its fee-paying students, or specifically commissioned to be OER and shared across several open platforms i.e. OpenLearn and YouTube as well as iTunes U. The interactive courses include embedded audio and video files as well as instructor notes and assignments. As an institution specialising in producing higher education (HE) content for distance learners, the aim of this approach is a natural extension of the University's mission to further make available its OER, but also to reach a growing population of mobile device users. At time of writing, there have been 63.7 million downloads and 8.6 million visitors to the OU on iTunes U site, and 2.6 million subscriptions to OU on iTunes U Courses (to July 2013) (internal OU data).

OpenLearn (www.open.edu/openlearn) is the OU's web-based platform for free educational resources (many of these are openly licensed) and was launched in 2006. It hosts hundreds of online courses and videos and is accessed by over 3 million users a year. It also serves as the medium through which the OU promotes its partnership with the BBC and the related broadcasting and free open access courses and content that are created as co-productions with them. Since its launch, OpenLearn has received 27 million unique visitors (internal OU data) and has developed from being a platform that hosts units from decommissioned undergraduate and postgraduate courses, to one which hosts commissioned interactive games, videos, blogs, podcasts and which offers users the opportunity to order free printed materials. Much of the course extract content is developed using structured authoring tools and then made available to users in multiple formats such as Microsoft Word and epub (that can be opened by ebook readers).

The development of OpenLearn was initially funded by the William and Flora Hewlett Foundation in

2006 along with its sister website OpenLearn Works, a platform where NGOs and philanthropically-funded projects and groups can publish, remix and reuse courses targeted to specific populations. With the end of the Hewlett Foundation grant, OpenLearn and OpenLearn Works (formerly known as LabSpace) became mainstream activities for the OU and now form part of one of the University's strategic priorities – 'the Journey from Informal to Formal learning' – as part of the OU's commitment to widening participation. The OU aims that 5% of each of its courses should be made available as OpenLearn content in whole, meaningful units, some of which are embellished with interactive quizzes and additional audio visual content.

For the period August 2012 to May 2013, the OU reports a one percent click-through rate from its iTunes U content to an OU web domain. For OpenLearn, over 10% of users click through to the 'Study at the OU' webpage to learn more about becoming an OU student.

For those prepared to invest in content preparation, it is possible to produce interactive, portable open access material that can be made available globally and offering benefits in terms of social mission, brand awareness and increased registration to paid-for provision. However, it has recently become clear that developing and releasing such content should now involve addressing the needs of mobile device users. Not surprisingly, commentators have questioned both the financial implications for platform-specific content production and the availability of devices for learners to access it (Osborne, 2013).

With the increase in access to mobile multimedia devices and the rise of smartphones more people are able to go online from a mobile device. According to Pew Internet (2012), 55% of Americans said they had used a mobile device to access the Internet in 2012. The study reported that of these, 21% said it was the primary way that they access the Internet. This is a large and growing audience whose needs are not being met by traditional desktop experiences. (Pew Internet, 2012)

McGrane (2013) argues that while users have access to a traditional desktop computer and a broadband connection at home, work or school, these may be shared devices and/or simply not private. For a personal, connected device, people are choosing to rely on their mobile. (McGrane, 2013)

The number of UK smartphone users also continues to grow rapidly. It is estimated that there will be 30.9 million smartphone users in the country by the end of 2013 representing 48.4% of UK residents and 60.4% of UK mobile phone users (eMarketer, 2013). Based on new data pointing to faster than expected smartphone adoption, eMarketer revised its estimate for the total number of UK smartphone users in 2013 upward by 6.9 million.

Methods

This paper reports the results of a large-scale study of users of the OU's iTunes U channel and OpenLearn platform. The project is partly resourced by the OU and partly by the Hewlett-funded Open Educational Resources Research Hub (OERRH) project (www.oerresearchhub.org). The latter sets out to establish the impact of OER across four educational sectors: school, college, higher

education and informal learning. For the purposes of this study, we define this fourth sector – informal learning – as learners who use OER to augment existing knowledge for study or for teaching, or who are studying for personal benefit and enjoyment, or as Cross describes 'the unofficial, unscheduled, impromptu way people learn.' (Cross, 2007, p. 15) The OERRH is working with a number of collaborating projects internationally to establish the impact of OER, by linking with existing research data and collecting new data. For the informal strand of this work the OU, who is leading the OERRH project, chose to focus on its own platforms for some of this research into informal users of OER. This study forms part of that strand.

Two identical surveys were produced and distributed across the OpenLearn platform and iTunes U channel in the following ways:

- OpenLearn: links to the survey were placed in areas of the website that host course content, rather than commissioned editorial pieces. The aim of this approach was to reach those who are using the platform to study course excerpts or whole courses rather than dipping into short videos or editorial pieces, and thus better locate educators, formal and informal learners.
- iTunes U: links were placed in all of the OU's 79 courses on iTunes U. Again, the aim was to reach users who were engaging with entire courses rather than those downloading single video and audio files.

The surveys were live for three months from April to June 2013 and were hosted on the Survey Monkey system.

Findings

A survey of several thousand users revealed key differences in demographics between those accessing free educational resources via OpenLearn and via iTunes U. The number of respondents for the iTunes U survey over the three-month period was 2,200; for OpenLearn it was 904.

Demographic comparisons

The following table shows a summary of the demographic data for both platforms.

Table 1: Comparisons of demographic data

	iTunes U	**OpenLearn**
What is your age?	**577** (27%) 0-24 yrs **947** (44%) 25-44 yrs **495** (23%) 45-64 yrs **125** (6%) Over 65 yrs	**120** (14%) 0-24 yrs **333** (38%) 25-44 yrs **330** (38%) 45-64 yrs **88** (10%) Over 65 yrs

What is your gender?	**1345** (62%) Male **779** (36%) Female **35** (2%) Other*	**364** (41%) Male **515** (58%) Female **2** (>1%) Other*
Where do you live?	**311** (14%) UK **524** (24%) US **1324** (62%) RoW	**533** (61%) UK **27** (3%) US **308** (35%) RoW
Is English your first spoken language?	**1138** (53%) Yes **1021** (47%) No	**682** (77%) Yes **207** (23%) No
What is your highest educational qualification?	**331** (15%) School **121** (6%) Vocational **366** (17%) College **604** (28%) Undergrad **617** (28%) Postgrad **120** (6%) None	**139** (16%) School **78** (9%) Vocational **199** (23%) College **227** (26%) Undergrad **178** (20%) Postgrad **52** (6%) None
What is your employment status? (Tick all that apply)	**1428** (66%) Employed **126** (6%) Voluntary **577** (27%) Student **169** (8%) Unwaged **49** (2%) Disabled unwaged **156** (7%) Retired	**504** (58%) Employed **40** (5%) Voluntary **120** (14%) Student **135** (16%) Unwaged **37** (4%) Disabled unwaged **127** (15%) Retired
Do you have a disability?	**281** (13%) Yes **1878** (87%) No	**168** (19%) Yes **741** (84%) No

* Other = 'transgender' and 'prefer not to say'.

When comparing the two platforms, key points to note from the demographic data are that:

- **OpenLearn** users are predominantly located in the UK; compared to iTunes U users, they are slightly older, more fill the categories of unwaged and retired and more are declaring a disability. In addition, OU data (January to July 2013) shows that 82% are visiting OpenLearn via a desktop or laptop computer and 18% via a mobile device;

- **iTunes U** users are predominantly outside the UK and US. They are slightly younger than OpenLearn users, the majority are employed, and fewer are disabled (the prevalence of disability rises with age). Internal OU data (January to April 2013) shows that 85% are connecting to OU content on iTunes U via mobile devices.

Disabled users

Users were asked the question 'Do you consider yourself to have a disability?'. Those who answered 'Yes' were asked to define which disability or disabilities they had. The choices given were the same definitions used by the OU for gathering data about its student population.

The data from this study shows that more OpenLearn users consider themselves to have a disability (19%) than iTunes U users (13%). This could be partly attributable to the iTunes U group being younger overall. It may also be because iTunes U users are predominantly not in the UK or US (62% rest of world) where access to handheld devices and educational opportunities may be more limited to those with disabilities in certain countries. For iTunes U, the sample represents a group of wealthy, non disabled, employed, educated users.

Table 2: Comparison of qualifications across disabled and unwaged respondents

	iTunes U respondents			OpenLearn respondents		
	total	with a disability	who are unwaged	total	with a disability	who are unwaged
	2159 (41 skipped)	**281**	**428**	**873 (31 skipped)**	**143**	**135**
School leaving qualification (16-18 years)	15% 331	23% 64	16% 70	16% 139	18% 25	22% 29
Vocational qualification (e.g. practical or trade-based)	6% 121	14% 39	7% 30	9% 78	12% 16	13% 17
College diploma or certificate	17% 366	22% 61	20% 87	23% 199	26% 36	17% 22
Undergraduate/Bachelors University degree	28% 604	15% 42	24% 103	26% 227	23% 32	22% 29
Postgraduate/Graduate School University degree	29% 617	19% 53	25% 105	20% 178	11% 15	14% 18
No formal qualification	6% 120	8% 22	8% 33	6% 52	9% 13	12% 15

In Table 2 above, we have classified 'unwaged' refers to users who are retired, working in the voluntary sector, unemployed, disabled unemployed or are studying. The green figures highlight where disabled or unwaged users are above the overall percentage for that qualification category, the red figures show where they are below the overall percentage.

Data shows that for both iTunes U and OpenLearn users, those with a disability or who are unwaged are less likely to have achieved undergraduate or postgraduate degree level qualifications and are represented more highly as having no formal qualifications. Non disabled respondents using iTunes U are significantly better qualified than those declaring a disability. This is also true of OpenLearn users, but the difference is smaller.

Non-native English speakers

A demographic analysis of those for whom English is not their first spoken language across both platforms is given below.

Table 3: Comparison of age range for non-native English speakers

iTunes U	**OpenLearn**
48 (23%) 0-24 yrs **114** (55%) 25-44 yrs **39** (19%) 45-64 yrs **5** (2%) Over 65 yrs	**296** (29%) 0-24 yrs **524** (51%) 25-44 yrs **166** (16%) 45-64 yrs **28** (2.74%) Over 65 yrs

The location of non-native English speakers in English-speaking countries implies an immigrant population or those in immigrant families. This is shown in the Total figures below in Table 4.

Table 4: Location of non-native English speakers in English-speaking countries

	iTunes U		**OpenLearn**	
	Total responses to survey by country	English not first language	Total responses to survey by country	English not first language
Australia	4.12% (n=89)	1.08% (n=11)	0.8% (n=7)	0.5% (n=1)
Caribbean (14 countries)	0.41% (n=9)	0.10% (n=1)	0.22% (n=2)	0% (n=0)
North America (2 countries)	29.52% (n=637)	6.66% (n=68)	3.78% (n=33)	3.5% (n=7)
South Africa	0.93% (n=20)	0.69% (n=7)	0.34% (n=3)	0% (n=0)
United Kingdom	14.41% (n=311)	2.65% (n=27)	61.31% (n=534)	23% (n=46)
Total	**49.39% (n=1066)**	**11.18% (n=114)**	**66.45% (n=579)**	**27% (n=54)**

Figures 4 and 5 show data regarding the employment status of non-native English speakers. It shows that for both groups, the majority are mostly employed and/or studying.

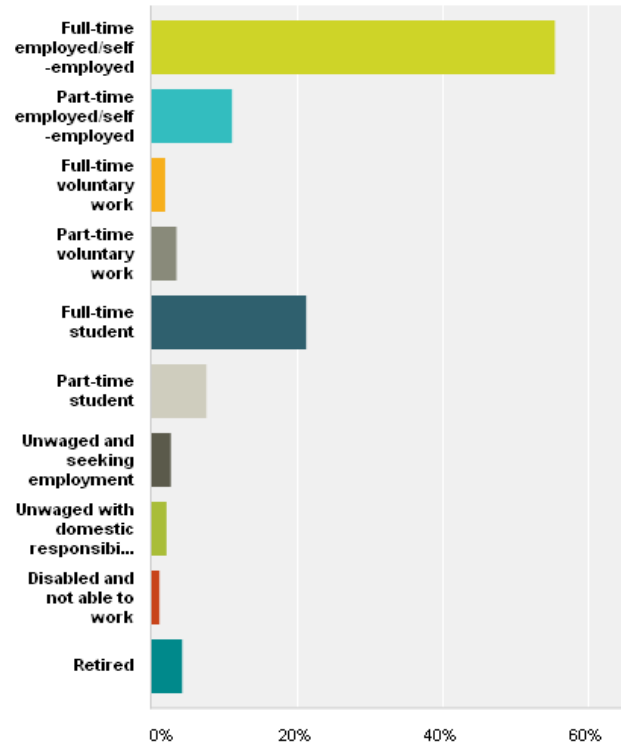

Figure 4: iTunes U users: employment status of non-native English speakers

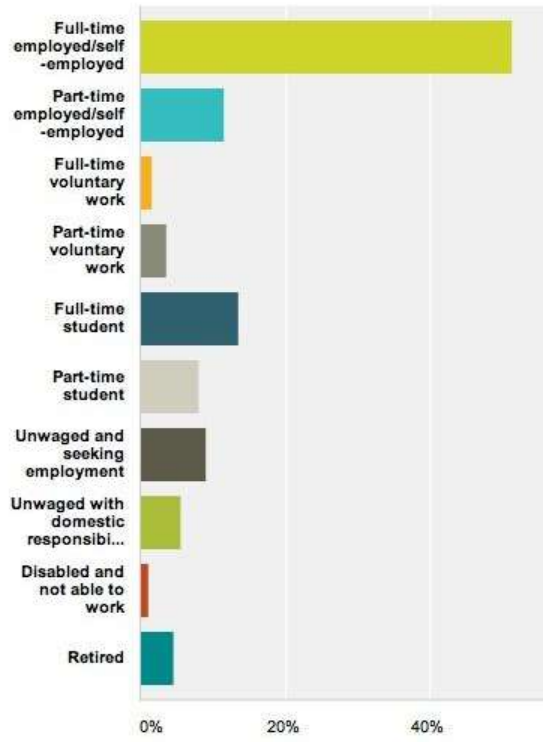

Figure 5: OpenLearn users: employment status of non-native English speakers

Figures 6 and 7 show data regarding the highest educational qualification of non-native English speakers. Data shows that for both groups, the majority are educated to undergraduate and postgraduate degree level, with iTunes U users having a higher percentage educated to postgraduate level despite a lower age range compared with OpenLearn.

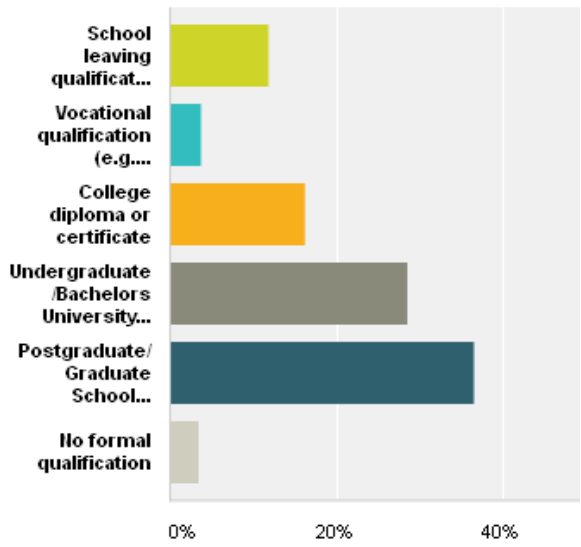

Figure 6: Highest educational qualification of non-native English speakers: iTunes U

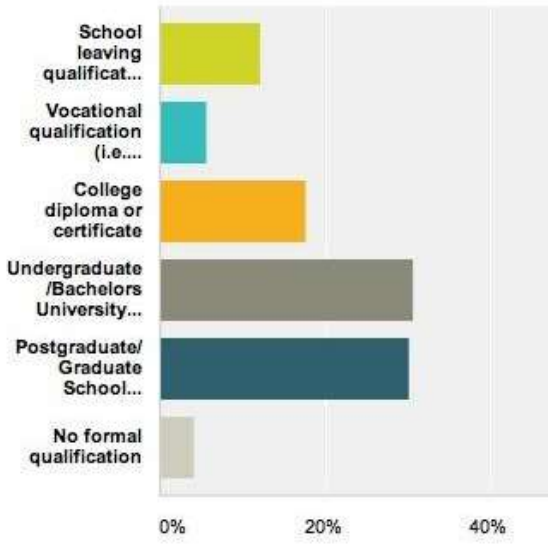

Figure 7: Highest educational qualification of non-native English speakers: OpenLearn

Formal learners, informal learners and educators

The data from both surveys was also analysed in order to allow comparison of three groups, formal learners, informal learners and educators, to examine their motivation for using free educational resources and their future intentions. Table 5 shows that informal learners are the largest group for both platforms.

Table 5: Informal learners, formal learners and educators using both platforms

	iTunes U	**OpenLearn**
Informal learners	42%	48%
Formal learners	38%	33%
Educators	20%	16%
Both learner and educator	18%	23%

Users were asked what other free educational sites or resources that they use (Figure 8).

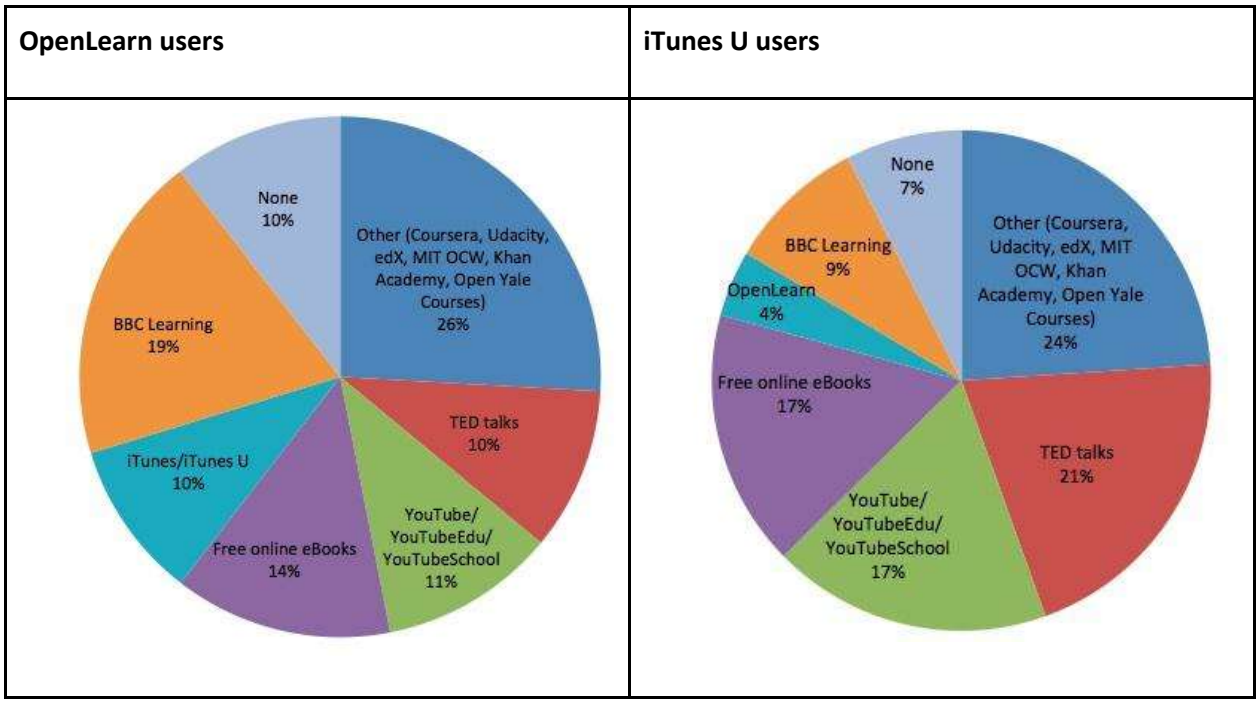

Figure 8. Respondents' answers to 'Which of the following free educational sites or resources do you use in addition to iTunes U/OpenLearn?'. Users could select more than one answer.

The data shows that over 90% of respondents use other free educational resources. The predominantly UK-based users of OpenLearn are more familiar with BBC Learning (19%) than are

iTunes U users (9%). Comparably, the predominantly internationally-spread users of iTunes U content are more familiar with TED Talks (21%) than are OpenLearn users (10%).

Table 6. What is your interest in the content you have used/downloaded?

	iTunes U	**n=**	**OpenLearn**	**n=**
Personal interest	81.58%	1,590	81.74%	179
My professional development	40.28%	785	39.73%	87
Relevant to my studies	27.86%	543	19.63%	43
Relevant to my work	22.47%	438	30.59%	67
For the purpose of sharing with others	12.88%	251	17.35%	38
For the purpose of teaching others	11.85%	231	14.61%	32
Family interest	5.95%	116	8.22%	18
Relevant to voluntary work	4.82%	94	10.05%	22
Commercial interest	4.05%	79	1.83%	4

Highlighted cells in Table 6 above show the top three most popular reasons for users' interest in the free educational resources that they had downloaded/used, with 'personal interest' and 'my professional development' being the most selected reason for both platforms. The smallest category for both groups was those who declared a commercial interest in the content.

Students and educators were asked what types of open resource they were using for the purposes of studying and teaching, respectively, from any open platform. Data given in Table 7 below shows that:

- for learners, open textbooks, whole courses and video lectures are most commonly used for learning; and
- for educators, open textbooks, elements of a course and videos are most commonly used for teaching.

Table 7. Types of resource used by educators for teaching and by formal learners for learning (respondents could select more than one option)

	All educators	**All formal learners**
Open textbooks or ebooks	53% n=193 (iTunes U) 41% n=18 (OpenLearn)	86% n=501 (iTunes U) 91% n=51 (OpenLearn)
Whole courses	16% n=57 (iTunes U) 14% n=6 (OpenLearn)	77% n=338 (iTunes U) 95% n=37 (OpenLearn)
Elements of a course (e.g. a unit/ module)	30% n=109 (iTunes U) 48% n=21 (OpenLearn)	75% n=271 (iTunes U) 81% n=34 (OpenLearn)
Videos	53% n=191 (iTunes U) 48% n=21 (OpenLearn)	79% n=439 (iTunes U) 80% n=36 (OpenLearn)
Audio podcasts	27% n=99 (iTunes U) 21% n=9 (OpenLearn)	68% n=280 (iTunes U) 63% n=20 (OpenLearn)
Images	40% n=146 (iTunes U) 30% n=13 (OpenLearn)	81% n=339 (iTunes U) 84% n=27 (OpenLearn)
Interactive games	17% n=60 (iTunes U) 9% n=4 (OpenLearn)	52% n=143 (iTunes U) 60% n=12 (OpenLearn)
Video lectures/tutorials	27% n=97 (iTunes U) 23% n=10 (OpenLearn)	78% n=350 (iTunes U) 87% n=32 (OpenLearn)
Quizzes	18% n=66 (iTunes U) 27% n=12 (OpenLearn)	77% n=275 (iTunes U) 81% n=25 (OpenLearn)

Users were asked what they were likely to do following downloading materials from the OU on iTunes U or viewing them on OpenLearn. Results are given in Tables 8 and 9. Both sets of respondents rated highly that were more likely to take a free online course, download more materials and recommend free OU content to others as a result of using free OU content. iTunes U users were less likely to take a paid for course (25%) than OpenLearn users (49%).

Respondents were asked what subject areas they were most interested in. In viewing the top five subject areas of choice it is clear that all groups across both platforms are interested in Psychology and Philosophy with Science rating top in all three categories of user by iTunes U respondents (Table 10). For informal learners, aside Science and Psychology and Philosophy, subject matter choices varied. For formal learners there was shared interest across the most popular subject areas, with OpenLearn users also favouring Computing and Information Science and iTunes U users also favouring History and Geography. For educators, the following three subject areas were strong for both iTunes U and OpenLearn users: Science, Education Studies, Languages and Linguistics and Psychology and Philosophy.

Table 8. Top five choices in answer to the question 'Which subject areas you are most interested in when looking for content from iTunes U?/OpenLearn'. Users could select more than one from 17 subject matter areas.

	iTunes U	**OpenLearn**
Informal learners	Science (44%) Psychology and Philosophy (35%) Computing and Information Science (34%) History and Geography (33%) Economics, Business and Mgt (28%)	History and Geography (43%) Psychology and Philosophy (36%) Arts (36%) Science (31%) Literature (30%)
Formal learners	Science (45%) Psychology and Philosophy (40%) Languages and Linguistics (34%) History and Geography (30%) Arts (28%)	Psychology and Philosophy (39%) Arts (33%) Science (32%) Computing and Information Science (28%) Languages and Linguistics (28%)
Educators	Science (47%) Psychology and Philosophy (37%) Education Studies (37%) Languages and Linguistics (31%) History and Geography (30%)	Education Studies (51%) Science (37%) Languages and Linguistics (33%) Computing and Information Science (28%) Psychology and Philosophy (28%)

Implications

Whilst it is not possible to make exact comparisons with data collected in this study and data collected worldwide for certain groups, it is possible to compare national data for the UK and the UK

samples of users from both platforms for disabled and non-native English speakers (Table 9).

Table 9 Comparison of UK national data and survey data

	UK national data	**iTunes U**	**OpenLearn**
Percentage of working age adults living in the UK who are disabled	16%*	15% in UK sample	18% in UK sample
Percentage living in the UK with English not as first language	8%**	9% in UK sample	10% in UK sample

*Department for Work and Pensions, Disability Facts and Figures, 2013

**Office for National Statistics, 2013

McAndrew and Farrow (2013, p. 69) identify as a 'persistent' challenge increasing access to and awareness of OER in the interests of true openness. Hence, whilst there is much to be done in taking free educational content to those who need it most (not least because face-to-face delivery is more costly than simply making it available online), this study reveals a comparable sample of working age adults who are disabled living the UK using OU free content compared to UK statistics. For those who do not have English as a first language, both platforms show a higher percentage than the national UK figures (Table 9). Hence, these data suggest a higher representation in two of the widening participation groups using free content via iTunes U and OpenLearn.

In order to provide insight to better inform the Journeys from Informal to Formal Learning priority, three additional questions were asked of OpenLearn users in recognition of it being the key platform for the University's open content. Learners were asked what they would like to see more of, in what format and what they would be prepared to pay for. The majority indicated that they would be prepared to pay for educational content provided online (59%) and that this should take the form of accredited modules (81%) followed by whole courses up to 50 hours of study (57%). Comments (below) were revealing though as these largely indicated a) that OpenLearn is serving those who cannot afford to pay to learn and b) that signing up to be an OU student can be preclusively expensive despite the OU having some of the lowest university fees in the UK. It may show that just because the majority of OpenLearn users are employed (55%), this is not an indication of having disposable income to spend on learning.

Selected comments:

- *…I would be prepared to pay for whole courses if I could afford them but I can't…*
- *As a pensioner I cannot afford to pay for education, never the less I still feel the need to learn and achieve*
- *Cannot afford as am a student but would love to take a whole short course*
- *On benefit and cannot afford to pay*

- *But the ones I want are beyond what I can afford - the postgraduate OU courses. I feel very sad about the increase in prices. I know they are worth it but now I am excluded from some of the very best in learning online*

For OpenLearn, a higher proportion of informal learners using the content are disabled (19%) than the proportion of fee-paying students at the OU (12%). This is of particular interest to the OU for OpenLearn where over 19% declared they had a disability compared to 13% for iTunes U. To put this into perspective, based on 2012 data, we should expect the following numbers of disabled visitors to our platforms each year:

- **570,000 to OpenLearn** (19% of visitors)
- **337,000 to iTunes U** (13% of visitors)

A recommendation to providers of free educational content, especially those delivering complex, interactive content in the form of MOOCs, course units or open textbooks over web-based platforms, is to:

- Ensure that data analytics of open content includes knowing what proportion of informal learners are disabled
- Ensure that content is as accessible as that made available to fee-paying students. This is relevant on two levels: to serve the informal to formal learning journey experience by demonstrating the intention of the provider to be accessible; and to meet the widening participation goals of ensuring access to all.

Whilst many educational institutions involved in providing open content have created applications and audio-visual content to run on Android and Apple devices, the majority of web-based free educational content is not mobile phone-enabled. Reaching deprived populations (and given data provided in this report about those using mobile devices as their primary method of accessing the Internet) will require the large web-based platform providers of free content to optimise for mobile use. OpenLearn allows users to download content in multiple formats for later use (PDF and Word), and the development of the website to be mobile-enabled is in progress. If users are resource-limited they may be more inclined to buy an Internet-enabled mobile phone than invest in a desktop or laptop computer. Combined with the notion that the popularity of iTunes U is unlikely to change if trends in the use of mobile devices persist, it will prudent both from the perspectives of increasing brand awareness and reaching underserved groups, to plan for adapting and syndicating content early in the content creation process for output to multiple platforms and in multiple formats.

Conclusions

The study has informed a better understanding of the diverse demographic represented by OpenLearn and iTunes U users, and those users' motivations for informal learning. It also raises questions about whether university-provided free content meets the needs of its users. One of the initial reasons for providing free content at the OU through the William and Flora Hewlett Foundation-funded OpenLearn project was about social mission. For many over the last decade this has evolved into developing business models for open content production that still serve social mission, but also support students and teachers and bring informal learners into the formal student experience. It has also provided new insights into informal learning, adding to established ideas around the provision and motivation for work-based learning to include new methods and sources of free content and social online interaction that meet the needs of both professional **and** personal development.

Whilst the demographic analysis of this study shows that the OU, through OpenLearn and the OU's iTunes U channel, is serving a largely educated group who have a keen awareness of the range of free educational resources available online, the OU is also reaching groups of users that fall into the widening participation agenda in equal or larger proportions than the population in general (demonstrable for the UK at least). The recommendation for educational institutions is to syndicate their open content over multiple platforms, in multiple formats, in recognition that different platforms serve different populations with different needs; informal learners using free educational content want different subjects because their needs are different and they are from a range of demographic groups. Much of the content offered by universities through iTunes U assumes a level of undergraduate educational ability to self-study in the English language. Hence, offering more content at entry level to build learners' confidence, especially for those for whom English is not their first language, will also help address the widening participation agenda.

Whilst content production mechanisms allow for easy access to publishing online, budget-constraints deny face-to-face promotion of free educational content to underserved groups. Educational institutions producing free content must rely on third parties (government bodies, externally-funded projects, charity sector, unions and community groups), to bring it to the attention of those it seeks to serve and not rely on platforms' search function and access to devices to passively reach target audiences. They must instead optimise for a mobile population, that is internationally spread, who use a range of tools to study informally.

References

UK Census (2011), Local Characteristics on Ethnicity, Identity, Language and Religion, Office for National Statistics. Available from: http://www.ons.gov.uk/ons/rel/census/2011-census/local-characteristics-on-ethnicity--identity--language-and-religion-for-output-areas-in-england-and-wales/index.html (Accessed 7 August 2013).

Cross, J. (2007). *Informal Learning*. California, 2007: John Wiley and Sons, Inc.

Department for Work and Pensions, (date?) Disability Facts and Figures. Available from http://odi.dwp.gov.uk/disability-statistics-and-research/disability-facts-and-figures.php (Date accessed 26 June 2013).

Lane, A., 2011. Developing Innovative Systems for Supportive Open Teaching in Higher Education. *Journal for the Systemic Innovation of Education* 1(1): 32–46.

McAndrew, P. and Farrow, R., 2013. Open Educational Research: From the Practical to the Theoretical. *In* McGreal, R., Kinuthia W., & Marshall S. (eds.) *Perspectives on open and distance learning: Open Educational Resources: Innovation, research and practice,* Commonwealth of Learning, Athabasca University. Available from https://oerknowledgecloud.org/sites/oerknowledgecloud.org/files/pub_PS_OER-IRP_CH5.pdf (accessed 1 July 2013).

McGrane, K., The Rise of the Mobile-only User. http://blogs.hbr.org/cs/2013/05/the_rise_of_the_mobile-only_us.html (Accessed June 2013)

New Media Trend Watch: Mobile Devices http://www.newmediatrendwatch.com/markets-by-

country/18-uk/154-mobile-devices (accessed June 2013).

Osborne, C. (2012) Are Universities Reluctant to Use iTunes U? http://www.zdnet.com/blog/igeneration/are-universities-reluctant-to-use-itunes-u/16064 (accessed May 2013).

Pew Internet, Cell Internet Use 2012. http://www.pewinternet.org/reports/2012/cell-internet-use-2012.aspx (accessed 3 July 2013).

UN Factsheet on Disability http://www.un.org/disabilities/default.asp?id=18 (accessed 26 June 2013).

Walsh, T., 2011. *Unlocking the Gates: How and why leading universities are opening up access to their courses*. Princeton and Oxford, Princeton University Press.

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Development of on-line courses focusing on quality

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Introduction:

Dalarna University (DU) began offering courses online in the early 2000s. The Faculty of Languages, which we discuss in more detail later, has grown to such an extent that today the department offers courses in 12 languages: Arabic, Chinese, English, French, German, Italian, Japanese, Portuguese, Russian, Spanish, Swedish and Swedish as a second language. In 2012 over 65% of the students at DU were enrolled in online courses. In the Faculty of Languages, however, this figure was close to 100%: there are 3,968 students registered for language classes that will begin in the fall semester of 2013 and 3,299 (83%) of these students are registered for courses that will be conducted on-line. From the outset there was agreement among the instructors, technical staff and the administration that the **primary** focus must be on education and not on the technology that facilitates education. In other words, the technology must be adapted to fit the requirements of the instructor, not the other way around, although this is easier said than done. Online education at DU is based on two main tools: first, a Learning Management System. DU uses Fronter (http://www.du.se/en/NGL/NGL-Centre/Tools-and-Courses/Fronter/). The Fronter L.M.S. is a hub or portal from which students can access basic course information, files related to their courses, submit assignments, take tests and complete anonymous course assessments. The second tool is a program that enables synchronous online contact between the instructor and students. In order to accomplish this, DU has chosen to use Adobe Connect (http://www.du.se/en/NGL/NGL-Centre/Tools-and-Courses/Adobe-Connect/). Students therefore need, in addition to the course textbooks, an internet connection, a computer, a headset with microphone and a camera. A term that we have used and to which we return repeatedly is "synchronous". Indeed, what distinguishes DU from other institutions that also offer off-campus education is that at DU the student has the option of completing a portion or all of their education online in a synchronous environment that allows for direct interaction among students as well as between the students and instructor. This is particularly characteristic of the language department. In this article, we will provide several concrete examples of how online instruction has been implemented at DU. What follows is a concrete description of classroom practices which is accompanied by a reflection on their impact on the learning process.

1 . Language teaching online

1.1. Language teaching at University level in Sweden

Sweden follows the Bologna rules (B.A -Master -PhD). Courses in language departments are grouped at the Undergraduate level for three semesters. At the advanced level, the Master 1 is performed over two semesters plus two semesters for the Master 2. For some languages (Chinese, Japanese, Russian, Arabic, Portuguese) the Undergraduate level includes preparatory courses that resemble courses for beginners, but are adapted to the university level of training. Each course has a syllabus. Language skills alone are not enough: each course must also have the typical characteristics that are

required of any course in a Swedish institution of higher education. This is required by law. A university education should provide students with an "opportunity to make independent judgments and criticisms, the ability to identify, formulate and solve problems, and the ability to cope with changes in working life". Moreover, "in addition to knowledge and skills in their field of study, students must develop the ability to search and evaluate knowledge at a scientific level, follow the evolution of knowledge in the field in question and exchange knowledge with others who are specialized in the field of study" (The Swedish Law on Higher Education, *Högskolelagen* § 8, our translation[43]). Finally, education is not limited to learning basic language skills; goals also include the study of literature, social issues and the language systems of the various cultures.

1.2. Teaching methods

Before, during and after the process to put the language courses online, teachers were faced with a challenge. Most traditional teaching methods could not be simply transposed to an online education, while most educational tools that have been developed can also be used face-to-face. It is today common, for example, that the teacher requires the students to use the internet in their research or assign homework a course website. The fact is, however, that online education pushes us constantly to invent new teaching activities, which in turn may also be applicable in a traditional classroom setting. According to a survey conducted under the Next Generation Learning program at DU (the project is called "Pedagogical methods"), teachers conduct a wide array of activities online. This includes everything from lesson and homework preparation, to equipment distribution and actual teaching. In this regard, the majority of teachers had to create their own or adapt existing course materials in order to be able to use them online. This poses some significant copyright problems. For example, we cannot simply scan an entire textbook and make it available online. Another problem is that because the students and teacher may be physically very far apart, there may be difficulty in creating a sense of belonging among class participants. One highly recommended method to foster a sense of community comes from Gilly Salmon (2011 reprinted in 2013). Salmon recommends working with the group in order to get a sense of belonging to a group:

"Study after study has shown that an online team or small community must be built up for engagement between participants to occur, and relevant authentic and purposeful e-learning activities must also be simultaneously introduced to sustain the community" (Salmon, 2011: 36).

Some solutions used by our colleagues to create this sense of group belonging include using the web-cam. The web-cam allows the students to acquire non-verbal cues and see the spontaneous reactions of their classmates, just as they would in a traditional classroom. At the beginning of a course, teachers at DU make it a point to spend some time having everyone give a short self-introduction. The so-called personalization method (see below) is also used. Finally, students have several opportunities throughout the semester as well as at the end, to give their opinions regarding the structure and content of the course[44]. This fosters the feeling that they, the students, are participating in the development of the course.

Interactive synchronous online seminars are deemed positive by teachers because they allow interaction which is often seen as the basis for not only the acquisition of language (in the

43 8 § […] Utbildning på grundnivå ska utveckla studenternas förmåga att göra självständiga och kritiska bedömningar, förmåga att självständigt urskilja, formulera och lösa problem, och beredskap att möta förändringar i arbetslivet. Inom det område som utbildningen avser ska studenterna, utöver kunskaper och färdigheter, utveckla förmåga att söka och värdera kunskap på vetenskaplig nivå, följa kunskapsutvecklingen, och utbyta kunskaper även med personer utan specialkunskaper inom området. Law (2009:1037).

44 Note here that in Sweden, the active participation of students in the course evaluation is a highly developed process. The teacher thus takes into account the need for measures of student feedback.

sense of language skills), but also contributes to the development of critical thinking skills. An example of this is in French literature courses, at least one interactive seminar is conducted for each work read during a course. This means that on average each course will have between eight to ten interactive seminars throughout the semester. Each seminar consists of a variety of activities. Theoretically, the majority of the time in each seminar should not be devoted to a presentation of information by the teacher. Essentially the goal of the seminar is to facilitate student involvement by prompting the students to ask questions and engage in dialog regarding material covered in the course. Since groups may be relatively large (up to 15-20 students), it is often difficult to ensure that all students participate. In order to increase student participation, seminars often include debates among small closed groups, discussion of a particular topic, or the teacher will ask specific questions to groups of 2-3 people. After each small or breakout group has had a chance to discuss a particular topic, all of the participants will return to the main group and discuss what was said in the smaller groups. This can lead to brainstorming in order to solve a problem or simply to an oral discussion. Adobe Connect was designed with the goal of increasing student activity. With the click of a mouse students can raise a virtual hand, express themselves using emoticons, and supplement the discussion via chat which the entire class can read or even take part in a poll. This is reminiscent of the method of voting that is increasingly used in large packed lecture halls. Adobe Connect also supports video streaming either from YouTube or video that has been uploaded to the Connect server. During these activities, language development is significant. This involves primarily the development of listening skills, since students have to understand the instructions given by the teacher. However, verbal skills and to a lesser extent writing skills are also developed. Verbal skills are developed because the students are forced to speak with one another, while writing skills may be developed if the students use chat as a mode of communication with each other or the instructor. In this sense, synchronous online courses are more communicative and interactive than traditional courses. For literary knowledge, the group discusses various aspects of a work: style, structure, themes. Students must acquire this knowledge through questions and answers not linearly. Problems may then arise because active participation may frustrate some, since it is not a body of knowledge presented in one piece by the teacher who controls all the informative content. The active participation approach closely resembles a case study in which the responsibility for the learning process is shared between students and teacher. The interaction between students and the teacher is significantly increased by understanding how to use the technology, for example, knowing how to conduct surveys or pose questions in the chat room. The equivalent is certainly possible in a traditional classroom, but this type of interactivity is more common in synchronous online courses.

Another example comes from students studying Japanese at DU. The Japanese teachers extensively use the "information gap" technique. By using a method called "personalization" the Japanese teachers have used the fact that most students attend class from home as an opportunity to increase communication (Kawaguchi, 2004 and 2012). Personalization aims to persuade the students to express their own ideas, opinions, feelings and preferences. The analysis of Saito and Hayakawa-Thor (2012) suggests that the "personalization" of language courses on the Web is a surprisingly effective teaching method, because the interactions are more meaningful and students are urged to improve their vocabulary. Additionally, the more students get to know each other, the easier it is to create a "supportive classroom environment" (Nuibe, 2001). We will return to this concept below, when we discuss the adaptation of "personalization" as an online teaching position.

1.3 Assessment

One problem often posed by online education, or at least often addressed in discussions on this subject, is that of assessment. In this regard, another NGL project initiated by DU (Goal - Oriented Assessment and Secure Examinations) showed how assessment is integrated into language courses and can be considered a teaching method. All sections of the language department engage in continuous reflection regarding assessment. The most trivial reason for doing so is because of the

risk of cheating. It is possible someone other than the student could do the homework or more commonly in our case, that the student will attempt to use Google Translate or some other online resource and submit this translation as original work. However, it should be noted that the risk of cheating is also present in a traditional classroom. Students in traditional courses have been known to plagiarize. Another rather trivial but unfortunately real reason for thinking about assessment so often, is the workload of teachers. Correcting both the substance and the form of dozens of papers of several pages does not please any colleague (Huver & Springer, 2011: 61-62 who discuss the "bad reputation" of assessment).

Most language teachers have decided either to combine a summative assessment (that is to say, evaluate the goals of the lesson plan at the end of the course) and a formative assessment (that is to say assess student achievement continuously throughout the course), or rely solely on a formative assessment. Even in traditional classes the formative assessment has been highly recommended in recent years. Research supports this recommendation (for example Koc Vonderwell & Boboc, 2013, see Gikandi, Morrowa, & Davis, 201, which reviews the literature on the subject and Garrison, Anderson & Archer 2000: 206). The supportive research however, takes, of course, a decidedly constructivist view of learning. Constructivism is a theory often cited by authors working in online learning (Harasim, 2012, Salmon 2011, quoting other authors, Palloff & Pratt, 2007: 16 or Schneckenberg & Ehlers, 2010: 132). It postulates that the learner constructs his own knowledge through experiences and ideas and by interacting with the world and especially with others. The knowledge in question is considered "dynamic, changed, constructed and negotiated socially" (Harasim 2012: 60). Evaluating such knowledge at a single point (at the end of a course, for example) seems to be bordering on absurdity. In addition, formative assessment allows you to use the results for the rest of the course. For example, the teacher sees that a particular grammatical concept has been misunderstood by a majority of students and is able to come back to it. At the end of the course, this would be impossible; it would be too late. Formative assessment also allows for more personalized and regular corrective feedback. It has been shown that this encourages acquisition (Lundahl 2012: 287). However, the summative assessment cannot always be ruled out entirely, since it does not show the same thing as the formative assessment (see Garrison, Anderson & Archer, 2000: 206). In the sections of French, Spanish, English and German, for example, in the first and second semesters, the grammar examinations are proctored either at the university or at a designated off campus location. In the Italian section, the literature exams for the first and second terms are also proctored; however the students may do so online as long as they are visible via the web-cam. DU now has at its disposal online supervisors who supervise students who are taking exams by watching the students via web-cam. In this case, the questions and examination requirements are tailored to the needs of teachers and courses.

Several language teaching colleagues tested different methods to answer the two questions of "who": "Who assesses?" and "Who is being evaluated?". Indeed, around the globe, correction or assessment based purely on the status of the teacher is questioned, or at least its limits are tested. Therefore many institutions have chosen to use instead the methods of "hetero-evaluation" (peer review) or self-assessment. As we will see later, the method of self-assessment is interesting in that it empowers the learner. However, in online education, full participation of the learner is required (see Palloff & Pratt, 2007: 5: "learning in the distance education environment cannot be passive") and self- assessment of knowledge and its evolution cannot but help students learn (Lundahl , 2012: 288). However, the peer review form of assessment is not without problems. Are the students able to evaluate their classmates' work? And, often in extremely heterogeneous groups, can everybody be regarded as peers? An experiment that was conducted in the French literature courses consisted in the teacher using the "Forum" function in the Fronter LMS to discuss the students' work. The answers are often commented or corrected by the teacher who judges their adequacy to literary standards, but it is also possible to require students to do the same with the responses of their classmate. This is often the case for students in secondary school teacher training, but it can also be applied to other students. They receive a copy of anonymous answers to some questions and they should comment on the responses by correcting both the content and the

language. Then the feedback from students is forwarded to the student who was the author of the comments. Regarding language development, this method produces good results and it is a good opportunity for future teachers to learn and correct. This should in theory also help the students learn how to correct another person's language errors, as well as forcing the student to correct and submit a text of his own that is free of mistakes. This is true if one assumes that the teacher is there to correct errors and the student feel comfortable showing the teacher his mistakes. While showing the teacher one's mistakes is commonly accepted, it can be quite another thing to show one's mistakes to a fellow student. There is the chance that a student may be too embarrassed to allow a classmate to see his errors. However, experience in these courses has shown that few students were making a real effort to use this opportunity as a way to improve their language ability. Furthermore, some students would simply not correct their classmate's error. This was either out of ignorance, they didn't notice the errors, or out of concern that they would hurt their classmate's feelings. This fear is rooted in Swedish culture[45]: one of the fundamental principles of Swedish society is to avoid offending one's neighbors. However, regarding the acquisition of literary knowledge, the method provides only limited results: It produces useful results only if the student is capable and willing to find and correct another student's errors.

Teachers have also chosen to combine so-called closed assessment tools (such as Multiple Choice Questionnaires) and open tools (such as dissertation). As stated by Huver and Springer, "It's not the fact that the tools are open or closed that determines their validity[46] (or not) but the fact that evaluative activity is consistent with the purposes" (2011: 101, our translation). The Fronter LMS enables the implementation of Multiple Choice Questionnaires that are either automatically corrected or corrected by the teacher. Some language departments also use Multiple Choice repeatedly in the auto-assessment perspective that we mentioned above. Of course, the higher the level of the course, the more the so-called open tools are used. One of the last exams consists in writing an essay and defending it in public at an online seminar. Among the twelve languages to date, all except a few require the writing and defense of a thesis as the final exam. Students then have ten weeks to prepare their essay and they have the obligation to critique a classmate's thesis, before seeing their own thesis critiqued. We were talking about cheating at the beginning of this paragraph and would like to mention here that the language departments that have this kind of assessment have developed a detailed procedure to prevent plagiarism. This includes regular meetings held using Adobe Connect between the student and his thesis supervisor in which the supervisor monitors the student's progress. The public seminar defense, which is an adaptation of the Socratic method, is of course also done online (see also the comment from Trowald 1997: 25, "The Highest form of examination – the doctoral dissertation - [...] has never been questioned "(our translation)).

2 Some new teaching methods made possible by online education

Here are three examples of educational activities, which are very difficult to implement in a traditional classroom. We will first introduce the idea of student cooperation beyond borders with the goal of acquiring both language and culture. We will then present an exercise involving the use of a wiki and finally with an exercise that utilizes literary blogs. These last two examples show that the

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45 See for example Daun, Å., 2005. Swedishness as an Obstacle in Cross-Cultural Interaction, p. 158-160.

46 "Validity is the concept with which the Framework is concerned. A test or assessment procedure can be said to have validity to the degree that it can be demonstrated that what is actually assessed (the construct) is what, in the context concerned, should be assessed, and that the information gained is an accurate representation of the proficiency of the candidate(s) concerned. Reliability, on the other hand, is a technical term. It is basically the extent to which the same rank order of candidates is replicated in two separate (real or simulated) administrations of the same assessment » (Common European Framework of Reference for Languages, page 186).

interactional approach – doing real tasks in real social interactions - is used in the department of languages and allows the implementation of the action-oriented approach of the Common European Framework of Reference for Languages (CEFRL). The goals of this approach are to increase the motivation of learners, to encourage the development of quality work, to change the student-teacher relationship and enhance the knowledge as well as the responsibility of the learner.

In Rieko Saito's (a colleague in the Japanese department) Master thesis, five students from Taiwan and four students from Sweden interacted with each other in Japanese. The purposes of the previous project were to seek advantages of web based education and to afford students the opportunity to broaden their world view by interacting with learners in other parts of the world, as well as to increase the student's ability to communicate in Japanese. Even if the project showed some difficulties or challenges, it also showed that learners have many things in common. Some of the things the students had in common included their goals and problems in learning Japanese. It is easier to interact with other students if one knows the person with whom you are interacting has problems similar to one's own. Learners can learn Japanese from each other, even if they have different teachers and textbooks and learning environments. The students each bring their own experiences and interests which they can share with the other students, and it is a good opportunity for learners to broaden their views. Of course a project of this kind is also a good opportunity for professionals who are researching the scholarship of teaching and learning in higher education. What is important is that this would have been impossible in a traditional classroom setting (these students had never met!) and that the project had a positive effect on their learning. The Japanese department continues to work on this topic and has explained the didactic advantages of this method to all of the language sections at DU. With our Erasmus agreements in Europe and our other cooperation agreements in the world, it is possible to develop these intercultural encounters and encourage the acquisition of transculturality for our students. In other words: "transculturality at home", which can reap the benefits of international trade without having to move from one continent to another, through the intelligent use of new educational technologies.

Some teachers use a wiki. The Spanish department uses a wiki for example, during the written proficiency courses, during the first half of the term or during the courses for student-teachers. They use the wiki as a platform for web publishing of encyclopedic items that students write in the course. First, the students have to read two prototypical articles on Wikipedia and analyze the structure of this type of publication (external structure and internal hyperlinks, references, etc.) This type of publication is also discussed during a synchronous seminar online. Then they select a Swedish theme to write an encyclopedic article. It may be a concept, a phenomenon, a region, a pop band, a writer, whatever. The only requirement is that the information in question is not on the Internet in Spanish (which is the reason why this theme is related to Sweden). It is the student who creates the information in Spanish on the topic. The first draft is submitted to the teacher, who informs the student about linguistic errors and comments on the structure, content and format. The student corrects the text and publishes it in the wiki at the DU. He or she also has the option of publishing this article in the "real" Wikipedia but is not required to do so. This approach is highly recommended in professional research (For language, see Huver & Springer, for example: 2011: 211) and also by the Common European Framework of Reference for Languages under the section regarding action-oriented teaching by tasks. The idea is to use the knowledge gained, but also the sequence in language acquisition based on real work for a predetermined goal (which increases the motivation of the learner). Moreover, as the final work will be seen not only by the teacher as would homework in a traditional situation, it will also be seen by other students and possibly by people all over the world, the students are motivated to produce a good quality text. The students tend to be more independent and responsible than they would be if the assignment were not to be published on the web. The student gains not only skills in writing but also in creativity. It becomes apparent that the teacher is no longer only a corrector but rather a collaborator.

The Department of French is conducting an experiment involving the use of literary blogs. The teacher asks the students to post their comments about a work on a literary blog website and participate in the debate that takes place on those sites. There is a series of blogs on the

francophone web 2.0 from which the teacher can choose. A teacher can undoubtedly find one or more that are compatible with the teacher's educational goals. The teacher will guide the students to an appropriate blog, according to the students' levels of French and ability to produce original relevant thoughts. Some students will find themselves in the situation of having launched a debate among bloggers and will be able to interact in French with "real people ", about a literary work that interests them (See Ollivier & Puren, 2011 for a detailed analysis of the use of the web 2.0 in language classes).

Discussion

In the discussion that follows, we would like to raise two specific issues: Assessment and the role of the teacher. Huver & Springer showed, in the early 2000s the existence of a very / quite common opinion in the world of the language teachers: they advocated assessment which was "objective, quantifiable, external and based on observable behavior" (2011: 321). This idea is currently criticized. The Common European Framework of Reference for Languages has an action-oriented approach to assessment, which we have already mentioned, and a concept of lifelong acquisition, self-assessment and formative assessment which are also applicable to online education. Indeed, alternative assessments are available that are described as ethical (learners are responsible for their own acquisition and the assessment is formative, that is to say the learners receive support and feedback throughout the course), ecologic (they reflect real, genuine/authentic situations) and social (there is an interaction between the teacher and the learner, and sometimes they negotiate to determine what assessment procedure will be used) (2011: 209-211 and ibid: 323). However, as we have already discussed, self-assessment, responsabilization, interaction and assessment by real tasks are used in online courses. Many of our colleagues are currently testing this new type of assessment and the results look very promising.

Secondly, regarding the role of the language teacher, it appeared that the interaction between teachers as well as among students is greatly increased by the online practices just described. But beyond a simple pedagogical benefit, online language teaching has permitted the acquisition of what Lamy and Hampel called multi-literacies that are the result of emotional charge induced by learning a foreign language. In other words, as long as the techniques are quite easy to use, it is possible for the teacher to overcome the barrier of distance and establish a true criticism:

"If teachers want to follow a socio-cultural approach and believe in critical literacy, affective, social and critical skills become crucial. Multi-literacies go beyond dealing with the technical aspect of the electronic medium and include engaging with others through the new technologies and using them creatively as well as critically" (Lamy, Hampel, 2007: 43).

It follows, then, that the teacher's role has changed considerably. The teacher is no longer the central figure in the class. There has been a paradigm shift that means that it is the job of the language teacher that has to be redesigned. As Guichon says:

"Losing some control over the learning process and on linguistic correctness, granting greater autonomy to learners in relation to their learning, going out of the education scheme in three phases (exposure, practice and production), considering the added value of ICT and learning to use them wisely are all elements that require the language teaching profession to be rethought" (2012: 134).

If there is a major change in the expected role of the teacher it is around the concept of a knowledge transmitter, or even around the nature of transmitted knowledge. In regard to languages, practices which have been presented make it possible not only to change the role of the teacher into that of a coordinator of the exchange of structured points of view, but also sensitize the students to the specificity of language and culture. The new techniques for language teaching make it possible to alternate synchrony and asynchrony and increase the interaction and renew the teaching profession.

As long as the student audience adopts this perspective and requires the same level of participation, these advances will become the norm. Moreover, these new teaching methods will also influence traditional teaching, because it will no longer be possible for a teacher on campus to ignore the participatory requirements of learners.

References

Bertin, J.C. 2011. « Approche systémique de l'innovation pour l'apprentissage en Centre de Langues ». *Language learning in Higher Education*, vol. 1, no. 2, pp. 249-273.

Daun, Å., 2005. *Swedishness as an Obstacle in Cross-Cultural Interaction*, Scott F. Kiesling & Christina Bratt Paulston (eds) *Intercultural Discourse and Communication. The Essential Readings*. Oxford: Blackwell Publishing. p. 158-160.

Ehlers, U-D, Schneckenberg, D. 2010. *Changing cultures in Higher Education.* Springer.

Garrison, D. R., Anderson, T, & Archer, W. "Critical inquiry in a text-based environment: Computer conferencing in higher education". *The Internet and Higher Education*, 2000 (2): 87–105.

Gikandi J.W, Morrowa, D, Davis, N.E. 2011. "Online formative assessment in higher education: A review of the literature", *Computers & Education*, v57 n4 p2333-2351.

Guichon, N. 2012. *Vers l'intégration des TIC dans l'enseignement des langues*. Paris : Didier.

Harasim, L. 2012. *Learning theory and online technologies.* New York: Routledge.

Huver, E. et Springer, C. 2011. *L'évaluation en langues*. Paris : Didier.

Kawaguchi, Y. (2004). Hyougenkyouiku to bunpoushidou no yuugou, "hatarakikakeru hyougen" to "kataru hyougen" kara mita shokyuubunpou. Journal CAJLE, Vol 6, pp.57-70.

Kawaguchi, Y. (2012). An interview with professor Yoshikazu Kawaguchi: http://www.du.se/Utbildning/Amnen/Japanska/En-intervju-med-professor-Yoshikazu-Kawaguchi/)

Koc Vonderwell, S. & Boboc, M. 2013. « Promoting Formative Assessment in Online Teaching and Learning ». TechTrends, volume 47, number 4, pp.22-28.

Lamy, M-N. and Hampel, R. (2007) *Online Communication in Language teaching and Learning*. Basingstoke: Palgrave McMillan.

Lundahl, C. 2011. "Bedömning – att veta vad andra vet". In: Lundgren, U., Säljö, R., Liberg, C. et al. *Lärande, skola, bildning*. Stockholm: Natur och kultur, pp.257-294.

Narcy-Combes, J.P. 2010. *Destructurer les dipositifs pour mieux structurer les parcours apprenants*.

Nuibe, Y. (2001). *Nihongo kyouikugaku nyuumon*. Tokyo: Rekirekisha.

Ollivier, C. & Puren, L. (2011) *Le web 2.0 en classe de langue - Une réflexion théorique et des activités pratiques pour faire le point*, Paris: Maison des langues.

Palloff, R.M. & Pratt, K. 2007. *Building Online Learning Communities*. San Francisco: Jossey-Bass.

Saito, R (2011). *Nihongo kyouiku ni okeru enkaku kyouiku no kanousei to sono igi*. (Challenges of Distance education in Japanese language education.) Unpublished MA Thesis, Waseda University.

Saito, R. & Hayakawa Thor, M. (2012). "How to make active interactions in Japanese as a second language". International Conference of ICT for Language Learning, Florence, Italy 2012 (pp.211-214). Firenze: Pixel.

Salmon, G. 2011. *E-moderating : the key to teaching and learning online*. New York : Routledge.

Salmon, G. 2013. *E-tivities : the key to active online learning*. New York : Routledge.

On-line references [accessed September 12th 2013]

Adobe connect : http://www.du.se/en/NGL/NGL-Centre/Tools-and-Courses/Adobe-Connect/

Common European Framework of Reference for Languages:
http://www.coe.int/t/dg4/linguistic/Cadre1_en.asp

Fronter : http://www.du.se/en/NGL/NGL-Centre/Tools-and-Courses/Fronter/

Trowald, Nild, 1997 : http://www.pu.uu.se/pedagogisktprogram/Trowald.pdf

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Enhance creativity with open-source tools: the Knowledge Generating House

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Abstract

Innovation capacities and expanding learning opportunities of young students by letting them exploit their intellectual capital and learn through creative expression, generate new ideas and creative solutions in real-life innovation with experts, was the focus of the OpenInn European project (OpenInn website, 2010).

OpenInn is not only an online social networking site but a knowledge-base and guide as well forfacilitators on assessing and fostering creativity - it hosts the Knowledge Generating House and the e-assessment model.

OpenInn serves as a new pedagogical and organizational model for communities and individuals to explore their innovative potentials by the use of ICT-tools proceeding the strengthening of their self-esteem. The results contain the Knowledge Generating House that is a site enhancing innovation on a social networking basis designed. The guide to creativity is an e-learning material, a comprehensive pedagogical background that can be applied also as a guide for using the Knowledge Generating House for lifelong learning and innovation purposes.

Creative solutions require a different evaluation system and a new pedagogical concept with innovative didactics.

The consortium created the 'Knowledge Generating House' as an innovative social network for exploring creative potentials. Users could use the platform looking for ideas expressed by others and by exploiting their own inner potentials as well.

The results are on the OpenInn portal in 9 languages (ENG,DE,SK,PT,IT,HU,ES,DA,BG).

Keywords: creativity, innovation, social networking

OpenInn Project: aims and objectives

"OpenInn2.0: A Knowledge Generating House and e-Assesment Model" was a European project within the framework of the Lifelong Learning Programme under the priority 'Information and Communications Technologies (ICT)' of the transversal programme, running from October 2010 until March 2013. Projects under this key activity 3 encourage innovation and creativity in learning and teaching and boost the use of new ICT tools and trends. Find out more about the OpenInn project on http://openinn.eu/.

The project addressed great challenges of bridging the implementation gap in Information and Communication Technologies (ICT) use for enhancing creativity in lifelong learning. The concrete aims of the project thus were:

1. Bridge the implementation gap in the use of ICT in a creative way to support learning and social coherence linking together different sectors.
2. Support the evolvement of a stable positive self-esteem both for learners and for facilitators in the learning environment. By reassuring the self-esteem through autonomous learning, it also generates inner motivation for learning.
3. Increase opportunities for exploiting intellectual capital of young talents and groups at-risk.
4. Produce a comprehensive to creativity containing the theoretical concept and didactics for creativity, with topics including: ways to support the learner to introduce new ideas; evaluating and rewarding creative results; methods for giving instructions to reach innovative solutions; providing autonomy for creative expression both for not-yet ICT users and advanced level users in their specific sectors.
5. Create the 'Knowledge Generating House' as an innovative social network for exploring creative potentials. Users could use the platform looking for ideas expressed by others and by exploiting their own inner potentials as well. This generates a new learning experience, where not only young talents, but groups at-risk from falling out of educational system can be actively engaged in creating and inventing. By collaborating with others, they can attain new perspectives for understanding a case and developing it, and by the new perspectives they are able to understand themselves better. This reassures their self-esteem and makes the base for exploring their inner potentials.

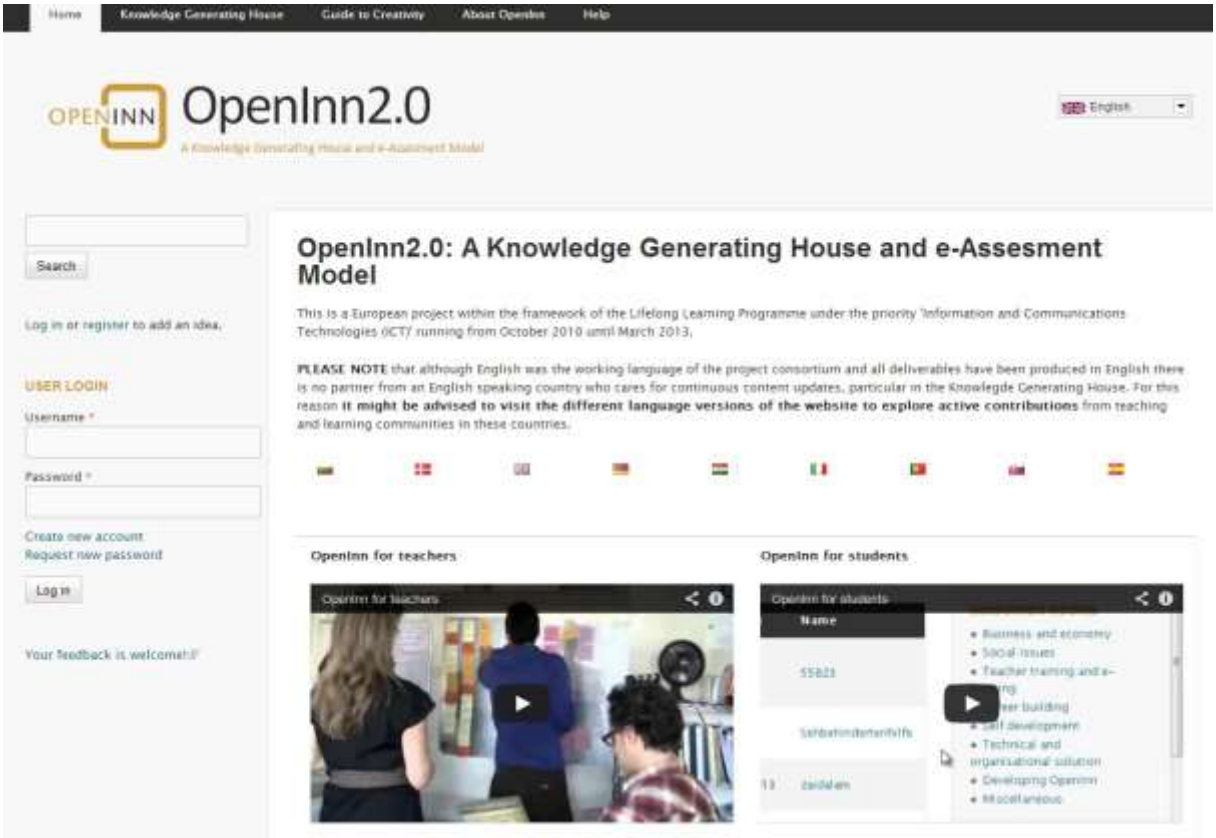

Figure 1: Home page of the portal

OpenInn Project: results

OpenInn is not only an online social networking site but a knowledge-base and guide as well for facilitators on assessing and fostering creativity - it hosts the **Knowledge Generating House** (an online ideation tool for youth) and the **guide to creativity** (an online guide for teachers and managers on enhancing creativity by these new methods).

The content of guide to creativity covers: ways to support the learner to introduce new ideas, evaluating and rewarding creative results, methods for innovative didactics, providing autonomy for creative expression both for not-yet ICT users and advanced level users.

Thus, by the specialisation of the modules, recommendations were formulated to encourage the development of the learning environment using ICT for enhancing creativity in three steps:

1. Creativity enhancing tasks in general, without the necessity to use ICT-tools;
2. Creativity fostering tasks using basic levels of existing ICT-tools;
3. Creativity requiring and enhancing tasks using innovative and advanced levels of ICT.

The guide to creativity was the pedagogical and didactical concept written in the form of an e-learning guide on which the Knowledge Generating House was built. The pedagogical methodologies was built on a strategy-framework explaining how to create a creativity-enhancing psycho-social learning environment in secondary and vocational schools and universities based on strengthening the self-esteem and empowering the learners with contributing to their own learning processes.

The Knowledge Generating House creates future-knowledge and enables access to the latest solutions and innovation, permitting the learners and facilitators to exploit their own creative ideas and enhance others'.

The Knowledge Generating House

The Knowledge Generating House (KGH) is a online ideation tool that supports the development of new ideas, no matter if for an educational or a business context. The tool implements an online brainstorming of challenges, offering commenting and voting of the ideas by the community of solvers to achieve the best solution!

KGH is a place for collaborative learning:

- web2.0 Innovation e-Learning Rooms connected together for brainstorming and mind-mapping: in each Innovation e-Learning Room has a specific topic and a level of difficulty. In each room there will be 5 phases: generating ideas for a question or complex problem, select ideas and make a solution, risk management and improvement, finalizing the solution.
- Space for uploading sketches of academic studies/ thesis/ portfolios for future innovative use.
- Individual creativity assessment: based on various aspects selected for themselves (e.g.: number of new ideas implemented or experimented with, number of experiments on the same issue, uniqueness of those solutions, number of connections established with people of similar interests possibly from different countries or sectors).

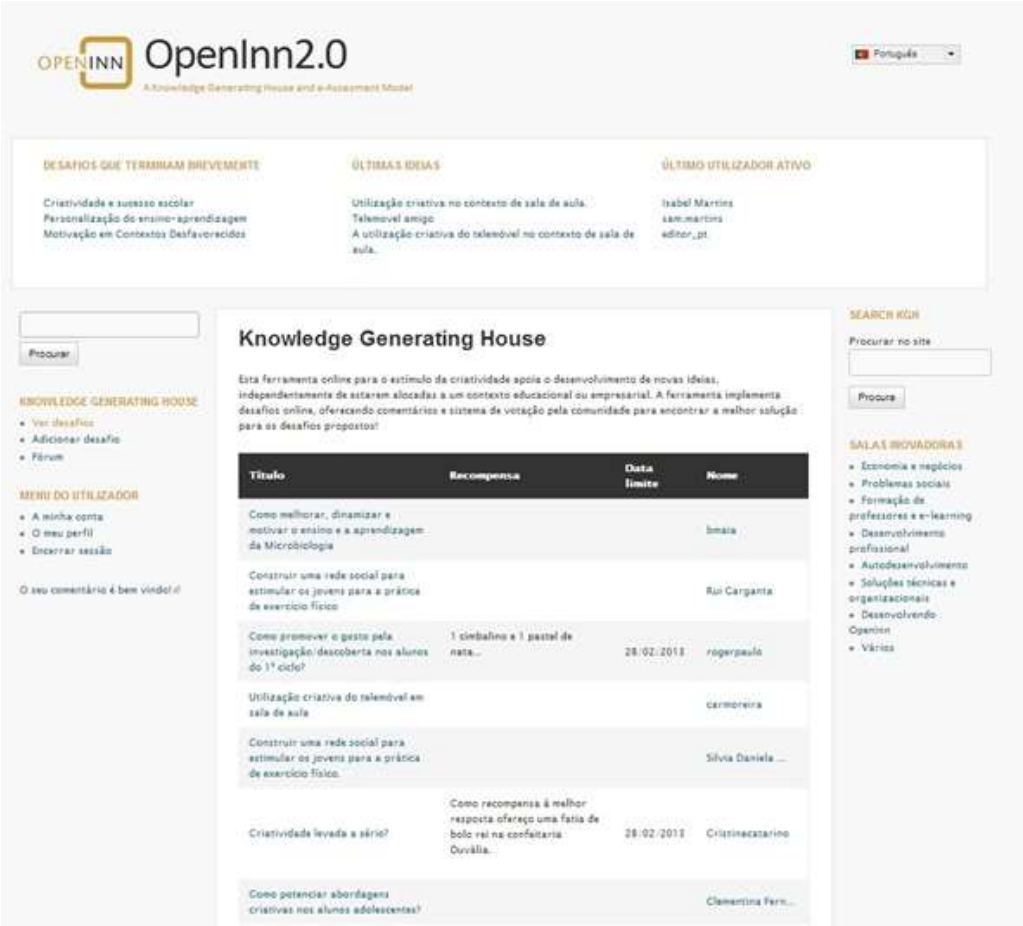

Figure 2: Screenshot of the results of the piloting session in the KGH (Portuguese version)

Each project partner held workshops with their teachers and students with the following objectives: test the KGH portal; create challenges in the KGH portal; present ideas to solve the challenges; share new creative scenarios for teaching and learning; promote de discussion on creativity issues; disseminate the OpenInn projet.

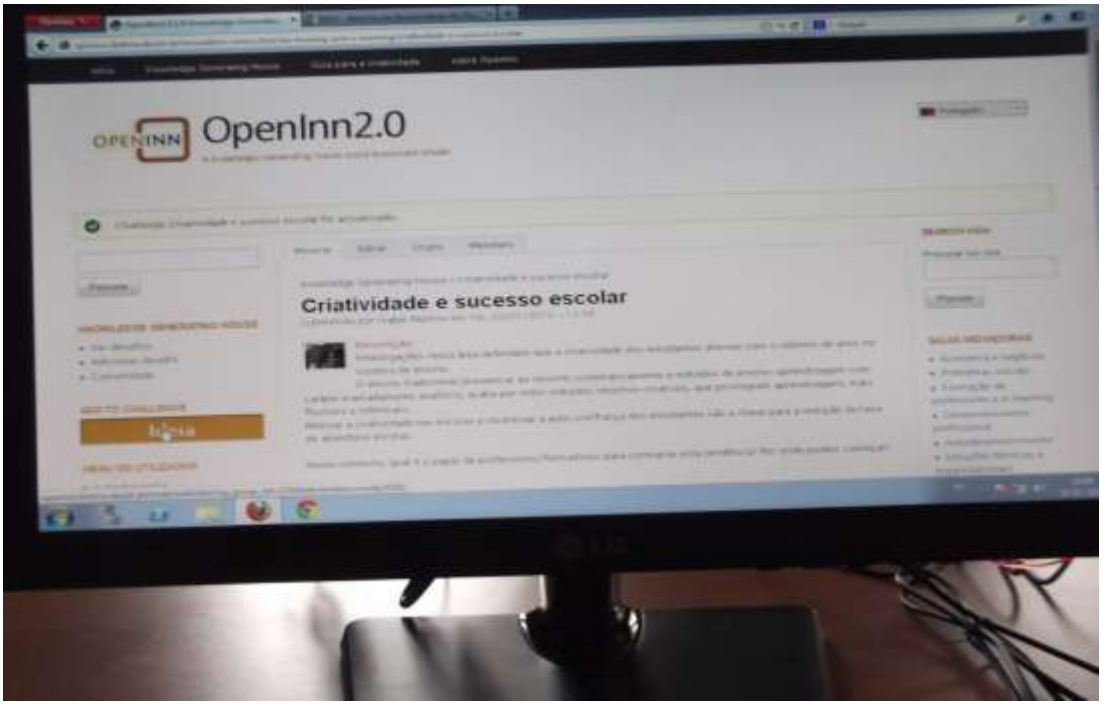

Figure 3: Photo of the piloting session

Figure 4: Photo of the piloting session with teachers

The Guide to Creativity

The learning and working material developed by partnership of OpenInn 2.0 project represents a combination of theoretical facts, information and practical experiences collected with the aim to support communities and individuals to explore their innovative potentials by the use of ICT-tools by integrating into education process and proceeding the strengthening of self-esteem teachers and students. Learning material is divided into following parts:

- Self learning material **Pedagogical background** where reader can find comprehensive theoretical background about Open Innovation principle and its possible usage in field of addressing and assessing creativity;
- **ICT Tools** represent a list of ICT tools and their descriptions that can be used in creative education process and presents the way how they can be exemplarily used in an educational context. It is divided into three parts based on level of potential user's digital literacy;
- **Practical examples** part is collection of practical experiences of partnership written in form of scenarios describing how to apply ICT for teaching and learning to increase creativity;
- **Resource library** containing further interesting teaching and learning material not used in previous parts.

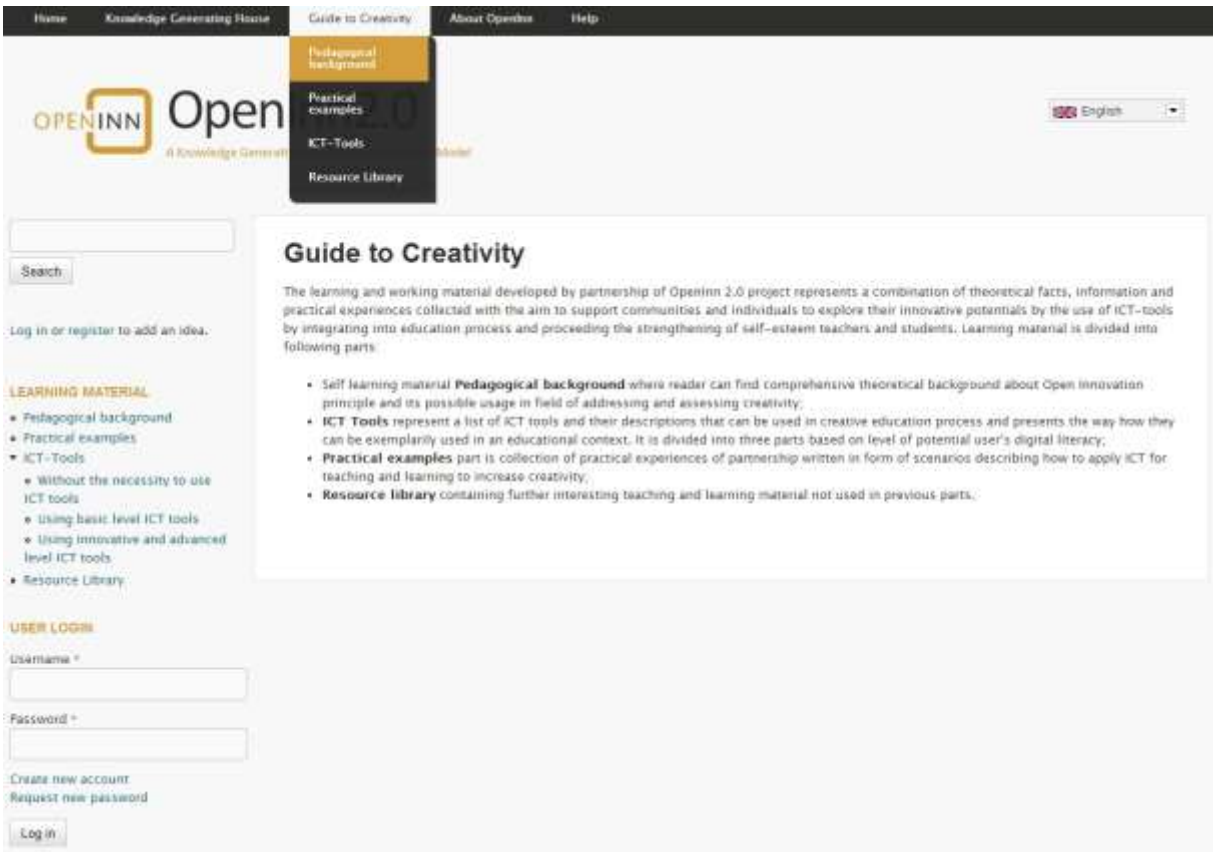

Figure 5: Screenshot of the guide to creativity

Enhance creativity with open-source tools

In a more open world there comes a need to learn and teach how to live with newly gained freedom and broad perspective of opportunities. These new trends call for a new pedagogical and organizational model that leverages the creative potential of young people. For creative results,

teachers need new or innovative didactics with a different evaluation system. Those young people who have trust that they will be accepted with their new ideas and have a stabile positive self-esteem are not afraid of introducing new solutions.

OpenInn developed a new assessment model and innovative didactics for enhancing creativity. It contains topics including ways to support the learner to introduce new ideas, evaluating and rewarding creative results, methods for giving instructions to reach innovative solutions, providing autonomy for creative expression both for mentors who are not-yet computer users to those who are advanced internet users.

The effects of the OpenInn learning paradigm are: expands learning opportunities of young talents by letting them exploit their innovative ideas and learn through creative expression in real-life innovation

- Motivates groups at-risk back to learning by strengthening their self-esteem and encouraging creative expression through collaborative learning.
- Gives support for mentors. It encourages sharing experience or feelings connected to everyday-challenges as a facilitator, or opportunities to visit different schools.
- Education linked closer to the business field. Innovation in collaborative teams can be the best experimental learning field for enhancing creativity.

References

Bobby Elliott (2007). Modernising assessment: the use of web 2.0 for formative and summative assessment. ISBN 0953957268

(https://dspace.lboro.ac.uk/dspace-jspui/bitstream/2134/4543/1/Elliott%20B.pdf)

Bonwell, C.; Eison, J. (1991). Active learning: creating excitement in the classroom. AEHE- ERIC higher Education, report n1, Washington, DC; Jossey Bass. ISBN 1-87838-00-87

McKinney, Kathleen (2001). Active learning. Normal, IL. Center for Teaching, learning and techonology.

Redecker, C., Punie, Y. (2010), Learning 2.0 Promoting Innovation in Formal Education and Training in Europe. Lecture Notes in Computer Science, Vol. 6383. Sustaining TEL: From Innovation to Learning and Practice. Pages 308-323

Várnagy (2009): Beyond the level of self esteem. Investigating stability as an independent dimension in alternative and traditional secondary schools.

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'Open Educational Path': a new educational way for Universities

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Abstract

Over the past fifteen years, the relationship between the Internet and academic education has been characterized by e-learning. Meanwhile, the Open philosophy has involved the emergence of new ways of designing and using courses.

Nowadays, the Internet plays a different role. It is not only a channel for virtual educational interactions (e-learning 1.0) or a place for participatory experiences which can enhance informal learning (e-learning 2.0): it is also an environment able to offer contents which are pedagogically and scientifically relevant.

The question is how small-medium Universities operating on a national scale could benefit from the changed scenario to design effective educational paths, able to give rise to new patterns of knowledge building.

Traditionally, teachers and/or academic institutions are the owners of disciplinary knowledge, but nowadays students and teachers have more opportunities of giving rise to communities, where knowledge can be enriched, restructured, questioned.

We have therefore defined a modality called Open Educational Path (OEP_{ath}®), an 'open' solution simple to set up, but, in our opinion, with significant educational implications, which is applicable following different principles of hybridization.

'Openness' is intended in this case in an epistemological sense: 'openness to the ongoing restructuring of the knowledge and its sharing'. Students, as individuals and as a class, are encouraged to pursue knowledge building and the identification of new paths (deepening or extending the teacher's proposal).

This form of exploration may also have an impact on face-to-face learning: the student will redefine the maps of the territory of knowledge following co-authoring models.

Keywords: OER; university; e-learning; path; open; education

1. The distance learning today: between 2.0 and OER

E-learning represents, from the beginning of the new millennium, a reference of great importance for Higher Education and for Lifelong Learning.
It is essentially defined by two conceptually different perspectives, which are however inextricably linked: a more technical one, dealing with the production and transfer of contents according to standards which are being gradually defined (Wiley, 2000, 2001; Hodgins, 2000, 2002, IEEE, 2002; Wagner, 2002), and a more constructivist one, aimed at enhancing the interactions for a collaborative knowledge building by the involved subjects (Palloff and Pratt, 1999, White and Weight, 1999; Draves, 2000).
With the introduction of web 2.0, there is also an evolution towards connectivism (Gillmor, 2004; Downes, 2005; O'Reilly, 2007; Song, 2010; Siemens and Weller, 2011), with a greater emphasis on informal learning and communities of practice (Wenger, 1998), while in international politics the Lifelong Learning takes prominence (Cresson, 1996; EU PArliament, 2000; EU Commission, 2010).
Despite these paradigm shifts, and despite the fact that many universities are born virtually or become virtual, distributive formats are still frequently being used, perhaps simply refining technologies already in use with the web 1.0: Learning Objects, 'depicted as being like lego blocks or atoms, little bits of content that could be put together or organized' (Downes, 2005) and compliant with accredited standards (IEEE, ISO, CEN), or podcasts, downloadable MP3 files in contrast to streaming video or audio (Robinson and Ritzko, 2009).

In the meantime, under the aegis of the word 'open', significant changes have occurred that involve many areas.
With the experience of the Open University the term had became synonymous of autonomy and flexibility, with which the students could decide objectives and methods of study, customizing their own curriculum (Open University website).
For the purpose of learning the most important aspect today is the Open Content, a creative work that is licensed in a manner that allows users to engage in the 4R activities: reuse, revise, remix, redistribute (Open Content website). Wiley, who created in 1998 the expression ‘open content’, refers explicitly to the Open Source software (Raymond, at Linux Kongress, 1997), which in turn was inspired by the pioneering and radical GNU Project of 1984 ('the users have the freedom to run, copy, distribute, study, change and improve the software').
The concept of Open Content is the basis of many initiatives: the OpenCourseWare ('free and open digital publication of high quality college and university-level educational materials'. OCW website), the Open Journals (DOAJ website), the Open Archives Initiative (Open Archives website) and other projects or models that have come to life in recent years.

In 2002, UNESCO recognized a peculiarity to the Open Content used in the field of education and coined the expression Open Educational Resources (OER) emphasizing that 'thanks to a confluence of technology and imagination, it is now feasible to recognize that knowledge as a social product can indeed become an international social property '.
The instance of Comenius 'omnia omnibus omnino'[47] begins to become concrete and to take a double social relevance (2007 Cape Town Open Education Declaration; 2009 Unesco Dakar Declaration on OER; 2012 Unesco Paris OER Declaration).

Recently, prestigious institutions, in implementing different educational modality from face-to-face to fully online, have promoted new educational delivery models for large-scale deployment of OER and also new methods of course design (Atkins et al., 2007; Hill, 2012).

47 Teaching everything to everyone in its entirety.

The nature of the current debate is largely catalyzed, on the one hand, by the concept of 'open' as gratuity or at least free access to scientific content of a high-level on a large scale, on the other hand, by the profitability or at least the sustainability of the operation or possible reputation returns that constitute an asset of the delivering organization.

Massive Open Online Courses (MOOC) allow an almost unlimited number of students to participate in the training 'events' (Downes, 2012a). Despite the convergence over the acronym, however, there are different types of MOOCs, which are very different between them and which for convenience can be classified into two families (Downes, 2012b; Hill, 2012):

- the connectivist ones (cMOOC, by Wiley, Couros, Cormier, etc.) are based on a strong involvement by the participants and are fostered by the enthusiasm of the students and the dedication of the teacher. They enhance the informal knowledge, are able to generate stable networks of people and produce a strong and positive effect on educational attitudes. However, they show a small degree of transferability and sustainability, they necessitate a high cost in terms of human resources and, in the cases of greater success, they are in some ways extemporary and exceptional thanks to the exceptional availability, preparation and personality of the teacher;

- the distributive instructivist ones (xMOOC, like Coursera, Udacity, edX, etc.), which allow the institutions to make economies of scale and students to benefit from a consistent set of courses, the limit equal to the entire educational offer of a university. They are the most common and popular MOOCs, but they require a large initial investment within the reach only of institutions or consortia of significant size and with long-term commitment. Moreover in terms of quality of teaching models these solutions are in fact very conservative, proposing basically one-to-many distribution models typical of a second-generation distance learning (Garrison, 1985; Nipper, 1989).

An interesting ongoing development concerns the renewal of practices with the Open Educational Practices (OEP), practices which support the production, use and reuse of high quality OER through institutional policies, promoting innovative pedagogical models, and empowering learners as co-producers on their lifelong learning path (ICDE website).
Important in this case is the transition from a transmissive philosophy to a philosophy of active and contextualised reuse (OPAL website; Camilleri and Ehlers, 2011; Ehlers, 2011). This involves a shift in emphasis, on the one hand, on the teachers' ability to reorganize and restructure the materials available in the network and, on the other hand, on the context receptiveness and responsiveness.

2. The premises of the OEP_{ath}® model

In the context mentioned above there is a need to design solutions which both incorporate the advantages of the Open Content and are wholly sustainable.

From existing practices, from the same materials that a teacher normally provides for his/her own classes (slides, bibliographies, notes), and therefore from his/her personal baggage of knowledge and from everyday teaching, it is quite easy to build the structure of an e-learning course and to solve organizational problems to make it open and accessible to a wide audience of students.
The teacher could then integrate the design by triggering a process of capitalization of the experience for later reuse and development, so as to activate a more complete sustainability.

However, courses thus designed only use the areas of decision that distance learning provides students with reference to the choice of the institution, curriculum, learning time, degree of

participation, whereas the teacher and the university remain owners of the 'savoir savant' and its educational transposition (Chevallard, 1985), as if there were an 'a priori' knowledge, fixed and exhaustive, of which only the institutions can become bearers.

Conversely, it has to be noted that, on the one hand, teachers, researchers and students learn more and more from the web, because academic communities commonly use the network, without intermediaries, to exchange the results of research or to publish systematization of areas of knowledge. On the other hand, knowledge which can be acquired is inherently in the making, incomplete and subject to continuous renewal (but not for this reason necessarily ephemeral nor questionable).
The search engine enhancements have been extraordinary, today they are used by more than 90% of the Internet users (Pew Internet website), with high reliability and satisfaction (Purcell et al., 2012). To these general purpose tools, we have to add others specialized ones for the different research fields, databases and catalogues, often accessible pursuant to academic agreements.
Youtube is the most visited website after Google and Facebook, it freely offers the possibility of finding videos shared in a public or private way, thus capturing the tacit knowledge shown by the experts while acting in real situations: in a section devoted to education (YouTube EDU website), the system hosts more than 700000 educational videos and more than 800 channels, some of which are directly managed by the universities.

It is important that the teacher analyzes his/her path, makes all the indications to achieve his/her results explicit, explores the surroundings of the proposed materials and identifies areas and interesting questions to develop. He/she must ask himself/herself the same question asked by Vannevar Bush (1945): how can I put students in a position to retrace the path of appropriation and building of knowledge which I have already experienced?
And how can I captivate the student, so that he/she goes beyond in these new areas of knowledge, between education and research, which are developing and to which I am still not arrived ?

Especially in social and educational sciences, which in many ways are ill-structured domains, with procedures of exchange of knowledge which are not fully defined and tested, it is essential to devote energy to find on the web new relevant and reliable documents (consider, for example, the advances in recent years in the field of the Evidence Based Education, of video-education, of intercultural education, of the special needs supports).

In our view, there appears what in the university context could be a future scenario, with the desired impact of the Open movement in terms of educational methods.

3. The OEP_{ath}®: an educational model

The hypotheses, paths and considerations presented here belong to the field of OEP and constitute a peculiar variation enhancing the student's active participation, at different levels according to his/her previous expertise until he/she becomes both a researcher of advanced solutions to complex or controversial scientific problems and an improver of the educational path itself.

Within a constructivist framework it is reasonable to foresee the spread of academic situations in which teachers and students can increasingly often cooperate in a common research (Wenger, 1998; Scardamalia and Bereiter, 1994, 2003, 2006), in a consolidation or even falsification of new knowledge, by experimenting the logic of scientific knowledge (Popper, 1959; Kuhn, 1962).
It is necessary to enter into the possible typologies of methodological and technological hybridizations, which are nowadays a subject of widespread interest (Haché et al., 2011; OEREU website; Open Education 2030 website).

With this in mind, we therefore propose a peculiar meaning of the word 'open', which should be understood as 'openness to the ongoing restructuring of the knowledge and its sharing', envisaging the ability to go beyond the acquired knowledge, with data that enrich and reinforce it or even question it.

On the basis of these premises, we have proposed the word OEP_{ath}®; in summary an OEP_{ath}®

- is a mixed path composed by learning and discovery of contents available online, which focuses on a well-defined subject-problem, is being implemented by university students at intermediate/expert level, is structured in modules usually of short duration (e.g. 10-20 hours of student activity);

- gives importance to the interaction between the student and the online contents. The teacher provides examples (modeling), methodological scaffold and technical guidance to search, gather and validate information (this part will tend to gradually reduce with the increasing of expertise of the students).
  The OEP_{ath}® places the focus on the awareness of relevance, reliability, usability of information, and therefore requires and tends to develop digital competence;

- is a path with pre-structured procedures (steps, schedules, criteria of hetero/self-assessment), but only partially pre-structured in its contents; it provides for areas in which the student is invited to 'go beyond' given knowledge and the initial scenario.
  This 'going beyond' can take place into two main different directions, an educational one or a disciplinary one: the student can contribute to the enrichment of the educational path, or try to answer significant and scientifically controversial questions.
  The OEP_{ath}® can also incorporate within itself a WebQuest (Dodge, 1995), although its primary purpose is not that, but to encourage a disciplinary learning process allowing areas of active participation, by integrating basic and advanced knowledge.

- starts off from study materials (slides, leads for reflection, podcasts, etc.) and indications that the teacher shares with the students. Suggestions concerning websites to be consulted in the beginning may also be provided;

- requires the student to perform tasks which are both of an executive nature and of a proactive and planning one;

- is supported by an apparatus of collaborative work, based for example on the Learning Management System of the University for the storage of materials, forums, wikis.
  Optionally, it can introduce informal knowledge through a social networking system;

- provides for a self-assessment process for the student (portfolio), which can be structured with automated tests and/or collect the outcome of open tasks, finally giving a rubric for the assessment.
  The student, thanks to the portfolio, carries out a guided reflective activity, by going through the whole path again, rebuilding relationships, memorizing the contents, rethinking about the choices made.
  The OEP_{ath}® may provide for a hetero-assessment and can be used for the skill certification for the undergraduate curriculum, or be integrated into face-to-face learning;

- provides an apparatus for self-enrichment. A history takes into account the active contributions proposed by the participants (new slides, changes in the path, design suggestions, etc.); a

committee of students and experts will consider whether or not to accept the proposals for the following editions.
Optionally, links to communities (even external to the university) and to social network can be included.

The OEP_{ath}® is therefore a path and not a course.
A course, through a structured sequence of bound and binding steps, hopes to include within itself all that the student should acquire. A path traces one of the possible ways through the field of knowledge.
A well indicated path is needed so that the traveller does not get lost, but leaves him/her the possibility of keeping it just as a reference and seeing with different eyes and running into unforeseen events compared to those who drew it. The path is open by its very nature, it enables and requires the subject a personal space for acquisition and selection of knowledge. In its most demanding form, it provides only a kit for explorers who go ahead in territories only partially known. Following a path is a form of active exploration.
This concept of path refers to the building of the web as a global hypertext (Berners Lee, 1989), to the philosophy of hypertext navigation, and to the theory of cognitive flexibility (Spiro et al., 1992; Jacobson and Spiro, 1995).

It is possible to identify different typologies of OEP_{ath}®:

- **'follow me'**, it is the model of the trailblazer teacher (Bush, 1945)
  - follow the teacher while he/she shows in the web a minimum research path, specifying the sources on which it is based. It is about following path reminders, identifying with a certain way of reasoning, sharing bibliographies;
  - verify the ability of going through the path again. In many cases, the verification can be automated (tests);

- **'develop your path',** it is the model which requires experiencing the provided contents and applying them
  - practice on materials and inquiries already indicated by the teacher, by checking with closed questionnaires or by making short reports on specific questions;
  - apply what you have learned by producing something in a autonomous way (an example referring to the learned concept, a summary slide, a graphic organizer, etc.);
  - think and comment the followed path;

- **'enrich the path'** when the student is asked to contribute to the integration of the existing path by adding or reviewing a section
  - propose new documentary material collected in slides, links to significant sites, links with external organisations and parties, etc.;

- **'try and compare'** when the student is asked to do a preliminary scouting; this model is consistent with the flipped classroom approach
  - do a preliminary research on the lesson that will be taught (in e-learning or blended mode);
  - compare with the class and with the teacher;
  - review the found materials and the learned knowledge;

- **'investigate and assess'**, it plans to critically reflect on the acquired knowledge
  - analyze a reference model or an hypothesis structured in key points or concepts and relationships;

- verify or refute the scientific quality of an information or reasoning, putting it into question, in its entirety or in part.

The third, fourth and fifth types are suitable for experienced students: they require a greater effort in terms of constructive participation or in terms of critical awareness.
It is possible to combine the different types (as in the following examples).

An OEP_{ath}® can be a single crossing of the landscape; several crossings from various directions allow a gradually more advanced mastery of the territory (Wittgenstein, 1953; Spiro et al., 1988). The crossings can be done in various ways and can also be applied in sequence, depending on the expertise of the class, the level of participation expected from the students and the goal to be achieved.

The rather limited number of hours per module reduces the risk of a drop of attention on the motivational front; the technical support is usually provided by the structures of the University, whereas the teacher remains in charge of cognitively equipping the student and of putting in place some mechanisms of caution:

- the provided instructions have to be particularly clear, exhaustive and available online. Moreover, the entire path should be previously tested by some students with prior knowledge similar to the one of the class;

- the indispensable knowledge must be provided and verified within a pre-course concerning, for example, the use of Learning Management System, the specialized search engines for the field in question, a basic glossary with the specialized terms in English, some basic legal knowledge for the reuse of materials found on the web, etc.;

- digital competence must be previously verified. Problems due to the complexity typical of the web must be prevented and the students have to clearly understand what it means to find resources, to assess their reliability and to collect them, as well as performing a collaborative work online;

- the peer tutoring is particularly encouraged (Hattie, 2012), especially for more advanced paths and it can be the base of a more general phase of crossed comments regarding the orientation and the validity of knowledge (cross-fertilization), to be performed by the entire class.

4. The experiences

The first experiences were conducted at the University of Florence, in the Department of Educational Science and Psychology.
The University has since long time adopted an Open Source Learning Management System (Moodle), making it available to all those teachers who wish to activate a course entirely online, or complement face-to-face courses with a distance learning option. Despite the presence of many non-resident students, however, the use of e-learning is still rare.

The specific opportunity to experience the thoughts above has occurred following the need to offer a e-learning course that would satisfy curricular goals of special education, save on the costs of human interaction student/teacher and develop the students' responsibility, inquiry skills and meta-cognition.
It was necessary to design OER resources, available without additional charges to every student enrolled at the University of Florence, released under Creative Commons license BY-NC-ND (Creative

Commons website), made in a reusable mode for several editions and transferable to degree programs other than those for which they were designed.

The first set of OEP_{ath}® we made concerned the Visual Communication for Inclusion[48]. The research question addressed was 'how the Visual Communication can facilitate the process of inclusion?':
The entire sequence is divided into 3 units of learning in a OEP_{ath}® form.

Each unit starts from the definition of the goals, it includes a synthetic illustration of the subject with slides (some of which may be the same created for teaching in the classroom), it indicates some resources which have to be consulted (articles, pictures, videos , websites), it provides a list of those to use for further developments, it gives instructions to activate autonomous research paths.
They develop in the following directions:

- 'The iconic language'
  Images can be an important tool for facilitating communication, especially in a school environment where there are individuals with cognitive and linguistic special needs. The question is what kind of visual communication (concrete, stylized, abstract) can be more appropriate for each different situation?
  Students must explore some websites indicated by the teacher and find others to select suitable images for elementary situations of communication, in particular to express emotions, to represent interpersonal relationships, to build stories, to manage the daily activities of the class.
  The path is partially closely guided and partially autonomous, it can be considered as a second type of OEP_{ath}® ('**develop your path**');

- 'Design for Inclusion and Universal Design for Learning (UDL)'
  According to the principles of UDL, the most effective communication is multimodal, meaning that it provides multiple channels, coherent and synchronized, of knowledge representation. In this way, the educational paths do not have to be customized every time following the disability observed, but have to be designed to be used by anyone. Visual communication has to be seen within this organic conception.
  Students must listen to some videos and read some papers to get back to the sources that have already been used by the teacher to create the summary slides. At the end, there is an evaluation test.
  In this case, there are research and understanding activities, but the path is almost entirely guided and can be seen as first type ('**follow me**').

- 'Educational uses for graphic organizers'
  The visuals can be an effective way of representing a concept or a phenomenon; the graphics for learning are the most useful to understand, memorise, discover and build knowledge and relationships between knowledge. There are criteria for identifying the most appropriate tools depending on the task and context and to avoid some common mistakes: the actual translation of these tools in cognitive scaffolds depends in part on their inherent nature, in part on the following process made by the teacher.

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48 e-l.unifi.it/course/view.php?id=1546 , accessible with the University credentials.

The course gives 2 ECTS credits. European Credit Transfer and Accumulation System (ECTS) is a standard for comparing the study attainment and performance of students of higher education across the European Union. One academic year corresponds to 60 ECTS credits and in Italy 1 credit corresponds to 25 hours of study.

The student, starting from certain criteria provided by the teacher and by a periodic table of the most used graphic organizers, has to illustrate a method of use of a graphic for learning, by describing a possible area of use.
The research is initially guided, by it then requires a great autonomy in performing the task; this is therefore a second type OEP_{ath}® ('**develop your path**') but on a higher cognitive level compared to the unit 'The iconic language'.

At the end of the 3 units of learning, each student is asked to develop/change the paths undertaken by suggesting a new slide, or a new link, or a restructuring of the path itself.
This task is in fact a further OEP_{ath}®, in this case of the third type, '**enrich the path**', in which a track history is held; the outcome will be presented to a committee before possibly inserting it in the OEP_{ath}® starting from the following edition.
Each student (or pair of student preferably) gathers in a portfolio the tasks carried out and fills out a self-assessment following a suggested rating scale.

The whole activity is supported by a Moodle platform (shared folders, forums, wikis, tasks) and lasts approximately 30 hours + 4 hours of pre-course on the e-learning platform and on the search engines + 16 hours for the portfolio. The elapsed time is 1 month.

The path was attended for curricular goals by about 180 students of third and fourth year of the Master Degree in Education (mandatory formation for teachers in the Pre-primary and Primary school). They have discussed the portfolio with the teacher during the examination, undergoing a hetero-evaluation.

With regard to this first experience we have acquired feedback from students, teachers and a group of professionals already working in education, who are experts in educational design.
The path has appeared to be sustainable both for students and for teachers: the students have not encountered any problem in the instructions, and the estimated time of completion resulted to be close to the real one; the preparatory activities for the exam were adequate in 100% of the cases, with some peaks of excellence.
The experts have suggested a greater clarity in the communication of the prerequisites (English language, planning skills in the third unit, etc.), even if, for the students of the Master Degree, these are competences which are usually acquired in the first two years of university.

The most significant proposals about future improvements concern mainly two directions: the implementation of other modules to analyze the topic from different perspectives, in order to give a more extensive and deeper answer to the research question, by experimenting also variations to the initials models of OEP_{ath}®; the application to teachers of Pre-primary or Primary School, as self-update path. In the coming years, it will be possible to create specific modules for every kind of special need.

A second experience of OEP_{ath}® was carried out as part of the Initial Teacher Training for Teaching in the Secondary School, attended by qualified subjects, each specialized in their own discipline and owning linguistic and digital competences, although with probable shortcomings on the methodological-educational side.

This training includes a professional practice and some university courses with face-to-face lessons.
With a group of trainees, we have also included an experience of Knowledge Building Community (Scardamalia and Bereiter, 1994, 2003, 2006) activated by an OEP_{ath}®.

The question asked to the class was as follows: 'How do graphic organizers (and in particular the concept maps) can become cognitive tools for teaching purposes? What scientific evidence can be adduced in support of this hypothesis?'.
Trainees were required to answer the question through the presentation of three different types of documents: video demonstrations about an educationally effective use of the chosen organizers, scientific evidence described in articles or books about the educational effectiveness of those same organizers, projects of education units using the organizers selected by the group. The first two types were to be found on the web, the last was to be carried out by the trainees themselves. Finally, trainees were asked to identify areas for improvement and to identify opportunities and limits in the transferability of the experience in the Secondary School.

The conceptual scheme was similar to that of the Master Degree in Education. The teachers could also partially use the same resources, but the level of competence required from trainees was much higher than the one required from students of the Master Degree.
This path has integrated several of the types listed above, the main focus is on the reliability of the information and therefore towards the $OEP_{ath}^{®}$ of the fifth type, '**investigate and assess**'.

Trainees have considered the path to be appropriate and more than 80% of comments was very positive, even integrating the instructions with comments on the amount and the organization of time, the availability of more developed software tools and in some cases the necessity to have stricter instructions (Menichetti and Micheletta, 2013).
On the contrary, trainees have been quite skeptical about the transferability of the experience in the school, expressing strong arguments characterized by realism, both concerning the prior knowledge necessary for the student and concerning timing and available resources.

In this second experience of OEP_{ath}®, the interactions within the class have been given a greater prominence.
This part, perhaps a little overlooked by trainees during assignments, was on the contrary a much appreciated aspect in the feedbacks, thanks to the innovative aspect and for its significance for the synergies implemented and the achieved results.
Going through a high level of reflectivity seems to fit well with the fifth type OEP_{ath}® and they should therefore be experimented in a professional area outside the university.

5. Conclusions

The Open Education, and the Open Educational Practices in particular, constitute a very important topic for the e-learning at the University. This contribution takes place in this frame of reference; it relates to the opportunity for a small-medium size university with users on a national scale, or for an individual teacher, to implement a distance learning solution benefiting from the new international scenarios and to create an effective educational model.

This paper proposes an educational method that we called Open Educational Path (OEP_{ath}®), with a constructivist approach, to be distributed in an e-learning form.
The meaning to be given to the term 'open' is 'openness to the ongoing restructuring of the knowledge and its sharing ', going beyond what is initially owned by the teacher or expert himself/herself.

Two observations have guided the design of these mixed paths of learning and discovery.
On the one hand, distributive and instructional MOOCs require a significant design and a substantial investment 'a priori', which are not always in the possibilities of the University, and connectivist

MOOCs did not seem to be suitable for all teachers, due to the effort required in terms of human resources.
On the other hand, the legacy of a substantialized knowledge, which can be organized in exhaustive blocks, is still very strong in university education and appears to be overcome in favour of the awareness that knowledge is always the outcome of a dynamic process of construction.

Today the web, with its 2.0 evolution and its unpredictable supply of quality contents which are scientifically relevant and reliable, can become the place where the path of knowledge building and knowledge itself are defined, providing areas for generative models that draw a new relationship between teacher and students; the teacher defines a portion of the path and gives guidance on the method, students can go beyond and uncover significant knowledge resources within a community of inquiry.

This allows laying the basis of a different epistemological approach to e-learning, meaningful especially for those who work in the field of educational and social sciences, in a framework in which (albeit in different ways) teachers and students become both researchers and students, provided that new conceptual schemes take place.

We have suggested some types of these new 'open' pathways to be generated on the web, which can adapt to varying levels of student's expertise and to different learning goals. The boundaries between learning and research are blending and fading; the student can diligently follow the trailblazer teacher, or become an assistant who develops and enriches the path designed by him/her, or become a researcher who autonomously helps to select undiscovered documentation or who can question the knowledge acquired by the teacher.

This different epistemic approach towards the web can also result in a qualitative change even for the face-to-face education, because it uses new models in which students can actually become co-authors of new knowledge and of their own learning path.
Thanks to this approach, a reversal of the relationship between face-to-face education and e-learning seems to be possible: while so far the first guided the second in a forced reductionist manner, today the latter can integrate the first one by bringing in a face-to-face class an autonomous contribution of contents and methods of doing research.

References

Atkins, D. E., Seely Brown, J., & Hammond, A. L. (2007). *A Review of the Open Educational Resources (OER) Movement: Achievements, Challenges, and New Opportunities.* The William and Flora Hewlett Foundation. Retrieved from http://www.hewlett.org/uploads/files/ReviewoftheOERMovement.pdf

Berners Lee, T. (1989). *Information Management: A Proposal.* Retrieved from http://cds.cern.ch/record/369245/files/dd-89-001.pdf

Bush, V. (1945). As we may think. *The Atlantic Monthly*, July. Retrieved from http://www.theatlantic.com/magazine/archive/1945/07/as-we-may-think/303881/

Camilleri, A. F., & Ehlers, U. D. (2011). *Mainstreaming Open Educational Practice. Recommendations for Policy.* The OPAL Consortium. Retrieved from http://efquel.org/wp-content/uploads/2012/03/Policy_Support_OEP.pdf

Chevallard, Y. (1985). *La transposition didactique: du savoir savant au savoir enseigné*. Grenoble: La

pensée sauvage.

Coursera website. Retrieved from https://www.coursera.org/

Creative Commons website. Retrieved from http://creativecommons.org

Cresson, E. (1996). *Enseigner et apprendre. Vers la société cognitive. Livre blanc sur l'éducation et la formation*. Luxembourg: Office des publications officielles des Communautés européennes. Retrieved from http://ec.europa.eu/languages/documents/doc409_fr.pdf

DOAJ, Directory of Open Access Journals website. Retrieved from http://www.doaj.org

Dodge, B. (1995). WebQuests: A technique for Internet-based learning. *Distance Educator*, 1(2), pp. 10-13.

Downes, S. (2005). e-learning 2.0. *eLearn Magazine*, October 2005. Retrieved from http://elearnmag.acm.org/featured.cfm?aid=1104968

Downes, S. (2012a). The rise of MOOCs. *Stephen's web*, April 2012. Retrieved from http://www.downes.ca/cgi-bin/page.cgi?post=57911

Downes, S. (2012b). MOOCs are really a platform. *Elearnspace, learning, networks, knowledge, technology, community*. Retrieved from http://www.elearnspace.org/blog/2012/07/25/moocs-are-really-a-platform/

Draves, W. (2000). *Teaching online*. River Falls, WI: Lern Books.

edX website. Retrieved from https://www.edx.org/

Ehlers, U. D. (2011). From Open Educational Resources to Open Educational Practices. *eLearning Papers* 23. Retrieved from http://www.elearningeuropa.info/files/media/media25231.pdf

EU Commission Education & Training (2010). *From the Lisbon Strategy to "Europe 2020"*. Retrieved from http://ec.europa.eu/education/focus/focus479_en.htm

EU Parliament (2000). *Lisbon European Council 23 and 24 March 2000. Presidency Conclusions*. Retrieved from http://www.europarl.europa.eu/summits/lis1_en.htm

Facebook website. Retrieved from http://www.facebook.com

Garrison, D. R. (1985). Three generation of technological innovation. *Distance Education*, n. 6, pp. 235-241.

Gillmor, D. (2004). *We the Media - Grassroots Journalism by the People, for the People*. Retrieved from http://www.authorama.com/we-the-media-3.html

Google website. Retrieved from http://www.google.com

GNU website. Retrieved from http://www.gnu.org/philosophy/free-sw.html

Haché, A., Ferrari A., & Punie, Y (2012). Open Education Initiatives in Higher Education. An Overview of Current Business and Sustainability Models. *Proceedings EADTU 25th Anniversary Conference 2012:*

The role of open and flexible education in European higher education systems for 2020: new models, new markets, new media. Pafos / Cyprus, 27-28 September 2012, pp. 81-98. Retrieved from http://www.academia.edu/2760564/Open_Education_initiatives_in_Higher_Education-an_overview_of_current_Business_and_sustainability_models._Article_p_81

Hattie, J. (2012). *Visible learning for teachers. Maximizing impact on learning.* Abingdon: Routledge.

Hill, P. (2012). Online Educational Delivery Models: a descriptive view. *Educause Review*, Nov-Dec 2012, pp. 85-97.

Hodgins, W. (2000). *Into the future: a vision paper*. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.87.8864&rep=rep1&type=pdf

Hodgins, W. (2002). The future of learning objects. *Proceedings of the 2002 eTEE Conference*. 11-16 August 2002. Davos, Switzerland. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.162.2852&rep=rep1&type=pdf

IEEE (2002). *Draft Standard for Learning Object Metadata*, 15 July 2002. Retrieved from http://ltsc.ieee.org/wg12/files/LOM_1484_12_1_v1_Final_Draft.pdf

ICDE, International Council for Open and Distance Education website. Retrieved from http://www.icde.org

Jacobson, M. J., & Spiro, R. J. (1995). Hypertext learning environments, cognitive flexibility, and the transfer of complex knowledge: An empirical investigation. *Journal of Educational Computing Research*, 12 (4), pp. 301-333.

Kuhn, T. (1962). *The Structure of Scientific Revolutions.* Chicago: The University of Chicago Press.

Menichetti, L., & Micheletta, S. (2013). Trasformare una classe di Tirocinio Formativo Attivo in una comunità alla ricerca di evidenze. *Form@re - Open Journal per la formazione in rete*, n.2, vol.13, pp. 77-90. Retrieved from http://www.fupress.net/index.php/formare/article/view/13258

Nipper, S. (1989). Third generation distance learning and computer conferencing. In R. D. Mason & A. R. Kaye (Eds), *Mindweave: Communication, computers and distance education.* Oxford: Pergamon Press.

OEREU, Open Educational Resources and Practices in Europe website. Retrieved from http://is.jrc.ec.europa.eu/pages/EAP/OEREU.html

OPAL, Open Educational Quality Initiative website. Retrieved from http://www.oer-quality.org/

Open Archives Initiative website. Retrieved from http://www.openarchives.org

Open Content website. Retrieved from http://www.opencontent.org

Open Content website. *Defining the "Open" in Open Content*. Retrieved from www.opencontent.org/definition

Open Content website. *Wiley wiki design courses.* Retrieved from http://opencontent.org/wiki/index.php?title=Wiley_Wiki_Design_Courses

OCW, Open Courseware Consortium website. Retrieved from http://www.ocwconsortium.org

Open education 2030 website. Retrieved from http://blogs.ec.europa.eu/openeducation2030/

Open University website. Retrieved from http://www.open.ac.uk

O'Reilly, T. (2007). What is Web 2.0: Design Patterns and Business Models for the Next Generation of Software. *Communications & Strategies*, n. 65, 1st quarter 2007, MPRA Paper No. 4578, posted 23. August 2007, pp. 17-37. Retrieved from http://mpra.ub.uni-muenchen.de/4578/

Palloff, R. M., & Pratt, K. (1999). *Building learning communities in cyberspace: Effective strategies for the online classroom*. San Francisco, CA: Jossey-Bass.

Pew Internet & American Life Project website. Retrieved from http://www.pewinternet.org

Popper, K. R. (1959). *The Logic of Scientific Discovery.* Abingdon: Routledge.

Purcell, K., Brenner, J., & Rainie, L. (2012). Search Engine Use 2012. *Pew Internet & American Life project*. Retrieved from http://www.pewinternet.org/Reports/2012/Search-Engine-Use-2012.aspx

Raymond, E. S. (1999). *The Cathedral & the Bazaar.* Sebastopol, CA: O'Reilly Media.

Robinson, S., & Ritzko, J. (2009). Podcasts in Education: what, why and how? *Proc. The Academy of Educational Leadership*, New Orleans, vol. 14, n. 1, pp. 38-43.

Scardamalia, M., & Bereiter, C. (1994). Computer support for knowledge-building communities. *The Journal of the Learning Sciences*, 3(3), pp. 265-283. Retrieved from http://hrast.pef.uni-lj.si/~joze/podiplomci/prs/clanki03/CSILE_Scardamaila.htm

Scardamalia, M., & Bereiter, C. (2003). Knowledge Building. *Encyclopedia of Education*, New York: Macmillan Reference, 2nd ed., pp. 1370-1373. Retrieved from http://ikit.org/fulltext/2003_knowledge_building.pdf

Scardamalia, M., & Bereiter, C. (2006). Knowledge Building: Theory, Pedagogy and Technology. In Sawyer K. (Eds.), *Cambridge handbook of the Learning Sciences.* Cambridge: Cambridge University Press, pp. 97-115.

Siemens, G., & Weller, M. (2011). Higher education and the promises and perils of social network. *Revista de Universidad y Sociedad del Conocimiento (RUSC)*, 8(1), pp. 164–170.

Song, F. (2010). Theorising Web 2.0. A Cultural Perspective. *Information, Communication and Society,* 13 (2), pp. 249-275.

Spiro, R. J., Coulson, R. L., Feltovich, P. J., & Anderson, D. (1988). Cognitive Flexibility Theory: Advanced Knowledge Acquisition in Ill-Structured Domains. In V. Patel (Ed.) *Program of the 10th Annual Conference of Cognitive Science Society*. Hillsdale, NJ: Lawrence Erlbaum Associates, pp. 187-199.

Spiro, R. J., Feltovich, P. J., Jacobson, M. I., & Coulson, R. L. (1992). Cognitive Flexibility, Constructivism, and Hypertext: Random Access Instruction for Advanced Knowledge Acquisition in Ill-Structured Domains. In T. M. Duffy & D. H. Jonassen, (Eds.) *Constructivism and the Technology of*

Instruction. Hillsdale, NJ: Lawrence Erlbaum Associates, pp. 57-75.

The Cape Town Open Education Declaration website. Retrieved from http://www.capetowndeclaration.org/

Udacity website. Retrieved from https://www.udacity.com

Unesco (2002). *Forum on the Impact of Open Courseware for Higher Education in Developing Countries* (Final report). Retrieved from http://unesdoc.unesco.org/images/0012/001285/128515e.pdf

Unesco, AUF, & OIF (2009). *Déclaration de Dakar sur les Ressources Éducatives Libres*. UNESCO, the Agence universitaire de la Francophonie (AUF) and the International Organization of la Francophonie (OIF). Retrieved from http://oercongress.weebly.com/uploads/4/1/3/4/4134458/05-rel-declaration_de_dakar-5_mars_2009.pdf

Unesco (2012). *Paris OER Declaration*. World OER Congress, Paris, June 20-22, 2012. Retrieved from http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/Events/English_Paris_OER_Declaration.pdf

Wagner, E. D., (2002). The new frontier of Learning Objects Design. *The eLearning Developers' Journal*, June 2002, pp. 1-7.

Wenger, E. (1998). *Communities of practice: Learning, Meaning and Identity.* Cambridge: Cambridge University Press.

White, K. W., & Weight, B. (1999). *The online teaching guide: An handbook of attitudes, strategies, and techniques for the virtual classroom*. Needham Heights, MA: Allyn and Bacon.

Wiley, D. A. (2000). *Learning object design and sequencing theory*. Retrieved from http://opencontent.org/docs/dissertation.pdf

Wiley, D. A. (2001). *The Instructional Use of Learning Objects.* Bloomington, IN: Association for Educational Communications and Technology.

Wittgenstein, L. (1953). *Philosophische Untersuchungen*. Oxford: G.E.M. Anscombe e R. Rhees. Trad. (1999) *Ricerche filosofiche*. Torino: Einaudi.

Youtube website. Retrieved from http://youtube.com

YouTube EDU website. Retrieved from http://youtubeedu.org

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Experiencing Diversity in a ODL higher education context.[49]

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Abstract

Complex and global changes in societies have intensify migratory movements. Consequently, todays population in higher education institutions is characterized by a multidimensional diversity in terms of culture, life experience and expectations, that open up new intercultural universes of communication and learning. As a contribute to respond to this challenge, this paper presents results on the exploratory phase of the implementation of an online course focusing diversity in the population of higher education institutions in Europe. The course was designed, using a collaborative methodology approach, by a group of scholars, partners in the context of an European project. In order to engage students more deeply in learning and reflection, the pedagogical approach adopted was based in the development of interconnections between conceptual knowledge and digital storytelling pieces that were developed by students themselves under the teachers' proposal and supervision.

Keywords: Diversity; Online education; Virtual classroom; Virtual Pedagogical Model

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1. INTRODUCTION

In the global and multicultural context of contemporary societies, different cultural dimensions and social dynamics are expressed in the higher education changing populations of students. In several ways, diversity, expressed throughout languages, behaviors, nationalities, races and ethnicities, religions, genders, and social classes are present in classrooms. This shifting scenario are posing new challenges to teachers and administrators, since each student has his/her own way of learning, participate, and valuing education and knowledge. Moreover, there are an increasing number of immigrants that come to the European Union (EU) that need to be enrolled in higher education. According to the *Empowering people, driving change: Social innovation in the European Union* (2011, p. 21)

Despite the economic benefits of migration, the social benefits of diversity and migrants' contributions to the social welfare of society (…) the treatment of migrants in society leaves a lot to be desired. Although some progress has been made in tackling overt racism and intolerance, there remain huge problems of discrimination, unemployment and access to decent public services such as housing, health and good schools.

The same source highlight that "A common understanding of equity is that it is achieved if the student body reflects the diversity of the population."(p.47).

The European Commission proclaimed the year of 2008, as the European Year of Intercultural Dialogue. The general objectives of the Year focused on:

- promoting intercultural dialogue;
- highlighting the opportunities intercultural dialogue provide for a diverse society;
- raising awareness of the value of active citizenship;
- emphasizing the contribution diversity makes to the heritage of European Union (EU) countries. http://ec.europa.eu/culture/portal/events/current/dialogue2008_en.htm

This kind of initiative, along with other multicultural celebrations and programs, by and large have been contributing to construct diversity as a contemporaneous theme, a word that now belongs to the daily discourse and conversation. However, there is still a long way to go in increasing and wide spreading awareness about diversity as a powerful characteristic of humanity that requires better understanding and practice. There is a clear need to recognize and embrace diversity as a different way of knowing, acting and thinking the world and to solve problems. Accept and live it in daily life represents a step that is yet difficult to surmount. This is especially true in higher education.

Following Sweden anthropologist Ulf Hannerz, (2010), we highlight multiple aspects of diversity that are the most relevant for higher education institutions: to understand that diversity is limitless, and that it happened already in the past, exists in the present, and will continue existing in the future. Additionally, there are not only the real need to respect and celebrate people's rights but also to recognize that new cultural forms continue to develop, bringing about new diversity.

This paper presents the preliminary results of ongoing research that aims to understand diversity in online courses. In particular it aims to uncover new potentials and contributions of online courses that can trigger individual change to meet the challenges of contemporary societies, especially the ones related to social and cultural diversity.

We have discussed and implemented strategies for increasing student participation based on the exploitation of common virtual spaces shared by students in classes of the same course, as well as strategies for collaborative sharing of digital resources. Regarding the strategy for increasing overall student participation in the collaborative learning process, we present in this paper the experimental results collected during the workout of online collective activities.

This paper is divided into the following sections. In section 2 we present a general framework to interpret diversity in online higher education contexts and describe its particular instantiation to the understanding of contemporary diversity problematic. In section 3 we present a general overview of the project DIV.ED –Experiencing diversity in higher education, its main purposes, learning outcomes and learning materials. In section 4, we make a general presentation of Universidade Aberta, the institution where the authors work and the present research was developed. We present its virtual pedagogical model and describe how the project design was articulated to the virtual pedagogical model requirements. Section 5 is headed to the discussion of both the strategies used for collaborative sharing of experiences within the virtual class and for increasing student participation. Finally, in the last section, some final remarks are drawn.

2. GLOBALIZATION, DIVERSITY and VIRTUAL CLASSES

The idea of "Globalization" referring to:

to the intensification of global interconnectedness, suggesting a world full of movement and mixture, contact and linkages, and persistent cultural interaction and exchanges. (India & Rosaldo, 2002, p. 2).

is full of interest for us, as teachers and researchers at a distance education university, where each day we testimony, in our virtual classes, the global "interconnectedness", the global culture, and the mix of people as students participate in the learning process from remote places all over the world.

In fact, in the last decades, higher education institutions have experienced complex changes. Not only do they have to train students for economic and professional purposes, but they also have to spread the technological paradigm as well as promote a democratic rationality among students to participate in society as informed and critical citizens of an increasing diverse world. Moreover, as Kerckhove (1995, p. 194) notes "globalization is one of the psychological conditions of cyberculture". Moreover, when we take globalization in the above perspective (India & Rosaldo, 2002, p. 2), we are better able to comprehend how the new features of Knowledge space are consonant with the requirements of the global dimensions of culture, especially in its relationships to diversity.

Likewise, in order to develop intelligent communities that enable people to deal with change and high speed of social transformation, and predicting people´s needs for interaction in such contexts, Levy (1997) puts forward the notion of collective intelligence as "valorization, optimal utilization and synergy in competence, imagination and intellectual energy, whatever will be its qualitative diversity and wherever located" (p.179). According to the same author (2001):

Our living knowledge, skills, and abilities are in the process of being recognized as the primary source of all other wealth. What then will our new communication tools be used for? … The role of information technology and digital communication is not to "replace mankind" but to promote the construction of intelligent communities in which our social and cognitive potential can be mutually developed and enhanced (p. 258).

In this theoretical framework, collaborative learning emerges as the major mode of learning. In addition, Brown & Lauder (2004, p. 331) consider that intelligence in postindustrial societies must include the capacities of "being able to imagine and assess alternative futures," highlighting that "collective intelligence, therefore, depends upon a new disposition of mind" (p. 334).

Virtual environments are among the factors that contribute to spread up of new diversity, alternative futures and intelligent communities. Not only because open distance learning (ODL) is increasing the complexity of diversity in online classes, but also because in virtual classes there are more possibility for contact happening between people from different cultures while virtual classes contribute to open up new virtual territories for exploration and culturalization. Thus, we can state, as Conole, that online education and eLearning "is one of the key catalysts for change in current higher education" scenario. (2007, p. 286)

Within the globalized world of distance education nations are no longer a border to individuals who want to choose a specific higher education program to pursue their objectives, diversity clearly emerges as a characteristic of the online educational environments. To the extent that ODL allows a transnational pedagogical offer, it promotes not only the mix of the population in virtual classrooms but also the social interactions and belongings to social networks in other virtual places available in the learning management system (LMS) and Web 2 (Moreira, 2012).

3. THE PROJECT DIV.ED –Experiencing diversity in (higher) education

The project **DIV.ED Diversity in the learning experience in Higher Education** is an international project funded by the European Commission, under the Long Life Learning Erasmus Program. Its main purpose is to design, pilot, implement and exploit a module on the topic of diversity. The main target group is higher education students.

The module was created, using a collaborative approach, by a group of scholars, partners in the project. Figure 1 shows the logos of the partnership.

Figure 1: The logos of the partnership.

The module addresses diversity. It aims to analyze and discuss diversity in educational settings and their implications to university life and students' success. The perspective is to take diversity as both a challenge and an opportunity.

During the teaching of the module, the study, discussion and reflection is to be oriented towards helping students to develop a cultural awareness about diversity in daily situations and how to improve dialogue with each other. More explicitly, the module objectives are:

- To aid reflection on diversity in practical situations.
- To analyze emergent conflicts from a diverse sociocultural perspective.
- To develop intercultural competences.
- To develop intercultural communication and collaboration skills.
- To raise awareness of diversity and its importance in contemporary societies.
- To reflect on multicultural and intercultural experiences.

Although the course was designed targeting primarily students of higher education, the project aims at deliver course guidelines for different groups. Thus, the module was designed in a flexible way in order to make it easier to adapt to different target groups - a 6 credit ECTS (European Credit Transfer System) module was planned and thought off as three independent, although sequential, 2 ECTS modules:

- Part 1- concepts are approached as a way to learn how to cope with the complexity of human and social diversity and understand how its benefits and advantages represent an unprecedented challenge to society.
- Part II - approaches diversity in the learning processes. Attitudes, students-teachers interactions and collaborative learning are topics under analyze and self-reflection to further understanding and enrich a classroom dynamics that includes and empowers diversity.
- Part III - it mainly deals with the different dimensions of communication especially in its verbal and non-verbal aspects. The final chapter contains reflections and proposals for a stronger role of the educational sector in facing numerous current diversity challenges as a support to a widespread inclusion policy.

Possible target groups are: Pre-Service Teachers; Leaders of community groups and non-profit organizations; Immigrant and minority groups; Community volunteers or citizens interested in volunteering; People who are committed to working for equity and social justice

The DIV.ED module methodological approach was set up in agreement with both the Bologna requisites and the module objectives. In this frame the methodological principles are:

- Teaching student-centered.
- Teaching based on learning experiences and resources diversification.
- Teaching based on inclusion and celebration of diversity.

Materials produced within the project include: a course guide, an e-course version; an e-text book (nine chapters concerning: theoretical knowledge, tasks/activities; study questions and further reading materials), a documentary movie , DVDs and a set of digital storytelling.

4. DIV.ED at Universidade Aberta: OUR APPROACH

Universidade Aberta is the Portuguese open distance university. As a public distance higher education institution it is very well positioned to achieved some of the recommendations concerning the assurance of accessibility to education expressed in the "Education and Training 2010" goals (European Commission, 2008a).

The Virtual Pedagogical Model (VPM) defined by Pereira, Quintas-Mendes, Morgado, Amante & Bidarra, (2007) was adopted at the institution under study and describes how to design and implement teaching-learning contexts under online for courses in higher education. The VPM model replaces a previous adopted industrial-type model, based on written materials and learning activities. In the old model, there was no real interaction among students and no option to perform assessment activities at mid-term.

The VPM, in use since 2007, promotes student-student interaction through collaborative learning and is focused on continuous assessment. The introduction of the VPM was a major breakthrough, with the results well reflected in today's increasing numbers of enrolled students and their rate of success (Coelho & Rocio, 2009). The VPM is based on four major principles, namely:

- The Principle of Student-Centered Learning, where students are assumed to be active individuals, builder of their own knowledge, driving their learning process as integral parts of a learning community;
- The Principle of Flexibility, where students can learn anywhere and anytime, regardless of the space-time constraints that, by contrast, classroom teaching imposes;
- The Principle of online Interaction, which extends to the new type of student-student interaction that occurs in asynchronous discussion groups within each virtual class and is the basis for collaborative learning;
- The Principle of Digital Inclusion, where the educational institution is the agent of training and transmission of basic ICT skills for those who find themselves excluded from this type of knowledge and thus unable to attend higher education in OL;

Since the VPM provides a complete reference model for planning, organizing and implementing university level online courses by fully exploring the facilities offered by ICT, in regard to the Module *Experiencing Diversity Course Part* I our task was to conciliate the VPM of Universidade Aberta with the project methodological approach. This was not a difficult task, since there is a balance and a tuning between the contemporaneous Bologna space for higher education and research.

Thus, the DIV.ED module at Universidade Aberta takes place in a virtual class, where several different locations articulate different functionalities in order for students to participate in classes and develop interactions with each other and with the teacher, which is essential for collaborative learning to

happen. Moreover, supervision and monitoring of student work is especially focused on the continuous learning processes where students are invited not only to reflect upon concepts and theories but also to share their own individual experiences and feelings about the themes, and to apply their learning to express a more informed and suitable analyses and reflection. Hence, students are in fact at the center of the learning process and are constructing it by themselves, showing and expressing what they learned throughout several tasks, as for example, engaging in dialogue in the classroom's forums to present and argue about their own personal perspective, on a situation under analyses, or to present a brief essay or a short movie or photo (or set of) to illustrate a concept.

In short, for each topic, besides the mandatory readings, students bring into the class their experiences as examples for discussion and reflection about the concepts presented in classes. From students' participation and contributions, new activities are integrated and designed with their own material in the form of photos, essays, cultural reports, interviews, as well as daily-life episodes regarding their life in a multicultural setting. Figure 2 shows an overview of the virtual class.

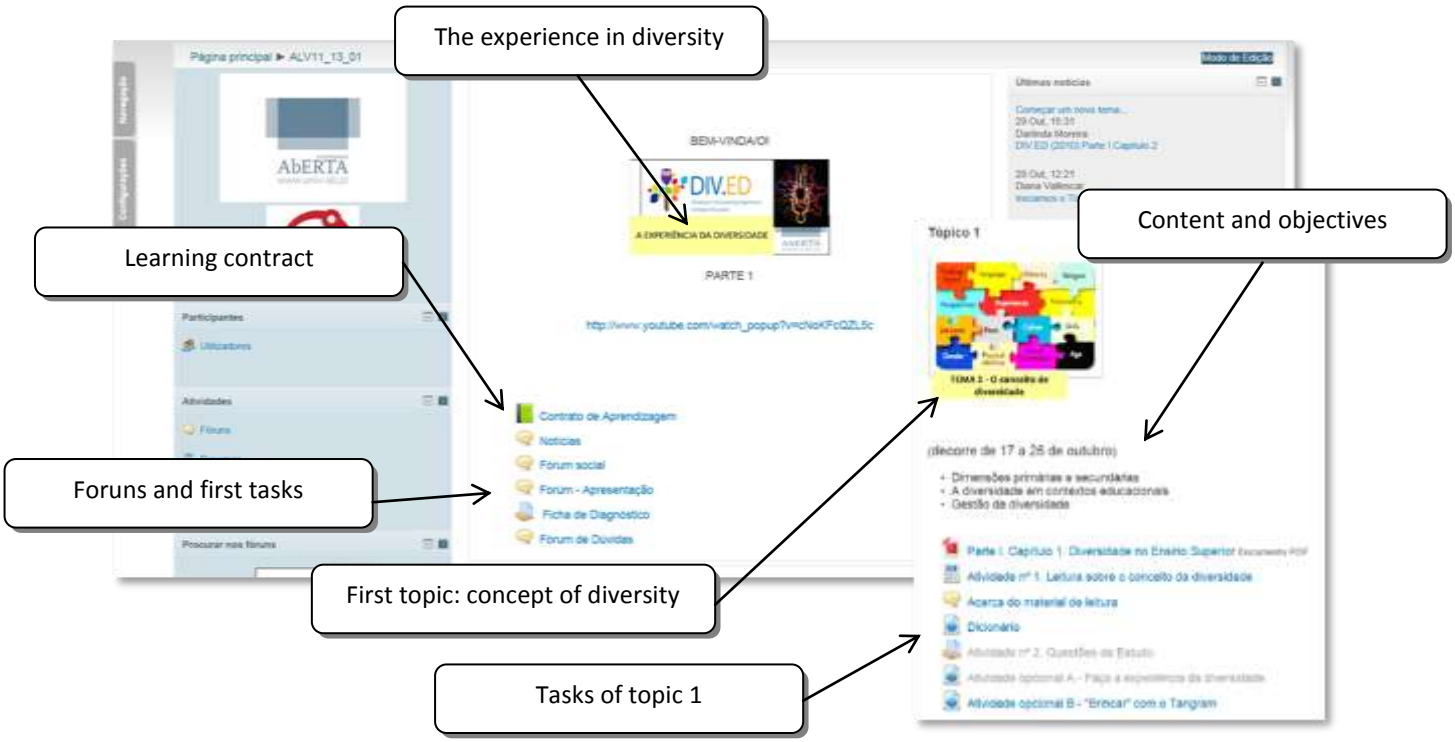

Figure 2: The front look of the virtual class and its different functionalities.

Source: E-learning platform of Universidade Aberta, Lisbon.

Some tasks proposed are worked out by students, individually or in small groups, in the virtual class. The following figure shows a forum in the virtual classroom. The first post is about the main topics of the chapter. This is one of the students are sharing their own interpretation of the theme mandatory readings. Next posts are students' answers to a task whose question was to present briefly each one's culture to a foreign person.

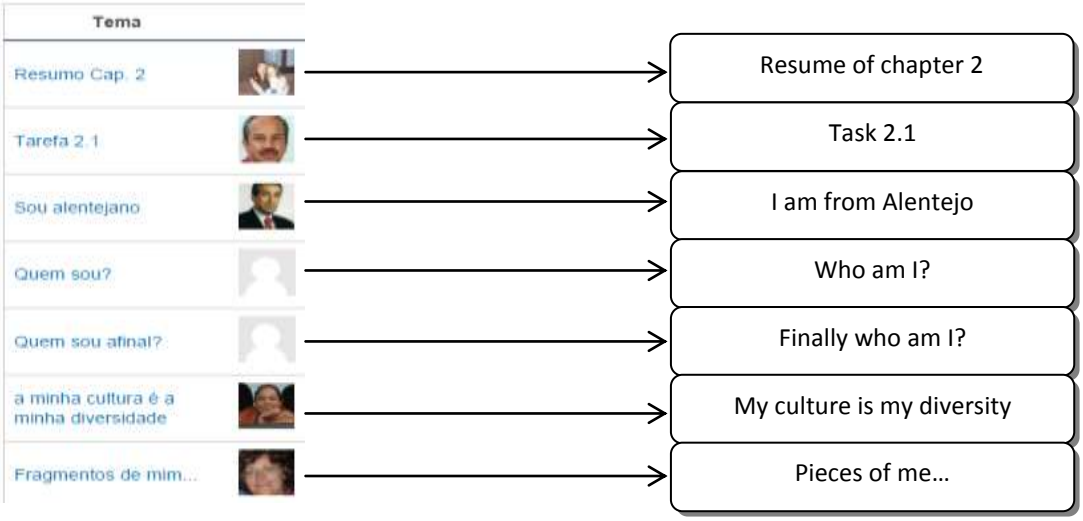

Figure 3: A view of forum's interface within a typical virtual class room, showing the topics of each student post. Source: E-learning platform of Universidade Aberta.

5. Potentialities and innovation

A Wheeler & Keegan, (2009) argue

there are emerging cultures in the social networking communities, and we should expect them to emerge. Wherever people gather, whether physically or virtually, shared social meanings are evolved that serve to identify that group as distinct, and perhaps even define them as unique." (p. 286).

We complement the above claim stating that an innovative pedagogical approach is essential. The use of new forms of teaching is indispensable for the emergent news forms of learning. In the case of the DIV.ED module at Universidade Aberta, we highlight the benefits of the so called **seamless learning** pedagogy pointed out as an innovative pedagogy. In fact, the teacher implements discussions in the virtual classroom and enriches theoretical thinking with personalized experiences, i.e, to the extent that " learners explore themes from the classroom in their homes or outdoors and use their life experiences to enrich classroom lessons " (Sharples, McAndrew, Weller, Ferguson, FitzGerald, Hirst, & Gaved, 2013, p. 17). Consequently, teachers are connecting scientific content with students' individual and collective experiences. By this way, reflection and expression are used altogether to build a community of learners and to create a collective knowledge based on sharing narratives about themselves and "the other" about how to cope and comprehend "the different". Furthermore, the module aims at regarding the promotion of students' competences to deal with both daily life and global situations. This is achieved by gathering examples and ideas from students' daily life as well as from more distant and abstract situations.

6. Final remarks

To better understand diversity in the higher education context, namely in online education and virtual classrooms environments, it is necessary (if not mandatory) to connect different approaches levels, namely, why people use technology, the meaning that they confer to it and the capacity of

cyberspace to create opportunities for changing societies. That is, it is necessary to articulate subjectivity and reality, and look to the different ways in which people identify themselves as belonging to the digital network in order to face changes, at a social and personal levels, and to their perception and consciousness of the role of diversity as a constant characteristic of this emergent new cultural environment with an innovative power to concretize social transformation.

In conclusion, the growing number of people enrolled in online courses varies thoroughly in their purposes and aims. It is our claim that among the diverse publics that look for online courses some see it as an opportunity not only for professional qualifications but also to continue to develop cognition and acquire competences to fulfill the social need for knowledge. This ultimately shows that online courses have the capacity to empower students in their unique sensitivity, and willingness to take diversity as a requirement for social transformation which requires a continuing act of learning.

In this perspective, only an educational attitude that opens up the communication with local experience of students' unique experience of diversity allows negotiation among other more diverse social contexts, to move on into the role of multiplicity in the process of the universalization knowledge. Students' authorship in the connection between levels of experience of diversity: their won, their communities or local experiences, and the global experience of diversity at large is crucial to confer meaning and utility to behaviors inside and outside higher education institutions and to develop imagery where the empowerment of diversity is present.

REFERENCES

Brown, P. & Lauder, H. (2004) Poverty, Learning Opportunities, and the Social Construction of Collective Intelligence. In, Olssen, M (Ed.) Culture and Learning. Access and opportunity in the classroom. New York: Information Age Publishing.

Coelho, J. & Rocio, V. (2009) Implementação de ferramentas específicas ao modelo pedagógico da UAb na plataforma Moodle. In XIII Encontro Iberoamericano da Educação Superior a Distância, Lisboa, 16-18 Setembro, 2009.

Coelho, J. & Marcos, A (2010) "O fórum central: catalizador da participação do aluno em turmas virtuais no ensino a distancia online". In: "Encontros Bibli: Revista Eletrônica de Biblioteconomia e Ciência da Informação", pp.65-84, Nov. 2010, ISSN 1518-2924, Florianópolis, Santa Catarina, Brasil. (doi 10.5007/1518-2924.2010v15nesp2p85)

Conole, G. (2007) An International Comparison of the Relationship between Policy and Practice in E-learning. In Richards Andrews and Caroline Haythornthwaite (Eds) The sage Handbook of E-Learning Research. Los Angeles: Sage Publications pp. 286-310

BEPA Bureau of European Policy Advisors (2011) *Empowering people, driving change: Social Innovation in the European Union.* Luxembourg: Publications Office of the European Union, 2011 N° Cat. NJ-79-11-114-EN-C. ISBN 978-92-79-19275-3. doi: 10.2796/13155

The EQUNET Consortium (2010) Evolving diversity. An overview of equitable access to HE in Europe ISBN: 978-2-930429-21-2 "Education and Training 2010" goals (European Commission, 2008a).

European Access Network (2012) *Student Diversity in Higher Education: Conflicting Realities*. Published by the European Access Network, London, UK 2012 .ISBN: 978-0-9567730-4-3

European Commission (2008a). Education and Training 2010.

http://ec.europa.eu/education/policies/2010/et_2010_en.html

European Commission (2008b). The Bologna Process.

http://ec.europa.eu/education/policies/educ/bologna/bologna_en.html

Hannerz, U. (2010) *Anthropology's World. Life in a Twenty-First-Century discipline*. London: Pluto Press.

India, J. X. & Rosaldo, R. (2002). A world in motion. In J.X. India, & R. Rosaldo (Eds.), *The Anthropology of globalization. A reader*. Oxford: Blackwell Publishers. (p. 1-34).

Kerckove, D. (1995/1997) *A pele da cultura*. Lisboa: Relógio D´Agua

Lévy, P. (1997/2000) *Cibercultura*. Lisboa: Instituto Piaget

Lévy, P.(2001) Collective Intelligence. In TREND, D. (Ed) (2001) *Reading Digital Cultures*. Malden: Blackwell Publishers Ltd p.253-258

Moreira, D (2012) Um estudo de caso sobre o desenvolvimento do ensino online numa universidade presencial. Comunicação aceite no VII Congresso Iberoamericano de Docência Universitária. Ensino Superior- Inovação e Qualidade da Docência. 24 a 27 de junho de 2012. Universidade do Porto, Portugal. ISBN 978-989-8471-06-2

Pereira, A., Oliveira, I., Tinoca, L., Amante, L., Relvas, M.J., Pinto, M. C. T. & Moreira, D. (2009) "Evaluating Continuous Assessment Quality in Competence-based Education Online: The Case of the E-folio" Em, EURODL European Journal of Open, Distance and E-Learning http://www.eurodl.org/?article=373

Pereira, A., Mendes, A.Q., Morgado, L., Amante, L. & Bidarra, A. (2007). Universidade Aberta's

Pedagogical Model for Distance Education: A University for the Future. Lisboa: Universidade Aberta.

Sharples, M., McAndrew, P., Weller, M., Ferguson, R., FitzGerald, E., Hirst,T. & Gaved, M. (2013) *Innovating Pedagogy 2013. Open University Innovation Report 2*. Milton Keynes: The Open University.

Wheeler, S. & Keegan, (2009) The Leraning Context. In Steve Wheeler (Eds). Connected Minds, emerging cultures. Cybercultures in Online Learning. Charlotte: Information Age Publishing, Inc,

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Students' attitudes and satisfaction with distance education in Sweden

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Abstract

Distance learning is growing internationally including in Sweden. The proportion of distance students has increased from one tenth to now nearly one third of all university students in the country over the last ten years. Statistics Sweden conducted for the first time in 2012 a survey of distance education in Sweden. The aim was to document the distance students' attitudes towards distance education at universities.
The main result:

- Interest in the subject is the main reason for the choice of the distance courses
- The majority stated that they never intended to take credits or to complete the distance learning course
- Distance learning is usually a sideline
- Distance students have usually previously studied at universities
- It is more common to study fully online courses
- Programme students at a distance are diligent learning centre visitors
- Working while studying is most common reason for choosing distance learning
- The majority of distance learners are women

Overall, the distance students nationally were somewhat more satisfied than students at Lund University. Interesting to note is that distance learners stated critical thinking and problem-solving characteristics captured largely by the education. These abilities are not stressed at all for campus students. This has not been detected in previous studies of distance education.

Teachers' availability, presence, and to utilise the network's full potential, are listed as hallmarks of quality and degree of satisfaction in distance education and learning. Course design and examinations, as well as transparency and flexibility in the course, are likewise particular satisfaction indicators.
Keywords: attitudes, critical thinking, distance education, problem solving, satisfaction, Sweden

Introduction

Distance learning is growing internationally including in Sweden. The proportion of distance students has increased from one tenth to nearly one third of all university students in the country over the last ten years. Against this background, Statistics Sweden (SCB) conducted for the first time in 2012 a survey of distance education in Sweden and published the report - *Distance Learning in Higher Education in Sweden* (SCB, 2012a b c). The aim of the survey was to document the distance students' attitudes towards distance education at university and to get their views on how the programme

worked for them. The aim of this study was to identify:

- The aims of the students of taking distance education
- The reasons why the students were studying at a distance
- The students' perception of the quality of distance education

The national survey included approximately 17 000 students who were registered in one or more distance courses in autumn 2010 at Swedish universities. The response rate was 49 percent. A group of students on campus were also surveyed to compare response patterns between distance and campus students. This group consisted of about 4 000 people who were registered on one or more campus-based courses in higher education in the country during the autumn term 2010. The response rate for this group was 47 percent. The results of the survey were upgraded to the population level, which means that the findings can be generalized.

Lund University has processed the material valid for the university, as besides the national aims of SCB, the reason for participation was a deeper investigation and to learn from the results and their students' responses about how they evaluated their experiences of distance studying at Lund University. Taking part in this investigation was part of the quality assurance programme at the University.

The survey in brief

Questionnaires were sent out to all students and the course on which they was enrolled was pre-printed in the individual survey. The survey was composed of twenty-five questions. Some of the questions could have several answers. Mainly the answers were very good, good, bad, very bad and don´t know /or not relevant. On some questions it was possible with open comments. In the final question students were asked to write additional information or open answers

Thematic issues
The thematic issues in the survey were as outlined in Table 1

Table 1

Thematic issues
Registration on course and degree of activity
Completion of the course and reasons if this was not the case
Reasons for seeking distance learning
Effectiveness
Satisfaction dimensions
If the course required physical meetings
Learning platform
If learning centers were used (physical meeting places) [50]

50 Learning centres provide you with the opportunity to participate in higher education courses without having to move to another town. You will have access to a good study environment as well as the opportunity to meet other students. The home is not always the quietest place for study and you perhaps need a place where you can concentrate more fully on your work. The majority of municipalities around the country have provision for a learning centre. These centres can also be referred to as university centres, study centres or centres of expertise. The local learning centre functions as a study environment and meeting place for students on distance courses. Learning centres provide service, support and help both prior to and during the period of study. Many universities also arrange meetings and group exercises at the learning centres. At your local

Cooperation between students
Teachers' availability
Employment and study funding
Other comments

The main results at national level

The results show that seven out of ten students were satisfied with their distance course. Out of those who completed their course, nine out of ten were satisfied, both among students on campus and among distance learners. Only half of those who did not complete the distance course were happy. Campus students completed at slightly higher levels than distance students. The main result can be summarised as:

- Interest in the subject is the main reason for the choice of the distance courses
- The majority stated that they never intended to take credits or to complete the distance learning course
- Distance learning is usually a sideline
- Distance students have usually previously studied at universities
- It is more common to study fully online courses
- Programme students at a distance are diligent learning centre visitors
- Working while studying is most common reason for choosing distance learning
- The majority of distance learners are women

The main results for Lund University

Overall, the distance students nationally were somewhat more satisfied than students at Lund University. Most of the students at Lund University were, however, satisfied with the course in its entirety. It can be noted that the majority of the students were satisfied or very satisfied with the course as a whole. Would the choice take place again, about a third of the students would choose the same course again. The reasons why students applied to distance courses from Lund University are described in four main areas:

- Student's interest in the subject / course content (70 percent)
- To train for a profession / degree (22 percent)
- To increase the chances of getting work / other work (20 percent)
- Training in their current work (18 percent)

learning centre you can get access to:

- traditional study facilities (classrooms, group workrooms, self-study places, coffee break facilities etc
- staff who can provide administrative and technical support.
- computers with internet connections and various software packages
- video conference
- facilities for copying
- reference literature
- facilities to do written examinations under supervision
  www.larcentra.se

Distance studies at Lund University are chosen most frequently for personal reasons such as interest and lifestyle, but also to obtain the degree and / or to increase the chances of getting work. There is an even distribution between new students and those who have previously studied at college / university. The gender distribution is also relatively even. Most distance students are working or studying full time / part time. The most common study funding was waged from work. Just a small percentage stated that they put down at least 40 hours of study.

Most students were studying fully online courses. The point production was basically 100 percent. The goal achievement was fulfilled by the students to a very high degree. Reasons for non-completion of the course were that they either studied or worked alongside the distance course. Those who did not complete the course reported that they focused on another course and more often that course was already full time or that they worked in parallel. Common reasons why students did not complete the course were reduced motivation, loss of interest or change of focus. Personal and social reasons were also reported. Still other reasons were directly related to the course, such as educational, technical or administrative dilemmas. The majority indicated that they had never had the intention to complete the course. The students expressed several issues which are of importance for the possibilities of finishing the courses, such issues were specified as more time, educational support, motivation, more flexible course design and overall flexibility and transparency in the course.

The students were largely satisfied with the learning management system (LMS) as such. Half of the distance student group were quite pleased to discuss with other students via the learning platform, but many also indicated that they didn´t know about it/ or that it was not relevant. Most of the students replied that there were no mandatory assignments where collaboration, communication and interaction in the course were required to be approved for the course. The majority also stated that there was no mandatory cooperation with their fellow students or collaboration by email or Webcast / conference or the like, nor by phone / teleconference. The majority stated that the discussion forums on the web were the most common form of communication which, however, was used to a low extent. A large percentage of the students did not know if there were demands to attend physical meetings or whether there was compulsory cooperation in the course. The most common form of communication was email, especially when it came to teacher to student contact and vice versa. Students were satisfied with teacher availability by email, but just as many did not know. Regarding discussion forums or discussions over the phone and the availability of the teachers by phone were usually not used or students found it not relevant for them. Opportunities for interaction with both fellow students, teachers, material and content seemed surprisingly low considering the network and digitalisation potentials of online courses. Most students felt that they did not know or that there were no questions on how accessible the teacher was. Learning centres were used at low level at Lund University, and especially in comparison with the national average.

The majority were content with the dimensions of satisfaction that were outlined in the survey. Among the more interesting findings, seven out of ten say they applied to distance courses solely out of personal interest and relatively few intended to complete the course. Interesting to note is also that distance learners stated critical thinking and problem-solving characteristics captured largely by the education. These abilities are not stressed at all for campus students. This was shown both in the national study and in the results for Lund University. This has not been detected in previous studies of distance learning.

Other areas that differed, however, in a more negative way were the opportunities for influence, where half of the students indicated that they did not know whether they were given the opportunity to influence or not. A large majority, however, were dissatisfied with the opportunities to influence the course content and form. Likewise students were dissatisfied with their possibilities

for social support. Seven out of ten expressed grievances with study social support. Students at Lund University expressed a low degree of cooperation and proficiency in oral presentations. Compared to the national result there was a large difference in this matter.

Students expressed the need for a high degree of discipline by the individual to conduct distance studies. Teachers' skills, availability, presence, ability to stimulate, facilitate and utilise the network's full potential, are listed as hallmarks of quality and degree of satisfaction in distance education and learning. It may further be noted that the course design and examinations, as well as transparency and flexibility in the course, are likewise particular satisfaction indicators.

The majority of the students indicated that they had never had the intention to complete the course. Other reasons of lacked completion of the course were directly related to the course itself, such as educational, technical or administrative dilemmas. To increase the possibility of terminating the course was specified as time aspects, educational support, motivation, course design and flexibility.

Many students at Lund University was quite pleased with the skills offered, i.e. how to make written presentations, yet the majority responded that they did not know / or that it was not relevant. However, the majority responded that oral presentations were not up to date or that they did not know whether they were satisfied or not. Nearly all were satisfied or fairly satisfied with the opportunities for proficiency training on problem solving. About half of the students were fairly satisfied with the opportunities to develop critical thinking, while half did not make any judgment or indicated that it was not relevant. Problem solving and critical thinking were also areas that stood out and were satisfactory in the national results of the SCB study. Those proficiencies were higher ranked for distance students compared to students on campus.

Some other comments concerned issues regarding flexibility, content, infrastructure and practical issues where the distance students had opinions and had both higher expectations and / or requirements for the same.

There were comments on the survey questions in relation to the degree of satisfaction. It was pointed out that there were no questions about what prevented / hampered opportunities to study at a distance, such as structure, overview, the ability to influence, availability, etc. As stated initially, there were no questions that automatically showed relationship between students satisfaction with the course and how they scored the degree of importance.

The results for Lund University did not differ significantly from the national results. In conclusion, regarding distance education regarding students' attitudes towards distance education at Lund University, the main results can be summarised as follows:

- The interest in the subject was the crucial motivation for choosing the distance learning course
- It suited the student’s life situation
- There was a high degree of satisfaction and effectiveness
- There was little cooperation and interaction on the course among fellow students on the course
- Proficiency training in critical thinking and problem solving were highly ranked
- Students expressed dissatisfaction on study social support and influence
- Motivation and creation of incentives to complete the course required
- Half of the students completed and finished the current course
- Most of the students never intended to pursue the course
- More flexibility, transparency and attendance of teachers was desirable
- Educational, technical and administrative development, innovation and skills are desirable

- The most common reasons for non-completion were focusing on work or other courses as well as the distance course
- There was relatively little difference between the faculties
- Low exploitation of learning centres

Discussion and reflections

It is often remarked that distance learning students do not complete their courses or take out their points or degree. This may have a natural explanation, as the incentive to study at a distance is usually based on personal interests and usually not motivated by a desire to gather academic credits or an academic career, as clearly illustrated in the present survey from Statistics Sweden (SCB). Instead it is debatable whether this type of training has a different value compared to that of on-campus undergraduate programmes and can be attributed to the university's responsibility for engaging with wider society and providing training in the form of education, non-formal education and lifelong learning. Conclusions from the Statistics Sweden study show that many students would never have studied at universities if they had not been able to study at a distance, i.e. moving to a new city to study on campus would have been impossible for many. Many of them would have instead turned to unskilled jobs (NAHE 2012, Sonnerby 2012).

Distance education efficiency and profitability and the question on the aim of distance education, raise a series of reflections that can be problematized. There are for example several actors and stakeholders of distance education, namely the individual, the university and the community. The National Agencies for Higher Education report (NAHE, 2010) on the reasons of university dropout, regardless of campus or distance learning, found that nearly half of the students stated that the main reason for study at a distance was the education itself. In addition to this, other reasons stated were social factors, for women to a greater extent than for men. Men mentioned on a larger scale work-related factors. Requiring students to earntake many points can probably be effective for the universities, but not always for the individual student as this is not the primary motivation for the individual. Different models, depending on the perspectives, to measure the efficiency must thus be developed according to Sönnerby (2012).

It is common for distance students to study on campus as well, and not infrequently on programmes for full-time education, which takes time. This is one reason why students do not complete distance courses, as the latter are often chosen more on the basis of personal interest and in addition to any study programme. To a large extent, the course study rate, path and mode also affect whether the students complete the course or not. Another reflection concerns whether more distance learning might be offered with the free cruise and free startup concept, ie. with a higher degree of flexibility in time, space, speed, content and materials, than is usually the case today.

The results indicate that it is most likely time to reconsider and to rethink the evaluation methods regarding attitudes, quality, objectives and effectiveness of distance learning. As previously mentioned, the target groups for campus and distance learning students are not the same, nor are the objectives, expectations and requirements. From previous studies, it is well known that distance differs from campus education in several respects, although the boundaries are increasingly blurred.

On the basis of the results, it can also be proposed that distance learning and campus-based education cannot be compared and evaluated using the same methods and indicators mentioned directly above, as also asserted by research on quality and e-learning in higher education (Baxter 2012, NAHE 2008, Ossiannilsson, 2012, Soinila, Ubachs 2008). These and several other studies have shown that e-learning-specific success factors must be considered and prioritised in a specific order

or incorporated into current quality assessments. Quality dimensions such as flexibility, accessibility, interactivity, personalisation, transparency, motivation, and course design, are usually crucial for individuals to pursue and succeed in their studies (Ossiannilsson 2012, Ubachs 2008). This was made clear even in this study based on how respondents assessed their attitudes and intentions towards distance education in Sweden.

It is questionable whether other issues might have been relevant to ask in relation to the study of attitudes and satisfaction in terms of distance education. Some respondents were critical about the nature of the questions in relation to the purposes of the survey. They also questioned why the study was conducted so long after graduation. Issues that were not covered in SCB's survey and issues that could have relevance for distance learning with an individualised approach could also be discussed. These issues raised by the respondents can be attributed to:

- Digitilisation potentials
- Flexibility
- Promotion / prohibitive areas
- Personalisation
- Course structure and design
- Motivation
- Availability

Some issues can be problematised by the study's results. Such strategic and visionary statements concern, among others, the role of higher education for training, education, skills, and demographic dimensions and approach to learning and education. The EU Commission initiatives and guidelines regarding new approaches to open education (EC, 2012; EU 11/20/2012) invite a series of reflections also valid for distance learning. In an open learning culture, with free access to courses and training, such as with OER (Open Educational Resources) and MOOC (Massive Open Online Courses), one should reflect on what it means for universities to provide and offer higher education for all and who is the distance student of today and tomorrow. With increased digitalisation and the Internet's potential, it also becomes increasingly difficult to distinguish between formal learning, non-formal learning and informal learning.

Educational, pedagogical, didactical and technical issues in relation to the results of the study of what enables or prevents the individuals studying at distance education can provide implications for development areas for supply and demand of courses offered, course-design and implementation of distance education.

The result shows that there is potential for a large development of distance education both for international and national students, and thereby to suit individual situations and opportunities better. This would further increase satisfaction and thus truly provide the conditions for completing the course. Such development concerns above all educational, technical and administrative conditions. Specifically, it is stated in terms such as flexibility, the opportunity to study on the basis of self-interest, individualisation, course design, interactivity, motivation, attendance of teachers and fellow students, independence, accessibility and transparency. The results show the need for methodological development of:

- Quality work; development, implementation, and evaluation
- Critical quality areas/indicators/processes for distance
- Pedagogy and didactics
- The use of digitalisation potentials
- Organisation and infrastructure

The Statistics Sweden's survey and its results provide incentives for quality and methods development of distance education and flexible open learning where the individual student is the focus of the opportunity for more flexible individualised learning. To meet these the results show that there are needs for methodological development concerning:

- Critical areas of distance education / distance learning (objectives, target groups, teaching methods / forms)
- Quality assurance / development / evaluation
- Organisation / infrastructure
- Education / Teaching
- Use of the full potential of digitilisation

The results from Statistics Sweden's survey are of interest, not at least in relation to the ongoing international educational movement for free and open educational culture. A range of subject areas has become visible, confirmed and clarified. The mapping results provide implications for how attractive learning environments can be promoted online. Promotion of students' opportunities for additional training and further studies should be offered.

Some quotes by the distance students from the survey will constitute the final reflection:

... Have studied half my degree at a distance and can heartily recommend it. Fits regardless of where you are geographically or in life, which ultimately may result in the potential to have a more educated population

Without distance education ... I had never been able to study at Univeristy

... For distance learning to be truly effective, the teacher gives enough time / has expertise in facilitating 'digital'

The Lund University Student Unions remarks conclude the study as follows:
"It is important that students are able to study with the flexible solutions offered through distance learning. Students who have children and cannot move, students who want to supplement with courses from another university or students who, because of work or living situation, do not have to be present on site during the day at their training have a great need for this flexibility and it is essential to the offer from universities. However, there are other problems that are indirectly related to distance education. One of the most prominent is that the current allocation systems are not adapted to this type of study. The current allocation system where funds are given, is not compatible with the "culture" that exists in distance education. Many students sign up for this type of course as part of continuing education when they are already active in professional life, out of pure interest, or as a course in addition to another major. Often, the motivation to complete the course is smaller or even absent because the students are already studying full time within another subject and is dependent on the requirements and time allocation of this course (cf. one third in the survey stated that they did not intend to complete the course). As the system stands now, and especially with the currently imposed reduction of the ceiling due to so-called "Null pointers", colleges and universities must, in practice, provide public education for which they do not receive funds. Although it is widely known that many distance students do not intend to take any credit so the money is distributed with parameters that take no account of this. As distance learning becomes more popular, this problem will increase and it is very important that the allocation system changes so that it takes account of this flexible learning solution that is extremely important to the work that can be conducted from a number of perspectives. The current system is based on the image of the classic student as a young person straight from high school who moves to a campus to learn, where the entire course of their higher education is in place. This system takes no account of the value of higher education, other

than the classic freshman. The concept of lifelong learning and further education for people who are already in employment is peculiar under-prioritised, as this benefit would not be useful.

For Student unions at Lund University, there is one more problem with distance education, namely our inability to represent these students. In the survey included in the study, it is clear that student social activities and influence are two major areas of concern. Universities must take the responsibility to create conditions for solving these problem areas " (Lund University Student Unions LUS 2012).

References

Baxter, J. (2012). Who am I and what keeps me going? Profiling the Distance Learning Student in Higher Education. IRRODL (13:4).

EC. (2012/11/20). Commission presents new Rethinking Education strategy. IP/12/1233. Retrieved 13/05/12 from http://europa.eu/rapid/press-release_IP-12-1233_en.htm.

NAHE (The National Agency for Higher Education). (2008). E-learning quality: Aspects and criteria. Report 2008:11: R. Solna: Högskoleverket.

NAHE (The National Agency for Higher Education). (2010). Causes to study interruptions (Orsaker till studieavbrott). Report 2010:23 R. Solna: Högskoleverket. (In Swedish).

NAHE (The National Agency for Higher Education). (2011). Mapping distance education at higher education institutions (Kartläggning av distance verksamheten vid Universitet och högskolor) 2011:2 R. Solna: Högskoleverket. (In Swedish).

NAHE (The National Agency for Higher Education). (2012) Högskoleverkets årsrapport 2012. Retreived 2013/05/12 from http://www.hsv.se/download/18.8b3a8c21372be32ace80003121/1210R-universitet-hogskolor-arsrapport.pdf.

Ossiannilsson, E.(2012). Benchmarking e-learning in higher education. Lessons learned from international projects. Doctoral Dissertation. Oulu Universitet, Finland.

SCB. (2012a). Theme: Education (Tema: Utbildning; Distansutbildning på högskolan). SCB. (In Swedish).

SCB. (2012b). Swedish Statistics student survey 2012 (SCBs Studentenkät. Publiceringar till 17 September, 52 article. Nyhetsklipp. Retriever). (In Swedish).

SCB. (2012c). Technical Report (Teknisk Rapport. En beskrivning av genomförande och metoder. Distansutbildning på högskolan- Lunds universitet). (In Swedish).

Soinila, M. & Stalter, M. (2010). Quality of e-learning. Helsinki, ENQA [The European Association for Quality Assurance in Higher Education].

Sonnerby, P. (2012). Learned for life (Lärda för livet? En ESO-rapport om effektivitet i svensk högskoleutbildning). (In Swedish).

Ubachs, G. (2009). Quality assessment for e-learning - a benchmarking approach. Heerlen: EADTU [The European Association of Distance Teaching Universities].

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Developing sustainable business models for institutions' provision of open educational resources: Learning from OpenLearn users' motivations and experiences.

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Abstract

Universities across the globe have, for some time, been exploring the possibilities for achieving public benefit and generating business and visibility through releasing and sharing open educational resources (OER). Many have written about the need to develop sustainable and profitable business models around the production and release of OER. Downes (2006), for example, has questioned the financial sustainability of OER production at scale. Many of the proposed business models focus on OER's value in generating revenue and detractors of OER have questioned whether they are in competition with formal education.

This paper reports on a study intended to broaden the conversation about OER business models to consider the motivations and experiences of OER users as the basis for making a better informed decision about whether OER and formal learning are competitive or complementary with each other. The study focused on OpenLearn - the Open University's (OU) web-based platform for OER, which hosts hundreds of online courses and videos and is accessed by over 3,000,000 users a year. A large-scale survey and follow-up interviews with OpenLearn users worldwide revealed that university-provided OER can offer learners a bridge to formal education, allowing them to try out a subject before registering on a formal course and to build confidence in their abilities as learners. In addition, it was found that using OER during formal paid-for study can improve learners' performance and self-reliance, leading to increased retention and satisfaction with the learning experience.

Keywords

Open educational resources, OER, business models, sustainability, widening participation, OpenLearn

1 Introduction

Sir John Daniel (2012), discussing MOOCs, observes that 'universities with scarcity at the heart of their business models are embracing openness', alluding to the likelihood that institutions might be prompted to look beyond the 'altruistic' (OECD, 2007) motivation for developing and sharing open content and to consider whether openness can help them to better cope with tough financial times. Several commentators have noted, however, that relying on external funding for such initiatives has become more difficult in recent years. For example, de Langen (2013) observes that 'due to the credit- and euro-crisis, but also as result of a change in (political) orientation, we see a withdrawal of funds away from OER, towards other goals'. In this context, it becomes yet more important to develop sustainable OER business models, allowing openness to be self-sufficient - an objective that it is tempting to see as inherently problematic. Indeed, Daniel (2012) suggests that 'the basic paradox is between the laudable desire, in the spirit of the open educational resources (OER) movement (UNESCO, 2012) to make knowledge the common property of humankind, and to find a business model that generates money for doing it'. For some years writers on open education have been discussing the need to develop sustainable and profitable business models around the production and release of OER (e.g. Bitter-Rijpkema & De Langen, 2012; Guthrie et.al, 2008; Lane, 2008; de Langen, 2008; Downes, 2006; Dholakia et al, 2006; Koohang et al., 2007; OECD 2007). Wiley (2010) gives a helpful overview of some of the literature in this area. Despite this flurry of discussion over the past few years in 2010, Helsdingen *et al* (2010, p. 2), drawing on Stacey (2007) and Smith (2009), suggested that 'sustainable OER business models have yet to take shape' and more recent evidence (e.g. de Langen, 2013) suggests that little has changed and sustainability is still very much a focus of attention for the OER movement.

Debates around OER business models have long been informed by the 2007 Organisation for Economic Co-operation and Development (OECD) report taking stock of the impact of the OER movement on higher education and exploring how sustainable cost/benefit models for OER initiatives might be developed in the future. The report (OECD, 2007, pp. 64-65) identified six possible arguments for why institutions might develop and share OER - given labels for the purposes of this paper:

1) The **altruism** argument: that 'sharing knowledge is a good thing to do' (OECD, 2007, p. 64);

2) The **leveraging taxpayers' money** argument: that resources developed by publicly funded institutions should be freely shared and reused;

3) The **efficiency** argument: that 'by sharing and reusing, the costs for content development can be cut, thereby making better use of available resources' (OECD, 2007, p. 64);

4) The **showcase** argument: that OER initiatives are 'good for public relations and...can function as a showcase to attract new students' (OECD, 2007, p. 64);

5) The **taster** argument: that 'new students...may be more likely to enrol – and therefore pay for tutoring and accreditation – when they have had a taste of the learning on offer through open content' (OECD, 2007, p. 65);

6) The **internal development argument:** that 'open sharing will speed up the development of new learning resources, stimulate internal improvement, innovation and reuse' (OECD, 2007, p. 65).

Stacey (2012) has taken an even broader view of OER sustainability and the impact of OER projects on educational institutions, proposing that:

The business case for OER includes both cost savings and revenue generation. Making something open is not always a means of direct revenue generation. It often is indirect – because something is open it leads to a revenue opportunity that wouldn't have existed otherwise. Using OER as a means to market reputation and institutional prowess can convince students to enroll. While better quality learning resources may not directly generate revenue they can lead to faster learning, greater learner success, or reduce drop outs.

Stacey identifies 10 benefits to educational institutions of OER initiatives, suggesting that they:

- increase access to education
- provide students with an opportunity to assess and plan their education choices
- showcase an institution's intellectual outputs, promote its profile, and attract students
- convert students exploring options into fee paying enrolments
- accelerate learning by providing educational resources for just-in-time, direct, informal use by both students and self-directed learners
- add value to knowledge production
- reduce faculty preparation time
- generate cost savings – (this case has been particularly substantiated for open textbooks)
- enhance quality
- generate innovation through collaboration.

Stacey's list overlaps with the six OECD arguments in many respects but also takes a broader view of the potential impact of openness and OER on institutions, going some way to countering those detractors of OER who question whether they are in competition with formal education, in turn allowing for a deeper understanding of the complex dynamic between informal learning through OER and formal learning.

The relationship between OER and formal learning, and its significance for the sustainability of institutional OER projects, is the focus of this paper, which reports on research conducted by the UK Open University's (OU's) OER Research Hub (OERRH), in collaboration with the Open University's Open Media Unit (OMU), and intended to gather evidence around several of the points identified by Stacey (2012) above. The OERRH is exploring 11 key hypotheses (see http://oerresearchhub.org/collaborative-research/hypotheses/) through collaborative research across four educational sectors - school, college, higher education and informal learning. This paper covers research around the OERRH hypothesis 'open education acts as a bridge to formal education,

and is complementary, not competitive, with it' and takes as its focus the UK Open University's web-based platform for free educational resources - OpenLearn.

1.1 *About OpenLearn*

OpenLearn was launched in 2006. It hosts hundreds of online courses and videos, many of which are openly licensed. Since its launch OpenLearn has received 27 million unique visitors and has developed from being a platform that hosts units from decommissioned undergraduate and postgraduate courses to one which hosts course extracts and a range of other informal materials, including commissioned interactive games, videos, blogs and podcasts, all aimed at increasing interest in learning. Together the course extracts and the informal learning materials are visited by over 5 million people each year. For the period August 2012 to May 2013, the OU reports that over 10% of OpenLearn users clicked through to the 'Study at the OU' webpage to learn more about becoming an OU student (internal data).

The development of OpenLearn was initially funded by the Hewlett Foundation in 2006. With the end of the Hewlett grant, OpenLearn became a mainstream activity for the OU and now forms part of one of the University's strategic priorities – the Journey from Informal to Formal learning – as part of its commitment to widening participation. The University aims to draw 5% from each of its courses to be made available as open content in whole, meaningful units, some of which are embellished with interactive quizzes and additional audio visual content. Three years after the launch of OpenLearn McAndrew (2009) reported that the institutional impact of the platform included 3 million new users from 232 countries; 7700 sign-ups to fee-paying OU courses; 10 funded projects and 30 collaborations. The site also hosts bespoke content produced as a result of the OU's partnership with the BBC. This is the content that receives most of the traffic as people are directed there after BBC programmes.

2 Methods

The research reported here is still ongoing but thus far has comprised a large-scale online survey of OpenLearn users (n=1067) (see https://www.surveymonkey.com/s/5VDXRD9). The survey was delivered using the SurveyMonkey platform and comprised likert scale, multiple choice and open questions. It was promoted via web-links embedded within the areas of the OpenLearn site that host course content in order to increase the likelihood of reaching informal and formal learners using the site to study whole units or courses (rather than people dipping into the short videos and editorial content promoted on the OpenLearn home page). The data reported here were collected three months after the survey was launched; however the survey remains live.

The OpenLearn survey opens with a set of questions collecting demographic information about respondents. The data collected give an insight into the typical user base of OpenLearn. For example, the majority of survey respondents were aged between 25 and 64, with a 58%/41%/1% female/male/transgender gender distribution. 19% of respondents declared a disability. Table 1 gives a breakdown of respondents' highest educational qualifications and employment status, showing that many OpenLearn users completing the survey are well-educated, highly qualified people in full-time employment. Indeed, 15% of respondents indicated that they are practising

educators.

Table 1: Qualifications and employment status of OpenLearn survey respondents

Highest educational qualification	
School leaving qualification (16-18 years)	15%
Vocational qualification (i.e. practical, trade-based)	9%
College diploma or certificate	23%
Undergraduate/Bachelors University degree	26%
Postgraduate/Graduate School University degree	21%
No formal qualification	6%
Employment status	
Full-time employed/self-employed	41%
Part-time employed/self-employed	17%
Full-time voluntary work	1%
Part-time voluntary work	4%
Full-time student	8%
Part-time student	6%
Unwaged and seeking employment	8%
Unwaged with domestic responsibilities	7%
Disabled and not able to work	4%
Retired	14%

3 Findings and interpretation

When analysing the survey results the OECD (2007) list of institutional motivations for developing and sharing OER and Stacey's (2012) list of OER benefits were used as an initial reference point for exploring the relationship between the impact of OpenLearn resources on individual users of the platform and the benefits enjoyed by institutions providing such platforms. The survey results offer

evidence that university-provided OER can be complementary, rather than competitive, with formal education and can act as a bridge to formal education in several ways, some of which have been little explored in OER-related literature.

3.1 OpenLearn as 'taster'

The survey results indicate that people new to university level study are using OpenLearn resources to try out university-level content before registering for paid-for modules. Indeed, almost half of the survey respondents (42%) indicated that they had used OpenLearn in this way - exemplifying the OECD (2007) taster argument for institutions' participation in OER projects. One respondent explained:

I don't think I'd have taken the risk of signing up for a degree with the OU were it not for OpenLearn. I didn't think I'd be smart enough to study at university level. But when I tried some of the OpenLearn materials I got on OK and realised I would probably be able to cope with a degree. Now I'm in my second year.

The survey results also reveal that OpenLearn has a 'taster' function for existing students, offering further evidence that OpenLearn is complementary, rather than competitive with formal education. Respondents were asked whether they had used OpenLearn resources or other OER in connection with any formal studies. 16% had indicated their status as full-time or part-time students and 25% of these people indicated that they use OpenLearn in connection with their studies. Relevantly, 24% of the OER-using formal students indicated that they had studied their subject via OpenLearn before joining a paid-for course and 26% indicated that their use of OpenLearn had influenced their decision to register for their current course of study.

One respondent commented:

I've used OpenLearn to try things out before signing up for a module. Sometimes a resource is recommended as partial preparation for a course. Or it might contain chunks derived from course books. In both instances you have the ability to 'taste' areas of the modules before signing yourself up for something which may or may not be suited to you.

Several respondents made explicit reference to using OpenLearn material as a taster for formal study with the OU. One respondent revealed: 'I am already an OU student and I use OpenLearn to help me decide which module(s) to study next' while a further respondent stated that 'where available, I have studied units before signing up to the course', proposing that 'all OU modules should have content on OpenLearn'. Another respondent commented: 'I used OpenLearn to find out more about OU courses I'm interested in/to see whether I would enjoy studying the full course'.

3.2 OpenLearn as 'showcase'

The survey results also offer evidence of OpenLearn functioning as a showcase for The Open University. Indeed, 53% of OpenLearn users indicated that their selection of OER is influenced by 'the resource being created/uploaded by a reputable/trusted institution or person', suggesting that

the OU brand is influencing their decision to use OpenLearn. Further evidence of the 'showcase' function of OpenLearn can be seen in respondent comments referring to sharing their enthusiasm for the platform with friends and colleagues. For example: 'I recommended OpenLearn to colleague who was thinking of doing an OU course on retirement but didn't know much about it'; 'I have shared content with friends and family, some of whom went on to serious OU study'; 'It...is something I have recommended to others who are planning to study' and finally the comments of an OpenLearn user who was 'hoping to use and share some of the material in an U3A group, which I lead'.

However, the survey results also offer (perhaps unsurprising) evidence that OER have greater impact in influencing the future use of free and open learning materials than in influencing registration on paid-for formal courses. Over 85% of survey respondents indicated that they are more likely to take a free course/study further OER as a result of using OpenLearn while 48% of survey respondents using OpenLearn in connection with formal studies, and 35% of respondents who are not using OpenLearn in this way, indicated that they are more likely to take a paid-for course as a result of using OpenLearn. Indeed, only 12% of survey respondents indicated that they would be less likely to take a paid for course as a result of using OpenLearn. One OpenLearn user gave an indication of the reasons for this when stating that 'OpenLearn is great for filling in the gaps, for developing my weaker areas and for trying out future modules but it doesn't give you credits or a qualification (which is fair enough as it's free)'.

3.3 OpenLearn and 'accelerating learning'

Stacey (2012) suggests that OER can 'accelerate learning' and 'lead to faster learning, greater learner success, or reduce drop outs' - a broader view of the relationship between informal and formal learning than discussed thus far in this paper. In exploring this possibility, the OpenLearn survey asked OER-using formal students about their views on the impact of OER on their formal studies, in addition to asking educators[51] to speculate on the same topic. Table 2 compares formal students' and educators' views on the impact of OER on formal learning.

Table 2: OpenLearn-using formal students' and educators' perceptions of the impact of OER

Studying OER has led to my.../ Studying OER leads to students'...	**% of FORMAL STUDENTS agreeing with the statement**	**% of EDUCATORS agreeing with the statement**
...increased participation in class discussions	16%	57%
...increased interest in the subjects taught	53%	73%

51 15% of OpenLearn survey respondents are educators. 74% of these educators indicated that they are using OpenLearn for professional development and 35% that they use OpenLearn for teaching purposes.

...increased satisfaction with the learning experience	49%	63%
...grades improving	14%	46%
...gaining confidence	37%	53%
...increased independence and self-reliance	39%	66%
...increased engagement with lesson content	39%	57%
...increased experimentation with new ways of learning	42%	57%
...increased collaboration with peers	12%	46%
...increased enthusiasm for future study	55%	54%
...becoming interested in a wider range of subjects than before I/they used OER	58%	48%
...being more likely to complete my/their course of study	29%	28%

The survey results show that students believe OER positively affect their studies in several different ways, including developing their confidence, their interest in a wider range of subjects, their independence and self-reliance and their experimentation with new ways of learning. Indeed, 58% of formal students using OpenLearn, and 49% of OpenLearn users not using the resources in connection with formal study indicated that their motivation to use OpenLearn was to improve their study skills. Interestingly the surveyed OpenLearn-using educators were more positive than were students about the impact of OER across most of the questions asked, as shown in Table 2.

The impact of OER on the development of language skills was also explored through the survey and provided further evidence that open educational resources have the potential to accelerate learning and complement formal education. 24% of respondents indicated that they were non-native English speakers and, amongst this group of people, 52% of OER-using formal learners, and 43% of respondents not using OpenLearn in connection with formal study indicated that they were motivated to study OpenLearn resources to improve their non-native language skills.

3.4 Understanding barriers to using OER

The OERRH research as a whole is seeking to identify both the impact of and the barriers to using OER. Consequently, the OpenLearn survey featured a question asking respondents to identify the main challenges to using open educational resources. Table 3 compares the responses of OER-using

formal students and those of respondents not using OpenLearn in connection with formal study.

Table 3: Challenges faced by OER-using formal students and informal learners.

Challenges faced when using OER	**OER-using Formal students**	**Other respondents**
Overcoming technology problems when downloading resources	30%	28%
Knowing where to find resources	56%	60%
Finding suitable resources in my subject area	48%	45%
Finding resources of sufficiently high quality	37%	27%
Finding resources that are up-to-date	34%	23%
Finding resources that are relevant to my local context	23%	13%
Getting work colleagues/managers to accept the use of open educational resources	6%	4%
Not being skilled enough to edit resources to suit my own context	13%	13%
Not knowing whether I have permission to use, change or modify resources	16%	10%
Not having enough time to look for suitable resources	21%	22%
Not having connections with open educational resource-using peers who could be a source of support	17%	17%
Missing/needing the support of a tutor or teacher to help me work through open course materials	23%	23%

Discoverability and breadth of content stand out as the most common barriers to OER use amongst survey respondents. OER-using formal students' responses differ little from those of other

respondents across most questions, though inability to find high quality and up-to-date resources is identified as a barrier to OER use by more formal students than other OpenLearn users.

4 Implications and recommendations

Some of the findings arising from the OpenLearn study require little interpretation. For example, on the basis of the survey results it is fairly easy to see the 'showcase' (OECD, 2007) function for OpenLearn in action, the platform allowing the OU to demonstrate the quality of its materials to prospective fee-paying students who, in turn, may share with others their enthusiasm for the OpenLearn resources and for the OU more generally. The survey results also clearly indicate that OpenLearn is working as a bridge to formal learning, not only in giving new and existing students a 'taster' (OECD, 2007) of the OU's paid-for provision (and of university-level study in general), but also in contributing to the development of existing students' confidence and study skills. However, the relationship between the OU's OpenLearn and paid-for provision is multi-faceted and merits a little unpicking.

4.1 OER as taster at a time of tuition fee increases

While the taster function of OpenLearn is clear from the survey results it is possible that the value of this function to the Open University and to OpenLearn users is particularly heightened at a time when the price of university study, across all providers in England, has risen considerably.[52] In this context prospective undergraduate students, and indeed existing students choosing their next module, are more likely to be risk-averse. While the latter may not appear that significant in terms of generating income for the university it is possible that students who have studied OpenLearn resources prior to commencing a paid-for module will be more well-informed and better prepared for their paid-for study, and therefore less likely to withdraw from their module. It follows, then, that institutions who are able to offer extended taster experiences, for example studying a complete module unit in a pertinent subject and level, should see benefits both in terms of conversion from informal self-directed learning with OER to paid-for study, and in terms of the retention and improved study experiences of existing students.

4.2 OpenLearn as 'altruism'

The OpenLearn survey findings also indicate that the benefits of the platform extend beyond widening access to formal education and include widening access to high quality informal learning opportunities - a consideration that is particularly pertinent in the context of the current funding climate in England. While, in England, Government loans became available to part-time students for the first time from September 2012 the rise in tuition fees has still raised a barrier to learning for

52 In 2009 the Browne Review led to the existing tuition fees cap of £3290 per year being raised to an annual cap of £9000 per year for full-time study in England, with 94 English universities taking the opportunity to charge the full £9000 per year in 2013. The Open University pitched its full-time study fees at £5000 per year (http://www3.open.ac.uk/media/fullstory.aspx?id=21596), leaving the OU as one of the cheapest HE providers in England.

many potential students, adding to the appeal and value of free learning opportunities. Indeed, 80% of OpenLearn users indicated that 'the opportunity to study at no cost' was a motivation for using the platform and some survey respondents explicitly stated that they use OpenLearn because the cost of formal study is prohibitive. This function of OpenLearn is aligned with the Open University's social mission and evidences the OECD (2007) 'altruism' motivation for institutions' developing and sharing OER. Altruism was one of the original motivations for the Open University's launch of OpenLearn. Open Media Unit Director Andrew Law (2013, personal communication) comments that 'OpenLearn was always part of the OU's social mission. Providing free content helps to increase access to learning and may also lead learners around the world to take up paid-for learning opportunities other than those the OU provides'.

4.3 OER and retention of formal students

Student retention is a major challenge for universities around the world, the UK being no exception. The 2012 report on the 'What Works? Student Retention & Success' programme, initiated and funded by the Paul Hamlyn Foundation and HEFCE (Thomas, 2012, p. 4), points out that 'the high rates of withdrawal and low rates of satisfaction [at UK universities] may have reputational, economic, ethical and legal implications for universities and colleges, as well personal and financial disadvantages for individuals' adding that 'it is reasonable to argue that, given the student was admitted because the institution thought they had the potential to succeed, there is an obligation to take reasonable steps to enable them to be successful'. The report links retention with increased student fees, suggesting that higher tuition fees may lead to more students combining part- or full-time study with employment which, in turn, may have a detrimental impact on their retention and success. The OpenLearn survey findings indicate that the platform allows the Open University to provide additional support for its students, especially in terms of developing meta-level study skills[53] and in increasing students' independence, self-reliance and confidence, as discussed in Section 3.3. It is reasonable to assume that this, in turn, will help to improve student performance, satisfaction and, in turn, retention.

5 Recommendations - removing barriers to the use of OpenLearn

On the basis of the survey results it seems that OpenLearn is already making a positive impact on its users and the host institution but that there is room for improvement in fully realising the potential of the platform. Such improvement could usefully focus on targeting groups of people who are not well-represented as OpenLearn users in order to widen participation, for example by:

(i) Increasing awareness of the platform and the discoverability of the OpenLearn resources, especially for people outside higher education;

(ii) Broadening the range of content released as OER;

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53 Relevantly, Coughlan and Perryman (2011, p. 22) found that 20% of the OpenLearn provision in 2011 comprised study skills materials.

(iii) Making the content more engaging for learners.

5.1 Improving awareness and discoverability

Vladoiu (2013) observes that while, over the past 10 years, OER initiatives have resulted in 'a huge number of online instructional resources and repositories available freely', this 'comes with a constant challenge, i. e. locating and retrieving the educational resources that are the most relevant for a specific user's need, in a particular context, and that have the best quality'. Accordingly, the 2012 Paris Open Educational Resources Declaration recommended that future support is needed for 'facilitating finding, retrieving and sharing of OERs' and 'for fostering awareness and use'. The OpenLearn survey results confirm that discoverability is a barrier to OER use, as discussed in Section 3.4 and indicated in the fact that the demographics of the survey respondents suggest that OpenLearn users are often well-educated, highly qualified and employed, in common with the users of other OER repositories (Lane, 2012) and the users of MOOCs (Freitas, 2013). Clearly, while OpenLearn is meeting the needs of some of its target users, especially users with disabilities (19% of survey respondents), there is some room for improvement in terms of maximising the platform's potential to widen access to learning.

At the time of OpenLearn's launch, McAndrew (2006) suggested that the platform could be a route for outreach beyond the existing student body and Stacey (2012) has subsequently suggested that 'by their very nature OER can lead to new ways of education through more cooperation, collaboration, and partnerships between institutions'. This collaborative approach could work well in broadening the reach of OpenLearn, for example if the platform was promoted directly to charities, the careers advisory service, unions and adult learning providers such as the Workers Educational Association (WEA). Coughlan and Perryman (2012; 2013) offer a model for taking open content to the people who could most benefit from it when discussing ways in which open academics might share OER with online communities connected with health and wellbeing charities. OpenLearn content is automatically fed to the Open Courseware Consortium site and is manually fed to several other repositories. However, discoverability could also be enhanced by promoting the platform through links on additional websites external to the Open University, including sharing OpenLearn content via OER collections such as Merlot (www.merlot.org).

5.2 Broadening the range of OpenLearn content

A study of OpenLearn by Coughlan and Perryman (2011) found that academic disciplines are not equally represented across the OpenLearn OER, suggesting that this may be limiting the potential of the platform to widen participation in education. Indeed, the OpenLearn survey respondents indicated that existing users would welcome a broader spread of subjects to be covered in OpenLearn, as discussed in Section 3.4. It is possible, then, that OpenLearn would benefit from the addition of content in subject areas that are less well provided for by the platform and at levels that would be attractive to users not already in the formal higher education system.

5.3 Making the OpenLearn content more engaging

The survey results have indicated that many OpenLearn users find the learning materials that they

study via the platform to be stimulating and engaging. However, in a climate where MOOCs, the growing interest in soft assessment and badging (see Grant & Shawgo, 2013) and the interplay between social media and informal learning are driving innovation it is important that the Open University ensures that its OpenLearn content draws on innovative pedagogies that are being researched in its own institution (see Sharples *et al,* 2013; 2012). Examples could include the use of badges to reward study of the OpenLearn resources and integration with social media (e.g. Twitter and Facebook) that would, in turn, allow for easier sharing of the OpenLearn materials with others. It is possible, too, that any materials made specifically for informal learners could be used to try new pedagogical approaches and technical innovations and that these materials could then be used in paid-for modules, thereby reducing module production costs by sharing them with public engagement via OpenLearn (a version of the OECD (2007) 'internal development' argument).

5.4 Funding the recommended initiatives

A challenge would be how to fund these initiatives. OpenLearn is seen as providing clear and important business benefits to The OU (with broad reach, high numbers of brand views and other tangible benefits such as the income generated from registrations directly originated by it). It provides all of its content free of charge to users. As previously discussed, the no-cost (to the user) nature of OpenLearn emerged as the main attraction for users of the platform who completed the survey. However, several survey respondents expressed a willingness to pay for OpenLearn content, despite not being asked for their views on paying for provision. These are representative comments:

I like to learn new things and with OpenLearn I can do this at home in my own time. It's great that it's free. I would be prepared to pay something to help keep these resources available for people for whom this may be their only access to higher education.

I am moving from full time employment to part-time retirement (67yo) and part-time study. I like the idea of starting from Tudor period, getting a good understanding of the era, then moving forward ending in WW2. Full Open Uni fees are too daunting, great that the Free scheme is available, though I wouldn't mind paying something towards it.

I would be happy to pay for a hybrid relationship, between the Free Open Learn and the full OU course, that would include say, a day every two to three months in a lecture room environment (to provide cohesion/shared experience opportunity.

The latter comment introduces a possibility for funding additional development of OpenLearn - the provision of additional paid-for, add-on services such as tutor support. Indeed, 26% of survey respondents indicated that they missed the support of a tutor when studying OpenLearn units. However, while this option may be worth investigating it is possible that, without further innovation in crowd support, it might cost more than users would be willing to pay and is unlikely to generate revenue that can be used for further development and promotion of OpenLearn and its content.

A further funding possibility could involve a 'freemium' model where by users of a service get much of that service at no cost (i.e. all of the existing provision) and pay only for any new enhanced provision. Stacey (2012), discussing OER business models, draws parallels with the business models used for some open source software, for example WordPress. He points out that:

Anyone can create a blog for free at WordPress.com. You get a whole array of free functionality – customizable design themes, ability to write posts, upload and embed photos and videos, stats dashboard, privacy options, complete hosting, … This free functionality is sufficient to get you going and may be all that you need. But for those who want more control you can subscribe to premium features...The business model is very clear – basic for free, premium for a fee.

A possible business model for OpenLearn could be to offer a low charge subscription service (e.g. under £50 per year) giving enhanced provision (more content, personal feedback, statements of activities etc.) for those users willing and able to pay for this. The revenue generated could then be used to fund activities intended to increase awareness and discoverability of OpenLearn in addition to funding increased content provision. While this could be perceived, initially, as unpalatable and counter to the 'spirit of open' (Perryman, 2012), were the Open University to make an explicit commitment to using the subscription-generated revenue solely to fund improvements to the open aspects of OpenLearn, it is possible that negative perceptions of the model could be countered.

6 Conclusion

The OpenLearn survey results have allowed for a greater understanding of the dynamic between the platform and the Open University's paid-for module provision. It is clear that OpenLearn is providing a bridge to formal learning in several respects:

- In leading informal learners to formal study with the OU and with other providers;
- In working as a showcase for the OU and increasing awareness of the learning opportunities and quality of provision offered by the university;
- In providing 'taster' materials that inform the paid-for module choice process;
- In allowing learners to test out university-level study prior to registering on a paid-for module;
- In broadening the range of subjects about which informal and formal learners are interested;
- In increasing users' study skills and confidence (thereby helping to increase existing OU students' performance and retention and potential students' readiness for study);
- In improving non-native English speaking students' language skills (and thereby helping with study preparation and retention).

The survey results also offer some evidence that OpenLearn is contributing to widening participation in learning and helping to achieve the OU's social mission but it is clear that there is room for improvement in terms of raising awareness of OpenLearn amongst a wider range of people than currently typify its user base, thereby enhancing the platform's potential as a bridge to formal learning. The Open University is seeking to take a research-informed view on improvements to OpenLearn. For example, the JISC-funded Track OER project (http://track.olnet.org/) is being

implemented into OpenLearn over the next 6 months allowing the University to see how widely the content is being used, for example when it is cut and pasted onto other peoples servers, and to gain a fuller understanding of re-use beyond personal development and use in the classroom.

The recommendations made in this paper regarding the ways in which awareness of OpenLearn and OER might be raised, and about the need to broaden the range of content offered through OpenLearn, have relevance outside the OU, especially for institutions that are seeking to increase access to their OER and MOOC provision beyond a well-educated elite. It is hoped that exploring the relationship between openness and universities' core business through the lens of the OU's OpenLearn platform will prompt new conversations about the sustainability of institutional OER projects, contributing to the OER and open education movements' work in this area and allowing others to learn from the OU experience.

References

Bitter-Rijpkema, M. E., and De Langen, F. (2012). Positioning the OER business model of open education. *European Journal of Open and Distance Learning (EURODL)*. Available from http://www.eurodl.org/?article=483. [Accessed 30 August 2013]

Coughlan, T., and Perryman, L. (2012). Reaching out with OER: the new role of public-facing open scholar. *eLearning Papers*, 31. Available from http://oro.open.ac.uk/35934/. [Accessed 31 August 2013]

Coughlan, T., and Perryman, L. (2011). Something for everyone? The different approaches of academic disciplines to Open Educational Resources and the effect on widening participation. *Journal of Open, Flexible and Distance Learning*, **15**(2) pp. 11–27. Available from http://oro.open.ac.uk/31071/. [Accessed 4 August 2013]

Daniel, J. (2012) 'Making Sense of MOOCs: Musings in a Maze of Myth, Paradox and Possibility'. *Journal of Interactive Media in Education,* Perspective issue on MOOCS. Available from http://jime.open.ac.uk/article/2012-18/html. [Accessed 1 July 2012.]

Dholakia, U. M., King, W.J., & Baraniuk, R. (2006). *What makes an open education program sustainable? The Case of Connexions.* Available from http://www.oecd.org/dataoecd/3/6/36781781.pdf. [Accessed 10 August 2013]

Downes, S. (2006) Models for Sustainable Open Educational Resources. *Interdisciplinary Journal of Knowledge and Learning Objects* 3, 29-44. Available from http://ijklo.org/Volume3/IJKLOv3p029-044Downes.pdf. [Accessed 5 August 2013]

Freitas, S. de, (2013) *MOOCs: The Final Frontier for Higher Education,* Available from http://benhur.teluq.uquebec.ca/ted/Ressources/mooc.pdf. [Accessed 8 September 2013]

Grant, S. and Shawgo, K.E., (2013) *Digital Badges: An Annotated Research Bibliography v1.* Available from http://www.hastac.org/digital-badges-bibliography. [Accessed 1 September 2013]

Guthrie, K., Griffiths, R., and Maron, N. (2008). *Sustainability and revenue models for online academic*

resources (An Ithaka Report). Available from http://sca.jiscinvolve.org/2008/06/03/download-final-ithaka-report-on-sustainability/. [Accessed 1 August 2013]

Helsdingen, A., Jansen, B., Schuwer, R. (2010) *Business Models in OER, a Contingency Approach.* Paper presented at Open Ed Conference, Barcelona, Spain. Available from http://openaccess.uoc.edu/webapps/o2/bitstream/10609/5039/6/Helsdingen_editat.pdf. [Accessed 8 August 2013]

Koohang, A., and Harman, K. (2007). Advancing sustainability of open educational resources. *Issues in Informing Science and Information Technology, 4*, 535–544.

Lane, A., (2013). How OER Support Lifelong Learning. *In* McGreal, R., Kinuthia W., & Marshall S. (eds) *Perspectives on open and distance learning: Open Educational Resources: Innovation, research and practice,* Commonwealth of Learning, Athabasca University. Available from https://oerknowledgecloud.org/sites/oerknowledgecloud.org/files/pub_PS_OER-IRP_CH10.pdf. [Accessed 1 July 2013]

Lane, A. (2012) Widening participation in higher education through Open Educational Resources, in Okada, A., Connolly, T., and Scott, P. J. (eds). *Collaborative Learning 2.0: Open Educational Resources.* IGI Global, pp. 1–15. Available from http://oro.open.ac.uk/32946/1/. [Accessed 20 August 2013]

Lane, A., (2008). Reflections on sustaining open educational resources: An institutional case study.*eLearning Papers, 10*, September. Available from http://www.elearningeuropa.info/out/?doc_id=15736&rsr_id=16677. [Accessed 5 August 2013.]

Langen, F.H.T. de (2008). Business cases in an electronic environment: Lessons for e-education? *Working Papers on Management*, GE 08-01, Open University, March.

Langen, F.H.T. de, (2013) Strategies for Sustainable Business Models for Open Educational Resources. *The International Review of Research in Open and Distance Learning (IRRODL).* **14**(2). Available from http://www.irrodl.org/index.php/irrodl/article/view/1533/2485. [Accessed 14 August 2013]

McAndrew, P. (2006) Motivations for OpenLearn: The Open University's open content initiative. Paper presented at the *OECD experts meeting on Open Educational Resources*. October 26-27, Barcelona. Available from http://kn.open.ac.uk/public/document.cfm?docid=8816. [Accessed 4 September 2013]

McAndrew, P. (2009) *Learning from OpenLearn.* Available from http://www.slideshare.net/olnetchannel/learning-from-openlearn. [Accessed 30 August 2013]

OECD (2007) *Giving Knowledge for Free: the emergence of open educational resources.* OECD/CERI. Available from http://www.oecd.org/edu/ceri/38654317.pdf. [Accessed 4 August 2013]

Perryman, L. (2013) Is there a "spirit of open"? *The Art of OER Research*, [blog] January 6 2013. Available from http://artofoer.wordpress.com/2013/01/06/is-there-a-spirit-of-open/. [Accessed 4 August 2013]

Sharples, M., McAndrew, P., Weller, M., Ferguson, R., FitzGerald, E., Hirst, T., Gaved, M. (2013)

Innovating Pedagogy 2013. Available from http://www.open.ac.uk/personalpages/mike.sharples/Reports/Innovating_Pedagogy_report_2013.pdf. [Accessed 11 September 2013]

Smith, M. S. (2009). Opening Education, *Science*, 323: 89 – 93 DOI: 10.1126/science.1168018

Stacey, P. (2012) The economics of open. *Ed Tech Frontier,* [blog] March 4 2012. Available from http://edtechfrontier.com/. [Accessed 9 August 2013.]

Stacey, P. (2007). Open educational resources in a global context. *First Monday,* **12**(4). Available from http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/1769/1649. [Accessed 31 August 2013]

Thomas, L. (2012) *Building student engagement and belonging in Higher Education at a time of change: a summary of findings and recommendations from the What Works? Student Retention & Success programme.* Available from http://www.heacademy.ac.uk/assets/documents/what-works-student-retention/What_works_summary_report.pdf. [Accessed 9 August 2013]

UNESCO, (2012) *Paris OER Declaration*. Available from http://www.unesco.org/pv_obj_cache/pv_obj_id_E. [Accessed 20 August 2013]

Vladoiu, M. (2013) Towards Increased Discoverability of Open Educational Resources and Open Courseware. *International Journal of Computer Trends and Technology (IJCTT).* **4**(8): 2912-2916. Available from http://www.ijcttjournal.org/volume-4/issue-8/IJCTT-V4I8P195.pdf. [Accessed 4 September 2013]

Wiley, D. (2010). Research on OER Sustainability and Impact. *Iterating toward openness,* [blog] 19 August 2010. Available from http://opencontent.org/blog/archives/1596. [Accessed 30 August 2013]

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ERASMUS language preparation with DUO online courses

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Abstract

Online components have become an integral part of many university courses. Despite their high potential, however, online learning platforms and web tools are often not applied to their full extent. This is especially true for online language courses designed to enhance mobility in Europe.
For twelve years now, *Deutsch-Uni Online* (*DUO*) has been developing and organizing online courses in several languages; *DUO* courses can be taken as self-study courses, as courses with intensive support by a tutor, or as blended learning courses.

Since 2009 the *DAAD* (German Academic Exchange Service) and *DUO* have been working hand in hand to prepare ERASMUS incomings for their studies at German universities. This cooperation has been highly successful in producing best-practice examples on how virtual and physical mobility can be combined in meaningful ways. Due to the flexibility and intensive support by tutors large, heterogeneous groups can also be accommodated. As a result, a variety of goals central to university education can be addressed by using online programmes: language skills can be improved effectively before the actual exchange begins thus facilitating the students' integration into the academic community in their host country. Furthermore, the intensified preparation is set to increase significantly the academic quality of the ERASMUS exchange. This goal is in accordance with the stated aim of the new EU programme generation.

The proposed paper will present the *DAAD-DUO* concept for online language preparation, point out the crucial factors of its success, and provide ideas, examples and illustrations for similar programmes in other European countries.

Keywords: online language course, ERASMUS, mobility, virtual mobility, exchange

Today, using various media to obtain information, to be entertained or to communicate is second nature to most European students: They are woken by the radio app on their smartphone, check the news on their tablet over morning coffee, stream their favourite tunes on the way to university, take lecture notes on their netbooks, and constantly stay in touch with their friends via social media – to name only a few of their activities. It is surprising, then, that universities and educational institutions are not jumping at this chance to cater to their media-affine students. The institution's portfolios could vastly benefit from e-learning courses and thereby increase their attraction and market value (Handke and Schäfer, 2012).

The said restrictions develop their most devastating effects in Arts faculties, especially in the field of language learning and teaching. Despite a long tradition of media use, language learning and teaching remains a field dominated by a lot of scepticism (Roche, 2011). Handke and Schäfer (2012), for example, have gathered much evidence on the implementation of online learning environments

at the English Department of the University of Marburg, Germany. The prejudices towards e-learning they have encountered include the following:

- High quality e-learning is expensive and cannot be financed with the tight budget of a state university.
- Complementing traditional in-class seminars and lectures with e-learning components requires enormous time and effort.
- The acceptance of e-learning seminars and lectures is limited among students. Arnold et al. (2011) add that this is not only true for students but also for teaching and administrative staff.
- Students have difficulties with autonomous self-study courses.
- Learning in front of a computer is uncommunicative and dull.
- Students feel lonely and left alone without in-class seminars and lectures.

Roche (2008a) focusing on online foreign language learning complements Handke and Schäfer's list of prejudices against e-learning by adding an insecurity argument: many (older) teachers feel insecure when it comes to media use because of their (perceived) lack of media competency and their fear to lose authority in class. Some even see their employment endangered if they fail to integrate media in their teaching. Furthermore, many teachers are not convinced that the added value of e-learning has been sufficiently proven and they hardly know where to turn when looking for such evidence. Finally, many institutions are poorly equipped in terms of technology and technical support, which chokes off all eagerness to experiment with-learning or blended learning formats.

With such an amount of inhibitions and prejudices, why even bother offering online courses for foreign language learning?

Learning a language online – Why?

Despite the tenacious prejudices mentioned above, learning a language online has its merits. E-learning language courses are a valuable addition – and can even be an alternative – to traditional in-class teaching for the following reasons.

1. *Flexibility*
   Online language courses are flexible in terms of time management. It is up to the individual whether they want to study in the morning, over lunch break or during the night. Depending on the course format there can still be some set dates, such as in-class sessions in blended learning or discussions via chat. However, these set dates are usually negotiable among the virtual class members so that learners and teachers can make sure these sessions fit their schedules. This flexibility allows for online classes to be very heterogeneous and intercultural. The only set prerequisite for students from different cultures to study together in one online class is that they live in roughly compatible time zones (Arnold et al., 2011; Roche, 2011; Handke and Schäfer 2012).

2. *Accessibility*
   With an online language course there is no need for a classroom. Big universities chronically suffer from lack of classrooms with the effect that a vast administrative apparatus is often required to manage the shortage of classroom space. Online language courses, in contrast, can be accessed from basically anywhere in the world. All the learner needs is a computer compatible with the language learning programme they are using and a reliable internet connection (Arnold et al., 2011; Roche, 2011; Handke and Schäfer, 2012).

3. *Bridging the distance*
   Online learning platforms offer the technology to include authentic materials in the courses and update them quickly and easily whenever necessary. This brings the target language and culture to learners located all over the world – which is the next best thing to learning a language in a country where it is actually spoken (Roche, 2011; Handke and Schäfer, 2012).

4. *Diversity in learning and teaching*
   Online language courses allow different approaches for individual learners. Instead of the whole class learning the exact same thing at the exact same time online language courses put the learners in charge of their own learning. According to their personal preferences, strengths and interests, the learners can choose between different learning plans and deal with the course load in a tailor-made way. The learners become more autonomous and feel more responsible for their own learning, which boosts their motivation (Arnold et al., 2011; Katzlinger, 2011; Roche, 2011; Handke and Schäfer, 2012).

5. *Openness of structure and contents*
   Online language learning environments can integrate multiple media, like videos, audios, wikis, chats, forums, interactive applications, games, etc. These media can then be paired with a variety of tasks and exercises, many of which are open to include material the learner encounters outside the e-learning course. Additional resources and learning tools –like dictionaries, thesauri, grammar tools, and auto-correctors for written or spoken language – help the learner to deal with authentic material in the open learning environment (Arnold et al., 2011; Roche, 2011; Handke and Schäfer, 2012)[54].

6. *Easy administration*
   Another merit of online learning environments are the administration tools they offer: Classes can be managed right there on the platform, individual learning plans can be assigned with just one click, and data documenting the learner's progress is gathered and stored electronically. Thanks to these features tutors and teachers gain valuable time which they can then dedicate to assisting their students and to communicate with them (Roche, 2011).

7. *Cost and resource efficiency*
   It is true that a lot of time, energy and money go into implementing e-learning in an institution. However, once an e-learning course is created and established it takes the teacher little effort to tutor the course. Administration is facilitated by online managing tools and the running costs of the online courses are minimal in contrast to in-class courses (Roche, 2011; Handke and Schäfer, 2012).

8. *Language learning research*
   An online learning programme can be both a learning and a research tool. Especially elaborated tools able to gather learner data automatically can supply vital information on how learners tick. Learner data gives an insight into the way learners approach tasks as well as which tasks work well and which don't.[55] Important implications for the improvement of the learning platform can be deduced from this data. Furthermore, the analysis of the learner data would allow researchers to test hypotheses on language processing and development.

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54 The demo version the *Deutsch-Uni Online* courses shows an example of what a semi-open language learning environment can look like: www.uni-deutsch.de.

55 In order to use learner data for research the learner's consent would of course have to be obtained.

Online learning programmes that address international learners could also account for intercultural differences in media use (Roche, 2011).

9. *Media competency*
   Most curricula today name media literacy and competency as an essential feature in every student's education. Recent language learning theories claim that languages are best learned if encountered in authentic, communicative situations. Open online learning programmes provide such an environment. In online language courses learners can practice their language skills in relevant contexts, have meaningful conversations and play-act in preparation for their linguistic actions offline. This proves language learning and teaching to be the perfect field for the inclusion of digital media. A positive side effect of the advent of e-learning in language learning institution would be that teachers and administrators also improve their media competency (Roche, 2011).

The above mentioned aspects illustrate that online language learning is not only possible but also has some clear advantages over studying a language in class. The question arising from such aspects, then, is how to best learn a language online?

Learning a language online – How?

A good online language course cannot be created with a few clicks and the mere conversion of textbook material into online tasks and exercises. It takes media educators, language acquisition experts, and computer scientists working hand in hand to ensure that the end product, an online language learning platform, satisfies the needs of everyone involved – learners, tutors, and administrators. Using *uni-deutsch.de*, the online learning platform of *Deutsch-Uni Online*, as an example, the following paragraphs will briefly present the most important features of advanced online language learning and teaching.

DUO was developed at the multimedia research and development centre of *Ludwig Maximilians University* at Munich and is offered by the Gesellschaft für Akademische Studienvorbereitung und Testentwicklung e. V. (g.a.s.t.)[56] in cooperation with the *Ludwig Maximilians University Munich*. *DUO* develops academic language learning programmes and organises and runs language courses. The *DUO* staff researches and teaches in the field of multimedia learning of foreign languages.
Drawing on his experience as Academic Director of *Deutsch-Uni Online*, Roche (2008) lists the following essential features for online language learning platform:

- A variety of tasks for different learner types needs to be offered.
- Open knowledge systems should be connected to the platform.
- Online research and editing tools should be offered (e.g. dictionaries or search engines).
- Animated content, like grammar animations, should be included.
- Tasks need to be carefully designed and coordinated in terms of textual, visual and audio information to prevent sensory overload.
- The possibility to combine different approaches and learning paths should be given.
- Auto-correction tools, individual feedback by a tutor and an archive for the student's work should be integrated.

56 g.a.s.t. is a registered association and combines academic study preparation and language testing projects. Members of g.a.s.t. are Deutscher Akademischer Austauschdienst e. V. Bonn, Hochschulrektorenkonferenz Bonn, Goethe-Institut e. V. München, Ruhr-Universität Bochum, FernUniversität in Hagen, Universität Leipzig, Ludwig-Maximilians-Universität München, and Fachverband Deutsch als Fremdsprache e. V..

- Interactive communication tools should be offered (e.g. wikis).

Given an online language learning platform designed according to the above mentioned criteria, there are four key features of successful e-learning:

- A placement test should be taken before the course starts to determine the individual level of proficiency of each learner.
- Flexible approaches to the course work should be offered to enable the learner (assisted by a tutor) to find their personal approach to the course.
- Support by a tutor should be provided to ensure that the learner does not get lost in the vast open learning environment and stays focused and motivated throughout the duration of the course.
- A good mix of synchronic and asychronic, verbal, written, and audiovisual forms of communication should be provided. These communication tools can create a constant flow of information and can help form social bonds in the virtual class (Roche, 2008).

Placement test

A placement test has various functions in language learning and teaching. First of all, it gives the course administrators the chance to place each student in a suitable course. Furthermore, a placement test in combination with a final test gives some indication of the progress the learner has made during the course. Placement tests play an especially important role in higher education and student mobility where the level of proficiency in the language of instruction is often a decisive factor in the admission to a study programme.

Flexible ways of learning

Open or semi-open[57] language learning environments are characterized by the numerous possibilities to approach the course and materials it is comprised of. Learning plans offer a general guideline to the course load and can be modified according to the class's or individual learner's needs. Chat dates or deadlines for homework, for instance, are negotiated between the class and their tutor. Online language courses give the learners a lot of flexibility. Also, they have a say in what their course will be like (Roche, 2011).

Tutoring

An important factor for successful online language learning is tutoring. Tutored courses with individual feedback not only improve the learning outcome but also lead to higher motivation in learning and a stronger commitment to the course (Arnold et al., 2011; Nalezinski and Raaf, 2007). Many learners feel more at ease with e-learning when they are assisted by a tutor. This is especially true for first-time e-learners who are still struggling with the freedom open learning environments give them and the consequent responsibility to organize their own learning (Arnold et al., 2011).

Instead of being the medium through which learning takes place an online tutor assists the students in their autonomous learning process (Arnold et al., 2011). In addition to this basic and vital function

57 *DUO* is a semi-open learning environment, offering a mix of tasks and exercises on the *uni-deutsch.de* e-learning platform but also tasks which take the learner beyond the boundaries of carefully designed set of materials Instead of regarding the learners' excursions into the World Wide Web as a threat to the achievement of curriculum goals, *DUO* uses the input learners bring back as the basis for group discussions or individual free expression.

an online tutor also is an expert in the field of study as well as experienced and knowledgeable regarding the technical aspects of online learning. Tutors guide and monitor the students' learning and motivate and encourage them where necessary (Katzlinger, 2011; Roche, 2008, 2011). At *DUO*, for example, each tutor attends a two-day seminar[58] to prepare them carefully and effectively for their job. Afterwards, *DUO* tutors do an internship during which they shadow an experienced tutor and are in close contact with the *DUO* support staff. It is only after this extensive training that *DUO* tutors are put in charge of their first own class.

For optimal support in online learning environments, tutors with competencies in the field of study as well as a general help desk are needed. This ensures that the learners get both individual support regarding their learning process and quick and easy help when technical or general questions arise (Katzlinger, 2011).

Communication

Multiple and diverse communication tools play a prominent role in online languages courses. Most online communication tools make it hard to detect the tone or mood a statement carries. “Was this a rhetoric question?”, “Is he joking?”, “Is it just me or is she annoyed?” are questions learners ask themselves when conversing in a foreign language. An effective and easy way to overcome this possible source of misunderstandings in written communication may be found in emoticons. Another effective way to bridge the social and emotional distance in online learning exists in profiles created by the classmates in order to provide information about their background and personality. The creation of avatars, which can take any form and personality, take the social and emotional aspects in a group to a completely virtual level. However, virtual avatars do foster communication nonetheless as they allow the learner to create and express virtual reality as well as real life concerns (Bodemer et al., 2011). A good mix of synchronic and asynchronic forms of communication through different channels can also help to establish social bonds in online classes be they real, semi-real or virtual (Roche, 2011).

Learning a language online with *DUO*

DUO offers online academic German courses on all levels of the CEFR as well as a number of specialized German courses in, for example, economics, law, medicine or culture studies.[59]

58 *DUO* tutor seminars cover the areas of media pedagogy and foreign language learning and teaching.

59 In addition to its German course portfolio, *DUO* also offers courses in English, French, Portuguese, and Japanese (www.deutsch-uni.com/fremdsprachen).

Figure 1: *DUO* German courses and tutoring models

DUO courses can be combined with four different learning methods, namely self-learning, assisted self-learning (with syllabus and basic tutorial support), tutored learning (with syllabus and intensive tutorial support, guidance and feedback), and blended learning.

After the obligatory placement test, learners are grouped in small classes of an average of 12 - 14 students. In the assisted self-learning or the tutored mode the student will also receive personal tutoring. The learners receive their individual learning plan and adjust it (together with their tutor) according to the class's and the learner's individual needs. Learners communicate with each other and their tutors in written chats, forums, wikis, voice chats, or via e-mails. *DUO* tasks and exercises either give auto feedback or detailed individual feedback by tutors. Resources, such as dictionaries, grammars, lexicons or reference grammars and spell checking options, are at the learners' disposal to aid their learning. Each course booked in the tutored learning mode finishes with a test which shows the progress the learner has made during the course[60]. Due to *DUO*'s affiliation with *Ludwig Maximilians University Munich* 3 ECTS credits can be awarded for the completion of a course in the tutored learning method as learners' performances are graded.

The role of language competency in the ERASMUS programme

The *European Commission*'s ERASMUS programme – 2013 in its 26th year – awards students from the European Union scholarships for up to two semesters at a foreign university. The selection of students for the ERASMUS scholarships lies with the National Agencies of each participating country. In Germany, the *German Academic Exchange Service* (*DAAD*) is the National Agency for the ERASMUS programme.

For a successful study exchange a certain level of proficiency in the language of the host country as well as the language of instruction is necessary. Although the final decision lies with the higher education institutions involved in the exchange, the *European Commission* promotes at least an intermediate language competency for students participating in the ERASMUS programme. The reasons for this include:

60 There are no final tests in CEFR level A1 courses because the results at beginner level are often unreliable and rarely significant.

- The quality of the study exchange is enhanced if the students can follow the lectures and seminars effortlessly.
- The students will be able to integrate themselves better into everyday life and feel more comfortable in the host country.
- One of the goals of the ERASMUS programme is to build personal ties and cultural respect and understanding amongst Europeans. Language is a vital medium through which culture is expressed: Better language skills aid students to better understand each other, in the true sense of the word.

As German is one of the languages the *European Commission* excludes from its ERASMUS Intensive Language Courses (EILC)[61], the *DAAD* had to find another way to linguistically prepare their incoming Erasmus students for their studies in Germany. Due to the large number of students coming to Germany – 21.217 in 2011/2012[62] – important criteria for an ERASMUS German course include availability, moderate cost and high flexibility. As pointed out before these are all assets *DUO* online courses offer.

ERASMUS language preparation with *DUO* online courses

The concept of DUO ERASMUS courses

Since 2009, ERASMUS students from selected EU countries have prepared for their studies at a German university with *DUO* courses financed by the *DAAD*.[63] For this purpose, the tutored learning method was selected, which can be combined with all CEFR A and B level courses. It is the most intensely tutored method *DUO* offers and generally produces the best results with respect to the increase of language competency.[64] Each student granted a scholarship for a *DUO* ERASMUS course receives six-month access to the *DUO* course they were allocated to after the placement test. The first three months are intensely tutored while the last three are intended mainly for self-study once the learners have acquainted themselves sufficiently with *DUO*.

Each year, the *DAAD* provides the National Agencies of the participating countries with vouchers for *DUO* ERASMUS courses which are then distributed to the universities who eventually hand them on to selected ERASMUS students going to Germany. All this is done electronically to ensure fast and effective communication. The awarded ERASMUS students register on the *DUO* e-learning platform where they can also redeem their voucher and are subsequently contacted by the *DUO* support staff. The learners are guided through the placement test and class allocation by the *DUO* support team until their course starts and their personal tutors take over. From this moment on, the personal tutor is the learner's main contact at *DUO*.

Students are encouraged to start their *DUO* ERASMUS course well before their study exchange at a German university begins. This head start gives the students the chance to greatly improve their German skills and learn much about German culture and academic life before they arrive. Adjusting

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61 For more information see "The *European Commission*. Erasmus Intensive language courses." http://ec.europa.eu/education/erasmus/eilc_en.htm 28.08.2013
62 For further information see "The *European Commission*. Erasmus mobility in Germany." http://ec.europa.eu/education/erasmus/doc/stat/1011/countries/germany_en.pdf 28.08.2013
63 *DUO* has been gathering experience in the linguistic preparation of *DAAD* scholarship holders since 2008.
64 The average increase in language competency after the three-month tutored period in a *DUO* course is half a CEFR level (e.g. A1.1 > A1.2).

to the new culture and language takes place in the safe surroundings of their home. Culture shock and disappointed expectations can thus be avoided.

Facts and figures for the DUO ERASMUS courses

By the end of 2012, a total number of 2,298 ERASMUS students had taken a *DUO* ERASMUS course financed by the *DAAD*. The following table shows the number of students per participating country in the years 2009 to 2012:

	total				**% of total contingent**			
	2009	**2010**	**2011**	**2012**	**2009**	**2010**	**2011**	**2012**
DK	22				3			
ES	363	212	180	184	46	42	36	37
FI	47				6			
IT	211	100	119	141	27	20	24	28
NO	13				2			
PL		98	104	100		19	21	20
SE	25				3			
UK	98	93	103	77	12	18	20	15
other	8				1			
total	787	503	506	502	100	100	100	100

Figure 2: Number of ERASMUS students per country in the *DUO* ERASMUS courses financed by the *DAAD*

2009 was the trial year with 1000 scholarships for DUO ERASMUS courses for students from eight European countries. The goal was to assess the general demand for courses and use the information to develop a proper allocation formula for the following years. Consequently, the *DAAD* settled the number of *DUO* ERASMUS scholarships at 500 for the years 2010 to 2012. These scholarships were granted to ERASMUS students from Spain, Italy, Poland and the UK.

When they start their *DUO* course the ERASMUS students' language skills vary considerably on the whole. For each participating country, however, the average levels of language proficiency have remained rather consistent over the years 2009 to 2012 as the following figure shows:

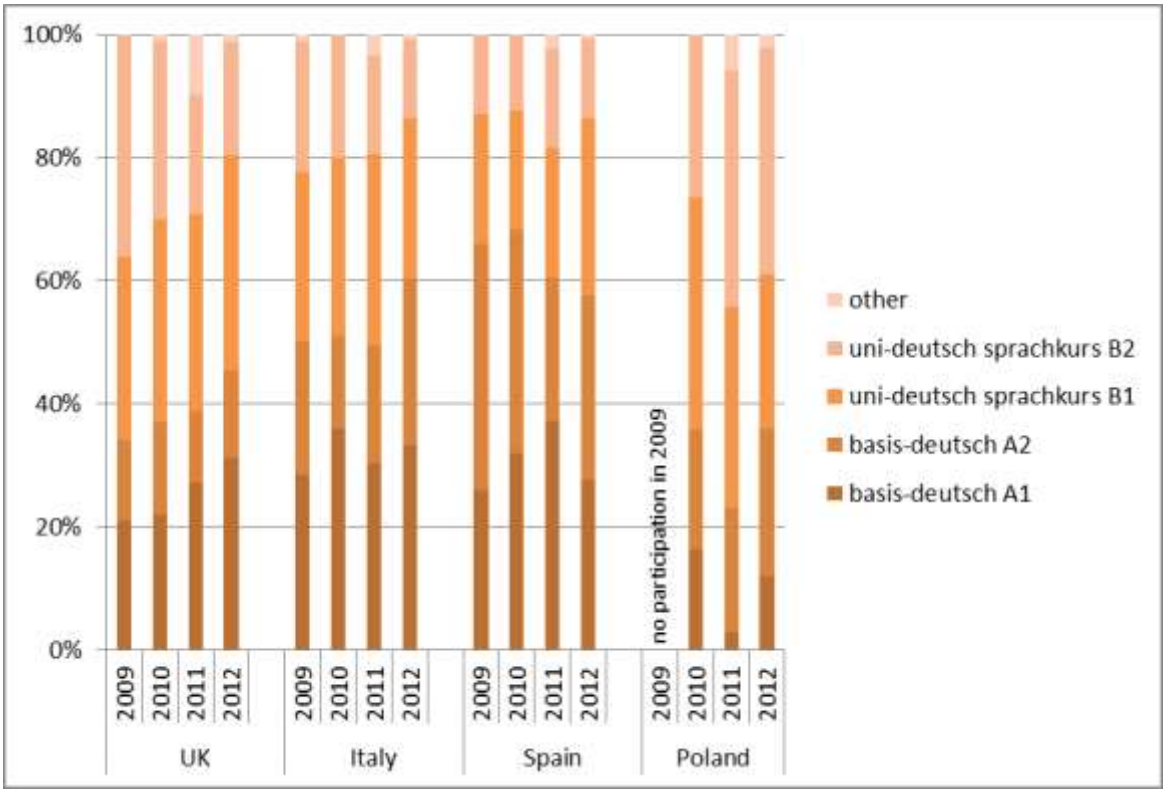

Figure 3: Course allocation by country 2009-2012

The ratio between beginners of German and learners on an intermediate level in the total of the participating countries remained almost even throughout the years 2009 to 2012. This shows that intensive language preparation for studies abroad is deemed important among all learner levels and nationalities. Whereas beginners seek to acquire 'survival German' to build upon during their ERASMUS year, intermediate learners refine their language competencies and particularly learn about academic life in Germany.

Evaluation of the DUO ERASMUS courses

Since the number of scholarships for *DUO* ERASMUS courses was set at 500 in 2010, approximately 50% of the participating students successfully completed their course and received a certificate.[65] Given the high drop-out rates online courses often have – drop-outs in MOOCs in some cases exceed 90%[66] – this number can be regarded as relatively good. Another important factor in evaluating the fairly good completion rate is the fact that participating students did not have to pay for their language course. Rather they were awarded the *DUO* ERASMUS courses by the *DAAD* at no cost. The

65 On a CEFR level A, a certificate with 3 ECTS credits requires a minimum of four tasks corrected by the tutor (8 for levels B and C), the final exam (plus the onDaF for levels B and C), four posts in the class forum (5 for levels B and C), two participations in chats (4 for levels B and C), and 75 auto-check exercises (120 for levels B and C).
On a CEFR level A, a certificate requires at least two tasks corrected by the tutor (4 on levels B and C, plus the onDaF), three posts in the class forum (same for levels B and C), and one participation in a chat (same for levels B and C).
On a CEFR level A, a certificate of attendance is awarded if the learner successfully completed one task corrected by the tutor (same for levels B and C, plus the onDaF), two posts in the class forum (same for levels B and C), and one participation in a chat (same for levels B and C).

66 See http://www.economist.com/news/business/21582001-army-new-online-courses-scaring-wits-out-traditional-universities-can-they for more information.

completion rates by DUO-students therefore indicate that students in fact are highly motivated and that the set up of the courses caters well to their learning profiles.

Figure 4: Certificates awarded to *DUO* ERASMUS students[67]

In the 2012 survey conducted by the *DUO* support staff after completion of the course the *DUO* ERASMUS students described their motivation to take a *DUO* ERASMUS course as follows:

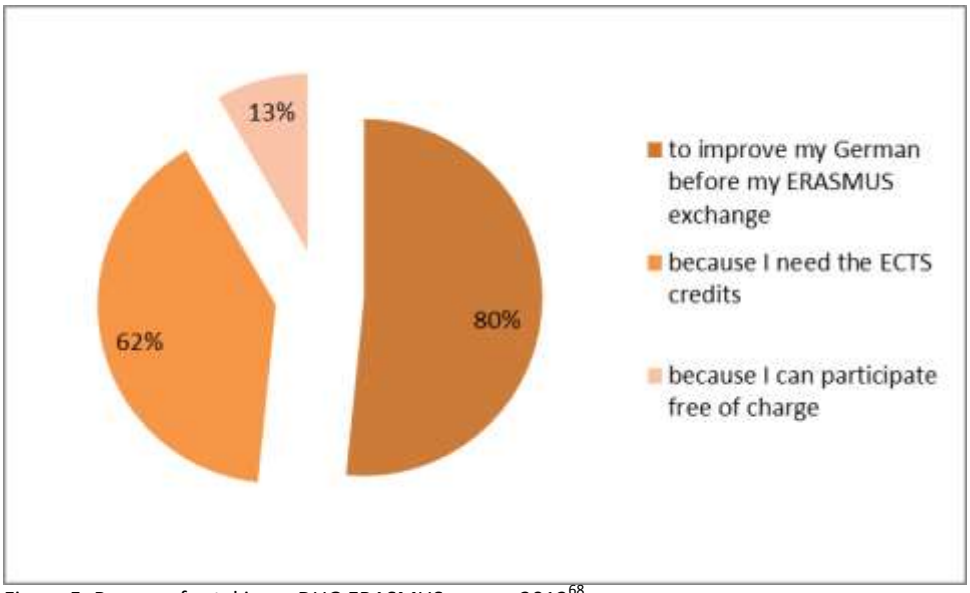

Figure 5: Reasons for taking a *DUO* ERASMUS course 2012[68]

In addition to these answers, several students mentioned that they were curious what learning a language online would be like. This is a very positive feedback in the light of the obstacles e-learning is still facing and it could even be interpreted as a growing trend towards the acceptance of online courses by younger generations of learners. The fact that 90% of the students who participated in the 2012 survey were first-time e-learners supports this interpretation.

67 The category "certificates" includes certificates with and without ECTS credits.
68 A total of 100 students participated in this survey, roughly 1/5 of the total number of *DUO* ERASMUS learners in 2012. The students had the option to give more than one answer.

The survey further shows that *DUO* ERASMUS students tend to study more intensely with *DUO* before they start their ERASMUS exchange; this backs the joint position of the *European Commission*, the *DAAD* and *DUO* that language preparation is most effective if it starts as virtual mobility well in advance of the study exchange.

With respect to the level of difficulty of their *DUO* ERASMUS course, 67% of the students in 2012 claimed that their course was perfect for their level of proficiency; 15% felt well placed, another 15% found the course challenging. Merely three students said that the course was too easy or too hard for them. The obligatory placement test every *DUO* student takes before their course seems to work very well. This finding supports Roche's (2008) claim that a placement test is a key feature in successful e-learning.

With almost 80% of the participating students being "very satisfied" or "satisfied" the overall satisfaction with the *DUO* ERASMUS courses in the 2012 is a further success for the language preparation programme by the *DAAD* and *DUO*. These figures may be considered excellent for online courses and they can certainly compete with ratings of language courses in traditional university settings.

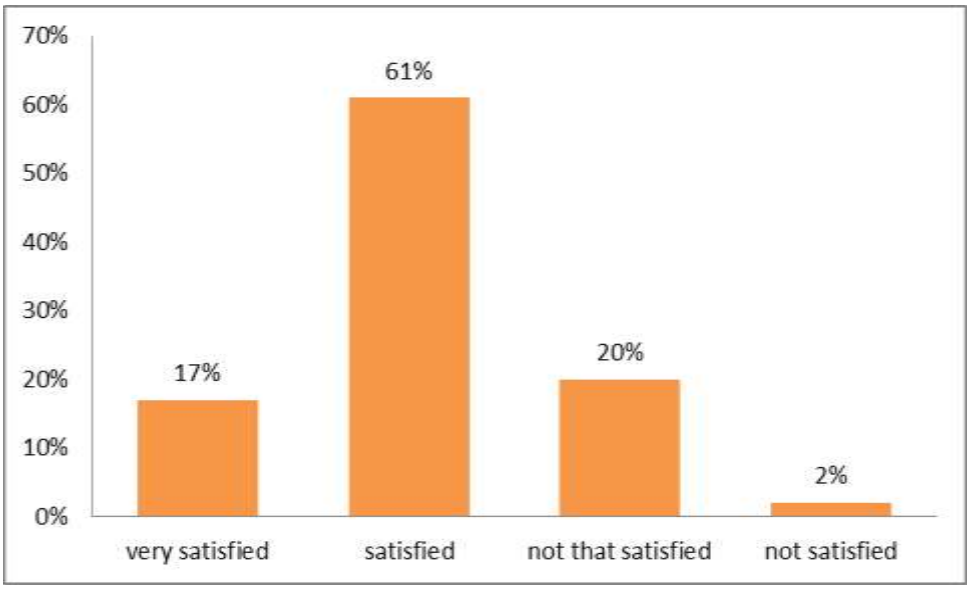

Figure 6: The students' satisfaction with their *DUO* ERASMUS course

The future of the DUO ERASMUS courses

The above portrayed feedback from the 2012 survey is the continuation of the good feedback the joint programme of the *DAAD* and *DUO* has been receiving over the past years. That is why the *DAAD* has decided to extend its language preparation programme in 2012 to include Portugal, Greece and Cyprus. Furthermore, the *DAAD* also increased their financial commitment to this programme in 2012 by raising the number of scholarships for *DUO* ERASMUS courses from 500 to 900.

The positive experience and overwhelming feedback *DUO* has received for their courses gives rise to the idea to extend the *DUO* ERASMUS programme to languages other than German. *DUO*'s French CEFR B-level course *La vie étudiante*, for example, is already tailored to meet the needs of students spending part of their studies at a French university. The development of further courses on the basis of a multilingual ERASMUS language course concept is well under way and should determine DUO's major development over the coming years.

References

Arnold, Patricia; Kilian, Lars; Thillosen, Anne and Zimmer, Gerhard (2011). Handbuch E-Learning, Lehren und Lernen mit digitalen Medien, 2nd ext. and compl. updated ed., Bielefeld: Bertelsmann.

Bodemer, Daniel; Gaiser, Birgit and Hesse, Friedrich W. (2011). Kooperatives netzbasiertes Lernen, in: Paul Klimsa and Ludwig J. Issing (eds.), Online-Lernen, Handbuch für Wissenschaft und Praxis, 2. updated ed., München: Oldenbourg, pp. 151-158.

Deutsch-Uni Online German courses. www.deutsch-uni.com

Deutsch-Uni Online foreign language courses. www.deutsch-uni.com/fremdsprachen

Deutsch-Uni Online language learning platform. www.uni-deutsch.de

Handke, Jürgen and Schäfer, Anna Maria (2012). E-Learning, E-Teaching and E-Assessment in der Hochschullehre, eine Anleitung, München: Oldenbourg.

Katzlinger, Elisabeth (2011). Online-Tutoring, in: Paul Klimsa and Ludwig J. Issing (eds.): Online-Lernen, Handbuch für Wissenschaft und Praxis, 2nd updated ed., München: Oldenbourg, pp. 243-253.

Nalezinski, Sibylle and Raaf, Bettina (2007), Help Yourself to Languages, Computergestütztes Selbstlernen, in: Friederike Klippel, Gerhard Koller and Alex Polleti (eds.), Fremdsprachenlernen Online, Erfahrungen und Erkenntnisse im Projektverbund SprachChancen, Münster: Waxmann (Medien in der Wissenschaft, 45), pp. 59-69.

onDaF - Online Placement Test for German as a Foreign Language. www.ondaf.de

Roche, Jörg (2008), Fremdsprachenerwerb, Fremdsprachendidaktik, 2nd updated ed., Tübingen: Francke (UTB Basics, 2691).

Roche, Jörg (2008a), Handbuch Mediendidaktik Fremdsprachen, Ismaning: Hueber.

Roche, Jörg (2011), Fremdsprachenlernen online, in: Paul Klimsa and Ludwig J. Issing (eds.), Online-Lernen, Handbuch für Wissenschaft und Praxis, 2nd updated ed., München: Oldenbourg, pp. 389-400.

TestDaF – Test für Deutsch als Fremdsprache. www.testdaf.de

The Economist. The Attack of the MOOCs, Print edition, July 20th, 2013. http://www.economist.com/news/business/21582001-army-new-online-courses-scaring-wits-out-traditional-universities-can-they 12.09.2013

The European Commission. Erasmus Intensive language courses. http://ec.europa.eu/education/erasmus/eilc_en.htm 28.08.2013

The European Commission. Erasmus mobility in Germany. http://ec.europa.eu/education/erasmus/doc/stat/1011/countries/germany_en.pdf 28.08.2013

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Exploring new ways to organise digital scholarships in Universities: Digital Social Science and Humanities

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Abstract:

Digital technologies have transformed scholarly practices since the invention of computers; however the past decade, with the popularisation of the Social Web, has seen an acceleration in the way research, learning and management in higher education is conceived.
A wide variety of terms can be found to describe this phenomenon. E-science, cyberinfrastructure, or cyberscience have been used to describe a set of scientific practices particularly based on building resources to improve computational infrastructures for engineering and science. However, this approach is different when we refer to Social Sciences and Humanities. In this regard, terms such as e-research, virtual knowledge or digital humanities intend to capture these particularities.
As a response to the demand of creating institutional spaces to develop research in this field, some universities created centers, departments or labs. In other cases researchers have built informal networks to communicate, share practices and develop projects.
We analysed the content of 30 research centers and other forms of organisations websites in Europe and America in order to understand how digital scholarship in Humanities and Social Science is organised. This paper is intended to provide resources to research leaders and to policy makers at universities to organise digital scholarships in these areas.

Keywords: Technology Acceptance Model, e-learning satisfaction, Personal Learning Environment, competing models.

1. Introduction

Digital technologies have transformed scholarly practices in the last decades. Changes have been more profound and faster since the irruption of the Social Web or Web 2.0 (O'Reilly, 2005). Social online technologies have improved collaboration and communication among academics and have opened new ways to disseminate knowledge in our societies.

The use of digital and computing technologies in Science has received many names: Post-normal Science; Technoscience, Cyberinfrastructure, Cyberscience o e-Science. According to Wouters (2006), e-Science emerges from the combination of three different factors: the sharing of computational resources, distributed access to massive data-sets, and the use of digital platforms for collaboration and communication.

The impact of Information and Communication Techologies (ICTs) in Social Sciences and Humanities have not been addressed in the academic literature to the same extent than in Science (Estalella & Ardévol, 2011). Some particularities can explain this situation. For instance, ICT not only transform the epistemology in Social Sciences and Humanities but also the object of study in its own, involving more complexity. In addition, in theses areas the development of large technological infrastructure might not be so relevant to develop certain types of analysis. In the USA, the debate around the creation of appropriate infrastructures for Social Science and Humanities (Unsworth et al., 2006) have its origin in the strategy for science and technology (Atkins et al., 2003), although there is an emphasis on providing conditions to make cultural objects available for teaching, research, and outreach (Borgman, 2010).

Several approaches have been proposed to cover the particularities of Social Sciences and Humanities, for instance: e-Social Science, e-Research, e-Humanities, Digital Humanities o Generative Humanities (Borgman, 2007).

Our study is intended to analyse how DHC communicate using social media and how this type of communication, open to the general public, relates to the purpose of these centers. Presner and Johanson (2009: 3) states that “by bringing together academic and local experts, new knowledge and new forms of civic engagement emerge for community-based learning experiences.” In this study, we explore civic engagement through the presence of DHCs in social media and the objectives that these centers pursue.

2. Theoretical background

2.1. Digital Humanities

Digital Humanities is the result of a tradition in academia that has its origin in the forties of the XXth century with the Jesuit scholar Roberto Busa's project on digitizing, in collaboration with IBM, the works of Thomas Aquinas. Since then computing technologies have been present in the way that some researchers have addressed humanistic problems. The term Humanities Computing has agglutinated these practices for decades. The transition from Humanities Computing (HC) to Digital Humanities (DH) is well-illustrated by Davidson (2008) using a 2.0 analogy: HC is to Web 1.0 what DH is to Web 2.0, a move towards a more "networked, interactive, collaborative Humanities 2.0"

(Davidson, 2008: 709). Svensson (2009: 9) indicates that DH "suggests a broader scope and it is also used in wider circles as a collective name for activities and structures in between the Humanities and information technology."

What is Digital Humanities is a recurring question that still monopolizes a significant part of the theoretical debates in the field. According to Frischer (2009: 15), Digital Humanities is "the application of information technology as an aid to fulfill the humanities' basic tasks of preserving, reconstructing, transmitting, and interpreting the human record." Burdick et al. (2012: 122) pointed out that, "Digital Humanities refers to new modes of scholarship and institutional units for collaborative, transdisciplinary, and computationally engaged research, teaching, and publication".

More than an independent and unified field, DH is described as an array of practices around ICT that modified the ways in which traditionally knowledge is produced and disseminated (Burdick et al. 2012; Digital Humanities Manifesto, 2009). The same idea was shared in the first editorial of Digital Humanities Quarterly, one of the journals of reference in DH, in its inaugural issue: "Digital humanities is by its nature a hybrid domain, crossing disciplinary boundaries and also traditional barriers between theory and practice, technological implementation and scholarly reflection."

The Digital Humanities Manifesto (2009) underline some characteristics of DH that are analysed in this study:

- Interdisciplinarity/transdisciplinarity/multidisciplinarity.
- Openness: open source, open resources, open doors.
- Copyright and Intellectual Property standards are reconceptualized and new forms of licensing are proposed.
- Redefinition of the contours of the research community.
- Flattening of the relationship between masters and disciples.
- Social engagement.

2.2. Digital Humanities Centers (DHC)

As a response to the demand of creating institutional spaces to develop research in this field, some universities have created centers, departments or labs. In other cases researchers have built informal networks to communicate, share practices and develop projects. As Svensson (2009) points out "humanities computing enterprises have been institutionalized in many different ways."

According to Zorich (2008: 7),"A digital humanities center is an entity where new media and technologies are used for humanities-based research, teaching, and intellectual engagement and experimentation. The goals of the center are to further humanities scholarship, create new forms of knowledge, and explore technology's impact on humanities- based disciplines".

DHCs occupy a position in the Academia that is transversal to various disciplines, for instance Conway et al. (2010) showed how these centers are related to information schools.

Understanding of the organizational context is still an issue in Digital Humanities (Siemens, 2009). Different studies have addressed this topic, for example Warwick (2004) explored the organizational context of Digital Humanities/Humanities Computing centres in the United States and England. Kirschenbaum (2010) provided an overview of the formation of the Digital Humanities concept and the centers and associations that articulate the movement. Zorich (2008) studied DHC in the USA.

Unsworth (2007) addressed the recommendations included in the ACLS (American Council of Learned Societies) report on Cyberinfrastructure. In his view, "digital humanities centers are

cyberinfrastructure for humanities and social sciences--not the only kind, but one of the most important kinds".

3. Methodology

3.1. Digital Humanities Centers in the study

ALLC - the European Association for Digital Humanities includes in its website a webpage with a list of DHC (http://www.allc.org/education/digital-humanities-centres). We selected the DHC in USA, Canada and Europe. At the time of data collection (July 2013), there are 33 centers: 18 in North America and 15 in Europe. 3 European centers were excluded. The Hamburg Digital Humanities Center website was not available. The Cologne Center for eHumanities and Computerlinguistik und Technologie at the University of Bielefeld only provided information in German and they could not be evaluated by our team of researchers.

3.2. Online presence: website and social networks

The websites of the centers were collected from the ALLC website and then verified using Google. Information about the nature and purpose of the centers ("about us" statements, mission statements, etc.) were collected from the websites.

The profiles in social networks were searched in the center websites, however most of them didn't provide this information. In those cases Google and the search engines of Twitter and Facebook were used to find those profiles. Sometimes some centers include a link to social profiles that belong to the academic institution as a whole, not only to the particular DH center. When searching for centers in Facebook, some results didn't correspond to pages created by the centers but to Wikipedia pages about the centers that Facebook retrieves and offers as a result of the search. Both types of results were excluded.

The variables collected in Twitter were the number of followers and tweets and in Facebook, the number of "likes".

3.3. Mission statements items

Zorich (2008) analysed "Mission Statements" of 32 Digital Humanities Centers in the USA. She classifies the content of these statements within three categories, each of which were composed of different items:

A. Organization's purpose (13 items);
B. How to achieve the purpose (10 items);
C. Principles guiding the purpose (5 items).

To operationalise the analysis of the nature and purpose on the DHCs in our study, we decided to reduce the number of items in each category by reaching a consensus by the three researchers involved in the study. Each researcher was asked to cluster the items according to their perceived similarities. In the rare case of disagreement, the items were discussed to reach a consensus.

In the category C, Zorich (2008) only identified 5 items and therefore we didn't consider necessary to reduce the number of items for the analysis.

The final categories and items used for classification were as shown in Table 1.

Table 1. Mission statements items used for the analysis of DHCs.

A] Organization's purpose
A1] Develop communities of stakeholders and public, engaged in humanities questions in order to share experiences and resources and to create collaboration spaces.
A2] Criticize traditional ways of knowledge and learning and to create innovative projects.
A3] Promote social commitment and activism.
A4] Develop infrastructure for DH (tools, digital contents, methodologies and resources for global use).
A5] Create conditions for interdisciplinarity.
B] How to achieve the purpose
B1] Providing infrastructure for the development of DH, including the creation of tools, services and conditions.
B2] Creating gathering spaces for dialogue and learning.
B3] Designing and participating in research projects.
B4] Providing technical assistance for all the stakeholders interested in DH.
C] Principles guiding the purpose (taken from Zorich, 2008: 15)
C1] The enduring value of the humanities.
C2] Collaboration and cross-disciplinarity.
C3] Openness.
C4] Civic and social responsability.
C5] Questioning "Sacred Cows."

4. Results and discussion

4.1. Descriptive analysis of presence in Facebook and Twitter

Out of the 30 DHCs in the sample, 20 maintain a Twitter profile (58% of European centers and 72% of American centers) and 10 a Facebook page (33% of European and American centers). Table 1 shows the ranking of number of 'likes' in DHCs' Facebook pages (data collected on July 11th, 2013).

Table 1. Ranking of DHC according to number of 'likes' in Facebook pages.

Ranking	DHC Code	Center	University	Country	# likes (11/7/13)
1	21	DXARTS Center for digital Arts and Experimental Media	University of Washington	USA	688
2	15	The Medici Archive Project	Florence	Italy	529
3	26	Digital Writing and Research Lab	University of Austin, Texas	USA	445
4	6	Digital Humanities Observatory	Royal Irish Academy, Dublin	Ireland	179
5	16	Maryland Institute for Technology in the Humanities	University of Maryland, USA	USA	130
6	4	The Digital Humanities Centre	University of Nottingham	UK	104
7	1	UCL Centre for Digital Humanities	University College London	UK	72
8	29	Institute for Digital Research in the Humanities	University of Kansas, Lawrence	USA	66
9	17	Initiative for Digital Humanities, Media, and Culture	Texas A&M University, USA	USA	59

10	22	UCLA Center for Digital Humanities	UCLA, University of California	USA	43

All the centers are linked to a University, except The Medici Archive Project (MAP) in Florence (Italy). As the website of the MAP states (consulted 19/7/2013), this is a "an unprecedented model for a research institute". The project started in the early 1990s based on the creation of an electronic catalog of the Medici Granducal Archival Collection. Recently the traditional mission as an archive has changed becoming "a research institution with the mission of actively generating scholarly discourse and embracing disparate dimensions of scholarly experience". In this regards, the MAP is not linked directly to a higher education institution and has become a center for innovation in humanist research by merging "archival research with technological innovations for data management". The image shows how the MAP is using Facebook to disseminate digitalized documents, for instance, te image shows a post regarding a document about the problem caused by syphilis in a ship at the beginning of the XVII century. This experience suggests innovative ways to communicate archival material to stakeholders using social media. Table 2 shows a ranking of the top 10 DHCs according to the number of followers.

Image 1. Facebook page of The Medici Archive Project (captured 11/7/2013).

Table 2. Ranking of top 10 DHCs according to number of followers in Twitter (data collected on July 5th, 2013).

Ranking	Code	Center	University	Country	# Followers (5/7/13)
1	1	UCL Centre for Digital Humanities	University College London	UK	2536
2	16	Maryland Institute for Technology in the Humanities	University of Maryland, USA	USA	2530
3	5	Centre for Computing in the Humanities	King's College, London	UK	2096
4	19	The Institute for Advanced Technology in the Humanities (IATH)	University of Virginia, USA	USA	581
5	18	Center for Digital Research in the Humanities	University of Nebraska-Lincoln, USA	USA	489
6	31	South Jersey Center for Digital Humanities	Stockton College, Pomona, New Jersey	USA	443
7	22	UCLA Center for Digital Humanities	UCLA, University of California	USA	442
8	26	Digital Writing and Research Lab	University of Austin, Texas	USA	404
9	24	Center for Digital Scholarship	Brown University, Providence	USA	292

10	14	HUMlab	University of Umeå	Sweden	277

Image 2. Twitter account of Centre for Digital Humanities at UCL (captured 11/7/2013).

The table included in the Appendix shows the number of tweets published by each DHC. This indicator was used to cluster the DHCs because in our view it shows the intention of the institution to social engagement. Although the number of followers and tweets published is supposed to be positively correlated, it is not granted that a DHC with a regular pace of publishing receives attention and consequently more followers.

An interesting example is the DHC at the University of Gottinghem which, at the time of data collection, accounted for 135 followers without publishing any tweet. This suggests that when talking about institutions, reputation offline is reflected online even though no real online presence is developed.

4.2. Statistical Analysis: Correspondance factor analysis

We built a matrix were each center was evaluated according to Table 1. If an item reflected the characteristics of the center, the value was 1. This analysis was made by the three researchers and then compare to reach a consensus. In the final matrix the value 1 was given when at least two of the researchers gave the value 1 to a particular item.

Once we got the resulting matrix we cluster the DHCs into three groups depending on their presence in Twitter. Twitter presence was considered as a proxy for DHC intentions to social engagement and communication. Three groups were created (see Appendix 1 for details): no Twitter, low use of

Twitter and high use of Twitter. Out of the 20 DHCs using Twitter, high and low use were determined by creating 2 groups according to the number of tweets.

The resulting matrix is a contingency table with one row for each DHC group and one column for each of the characteristics of the centers. A correspondance factor analysis (CFA) was used to visualize the relationships between DCH groups and characteristics. CFA (Greenacre, 2007) allows to represent categorical data in an Euclidean space and makes easier the analysis of relationships between variables through visual inspection.

Interpretation of the plot is based on Euclidean distances between variables. The porcentage of inertia of each dimension indicates how important is that dimension for the interpretation of the results.

As previously indicated, the interpretation of the CFA needs to be done visually by assessing the relative position of the variables in the plot.

In the graphs the group with high use of Twitter is label as "Alto", with low use as "Bajo", while “No Twitter” was the label used for the group of DHCs that are not utilising Twitter.

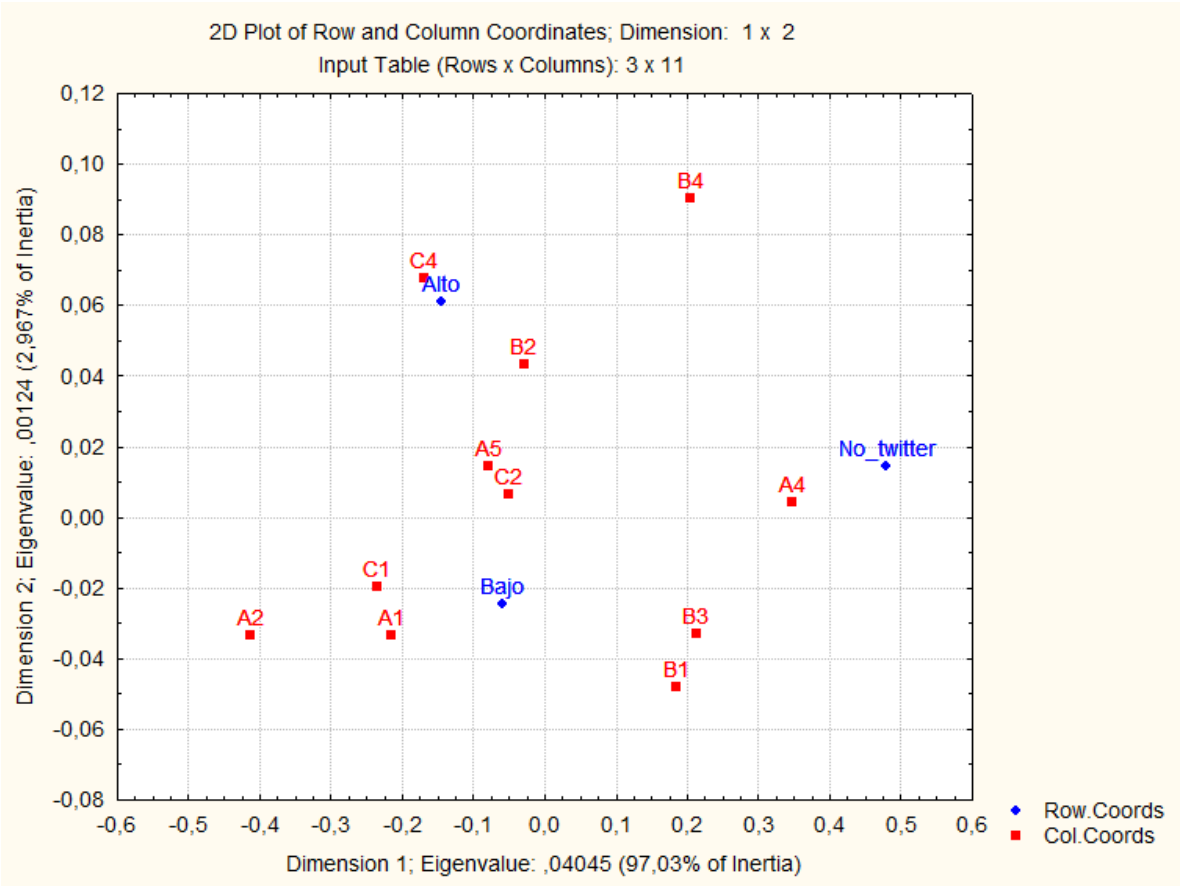

Image 3. Plot of Mission Statements items and Clusters of DHCs Twitter accounts (correspondance factor analysis)

In image 3, the percentage of inertia of the dimension 1 is 97%. This means that the horizontal proximity between the variables is much more relevant than the vertical proximity when interpreting the results (for instance, B3 and B4 are in a very close position, but not A1 and B3).

DHCs without Twitter account are clearly linked to the feature A4 "Develop infrastructure for DH (tools, digital contents, methodologies and resources for global use)."
Features that are more related to DHC with low use of Twitter or without Twitter are:

- B1] Providing infrastructure for the development of DH, including the creation of tools, services and conditions.
- B3] Designing and participating in research projects.
- B4] Providing technical assistance for all the stakeholders interested in DH.

The feature that is more directly associated to DHCs with high use of Twitter is C4 "Civic and social responsability."
In our analysis of the nature and purpose of the DHCs in relation to the level of use of Twitter, we found that those centers with no Twitter are directly linked to a mission of developing infrastructure for DH. Svenson (2009) pointed out that there exist an historically and even contemporarily consideration of this centers as units that provide services and instrumental function to other units in the schools and/or universities where they are affiliated.

5. Final remarks

The online presence of the DHCs in Facebook and Twitter is, in our view, lower than expected if we take into consideration the pledge for digital tools that these centers lead in the academic sphere. Collaboration, communication and social engagement are values that have been claimed as genuine of a Web 2.0 culture that, as Davidson (2008) pointed out, could be behind the move from Humanities Computing to Digital Humanities.
Moreover, there are different digital cultures. Not just one. Digital scholarship is embracing an idea of openness, collaboration and social engagement, many times from an activist perspective. These particular digital culture does not seem to be clearly behind the DHCs.
In conclusion, we share Borgman's (2010: 22) view and we agree with him in his claim for more social studies of digital humanities:
"Why is no one following digital humanities scholars around to understand their practices, in the way that scientists have been studied for the last several decades? This body of research has informed the design of scholarly infrastructure for the sciences, and is a central component of cyberinfrastructure and eScience initiatives. Given how rapidly scholarship in the humanities is evolving, it is fertile ground for behavioral research. The humanities community should invite more social scientists as research partners and should make themselves available as objects of study. In doing so, the community can learn more about itself and apply the lessons to the design of tools, services, policies, and infrastructure".

References

Borgman, C. L. (2007). Scholarship in the Digital Age: Information, Infrastructure, and the Internet. Cambridge, MA: MIT Press.

Borgman, C.L. (2009). "The Digital Future is Now: A Call to Action for the Humanities". Revised final accepted version for Digital Humanities Quarterly. Available at: http://works.bepress.com/borgman/233

Burdick, A., Drucker, J., Lunenfeld, P., Presner, T., & Schnapp, J. (2012). Digital Humanities. MIT Press.

Estalella, A. & Ardévol, E. (2011). “e-Research: desafíos y oportunidades para las ciencias sociales”. Convergencia, 18(55), 87–111.

Davidson, C. (2008). 'Humanities 2.0: Promise, Perils, Predictions'. PMLA. 123(3): 707-717.

Borgman, C.L. (2009). "The Digital Future is Now: A Call to Action for the Humanities". Revised final accepted version for Digital Humanities Quarterly. Available at: http://works.bepress.com/borgman/233

Conway, P., Fraistat, N. , Galloway, P., Kraus, K., Rehberger, D., & Walter, K. (2010). Digital Humanities Internships: Creating a Model iSchool-Digital Humanities Center Partnership. In Proceedings of the Digital Humanities Conference 2010.

Digital Humanities Manifesto (2009). UCLA. Retrieved from http://dev.cdh.ucla.edu/digitalhumanities/2008/12/15/digital-humanities-manifesto/ on 26 July 2013.

Frischer, B. (2009). Art and Science in the Age of Digital Reproduction: From Mimetic Representation to Interactive Virtual Reality. I Congreso Internacional de Arqueología e Informática Gráfica, Patrimonio e Innovación, Sevilla 17-20 de Junio de 2009.

Greenacre, M. J. (2007). *Correspondence analysis in Practice*. Chapman & Hall, Boca Raton.

Kirschenbaum, M.G. (2010). "What is Digital Humanities and What's it doing in English Departments?". ADE Bulletin, 150: 1-7.

Manovich, L. (2009). Cultural Analytics. Software Studies Initiative, University of California, San Diego. Retrieved from http://lab.softwarestudies.com/2008/09/cultural-analytics.html on 26 July 2013.

O'Reilly, T. (2005). “What Is Web 2.0: Design Patterns and Business Models for the Next Generation of Soft-ware.” O'Reilly. 30 Sept. 2005. O'Reilly Media. 24 June 2007 Retrieved from: http://www.oreillynet.com/pub/a/oreilly/tim/news/ 2005/09/30/what-is-web-20.html on 26 July 2013.

Presner, T. S. & Johanson, C. (2009). The Promise of Digital Humanities: A White Paper. 1-19. Retrieved from http://www.itpb.ucla.edu/documents/2009/ PromiseofDigitalHumanities.pdf on 26 July 2013.

Siemens, L. (2009) "It's a team if you use "reply all": An exploration of research teams in digital humanities environments". *Literary and Linguistic Computing*, 24 (2): 225-233.

Svensson, P. (2009). “Humanities Computing as Digital Humanities”. *Digital Humanities Quarterly*, 3(3).

Unsworth, J. (2007). 'Digital Humanities Centers as Cyberinfrastructure'. Digital Humanities Centers Summit. Washington, DC, 12 April. Retrieves from http://people.lis.illinois.edu/~unsworth/dhcs.html on 26 July 2013.

Warwick, C. (2004). ‘‘No such thing as humanities com-puting?'' An analytical history of digital resource crea-tion and computing in the humanities. Joint International Conference of the Association for Computers and the Humanities and the Association for Literary & Linguistic Computing, Göteborg, Sweden. Prepublication document retrieved from http://tapor.humanities .mcmaster.ca/html/Nosuchthing_1.pdf on 26 July 2013.

Wouters, P. (2006). “What is the matter with e-Science? - thinking aloud about informatisation in knowledge creation”. Pantaneto Forum, julio 2006. Retrieved from http://www.pantaneto.co.uk/issue23/wouters.htm on 26 July 2013.

Zorich 2008 Zorich, Diane M. "A Survey of Digital Humanities Centers in the United States". Washington, DC: Council on Library and Information Resources, 2008. Retrieved from http://www.clir.org/pubs/abstract/pub143abst.html on 26 July 2013.

APPENDIX

Apendix 1: DHCs in the study (including the number of Twitter followers and clusters for the Correspondance factor analysis).

Code	Center	University	Country	# tweets (5/7/13)	Clusters
1	UCL Centre for Digital Humanities	University College London	UK	1255	High use
2	Göttingen Centre for Digital Humanities	Georg-August-Universität Göttingen	Germany	0	Low use
3	Humanities Reseach Centre	University of Sheffield	UK	-	No Twitter
4	The Digital Humanities Centre	University of Nottingham	UK	395	High use
5	Centre for Computing in the Humanities	King's College, London	UK	240	Low use
6	Digital Humanities Observatory	Royal Irish Academy, Dublin	Ireland	-	No Twitter
7	The Humanities Advanced Technology and Information Institute	University of Glasgow	UK	257	High use
8	Centre Informatique de Philosophie & Lettres	University of Liege	Belgium	-	No Twitter
12	Zentrum für Informationsmodellierung in den Geisteswissenschaften	University of Graz	Austria	-	No Twitter
13	Le centre CATI (Cultures Anglophones et Technologies de l'Information)	University of Sorbonne, Paris	France	-	No Twitter
14	HUMlab	University of Umeå	Sweden	229	Low use

15	The Medici Archive Project	Florence	Italy	217	Low use
16	Maryland Institute for Technology in the Humanities	University of Maryland, USA	USA	802	High use
17	Initiative for Digital Humanities, Media, and Culture	Texas A&M University, USA	USA	211	Low use
18	Center for Digital Research in the Humanities	University of Nebraska-Lincoln, USA	USA	249	Low use
19	The Institute for Advanced Technology in the Humanities (IATH)	University of Virginia, USA	USA	171	Low use
20	Center for Humanities and Digital Research	University of Central Florida	USA	-	No Twitter
21	DXARTS Center for digital Arts and Experimental Media	University of Washington	USA	680	High use
22	UCLA Center for Digital Humanities	UCLA, University of California	USA	257	High use
23	Digital Humanities Center	University of South Carolina	USA	-	No Twitter
24	Center for Digital Scholarship	Brown University, Providence	USA	45	Low use
25	Alabama Digital Humanties Center	University of Alabama	USA	658	High use
26	Digital Writing and Research Lab	University of Austin, Texas	USA	607	High use
27	Indiana University Center for Digital Arts and Humanities	Indiana University, Bloomington	USA	-	No Twitter
28	Institute for Computing in Humanities, Arts, and Social Science – I-CHASS	University of Illinois, Urbana-Campaign	USA	13	Low use

29	Institute for Digital Research in the Humanities	University of Kansas, Lawrence	USA	738	High use
30	Loyola University Chicago's Center for Textual Studies and Digital Humanities	Loyola University of Chicago, Illinois	USA	91	Low use
31	South Jersey Center for Digital Humanities	Stockton College, Pomona, New Jersey	USA	474	High use
32	Electronic Text Research at the University of Saskatchewan - ETRUS	University of Saskatchewan	Canada	-	No Twitter
33	Canadian Institute for Research in Computing and the Arts	University of Alberta	Canada	-	No Twitter

Rosa de Annamaria Silvana

Complementary on-line and face-to-face structured training activities in a joint networked international doctorate.

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Abstract

This paper illustrates how structured and networked training approach has been integrated by an international joint doctoral program, selected as "an excellent Innovative Doctoral Program with important impact" within the 2013 People-ITN call, after previous selection in the 5th F.P.

Built on the experience of both the European/International joint PhD in Social Representations and Communication, awarding a recognised joint degree since 1996 (http://www.europhd.eu) and the EU approved So.Re.Com. THEmatic NETwork (http://www.europhd.eu/SoReComTHEmaticNETwork), headquartered at the *state of the art* Social Representations and Communication Research Centre and Multimedia Lab of Sapienza University of Rome, this SoReComJointIDP includes 8 universities, 2 private companies and 1 public research institute in 8 European countries (AT, CH, CZ, ES, FR, IT, RO, SE), and 6 universities in United States, Canada, Brazil, Argentina, Mexico and China.

It includes:

a) an integrated physical and virtual campus, where world-class scientists and early-stage-researchers cooperate face-to face and on-line "for" and "by" research;

b) multiple supervision in different countries;

c) individual mobility for early stage researchers for secondments;

d) collective international mobility of trainees and teaching staff during International Summer Schools and Winter/Spring Sessions of Lab meetings;

e) worldwide access to common dedicated web platform, as tool for documentation, networking, training and a personalized web-space for monitoring trainees' progress by the three tutors and the members of the International Jury, who are given access to the on-line evaluations of the full report on the thesis and the short article. It also allows trainees to rate and provide feedback on training activities.

Keywords: networked joint international doctorate, integrated face-to-face training and open distance learning, SoReComJoint-IDP

1. Introduction: The need for internationalization of doctoral training in the globalised scenario.

It is well known that political integration and global socio-economic processes have created the need for new generations of researchers and policy makers capable of working in different cultural settings and who have the necessary skills to analyse and resolve social policy problems in a trans-national perspective.

In an educational and research market that is increasingly globalised and interdependent, the diffusion of innovative institutional advanced research training networks represents an opportunity for improving scientific cooperation around the world. In Europe - challenged by the rapidly evolving global scenario, the European Commission, national ministries, universities, university and professional associations and bodies, working from different interlocking perspectives (local, regional, national, supranational, global) and in different historical and economic political contexts (prosperity, financial progress or crisis, political agreement or conflict, job creation or unemployment, technological development or gaps, etc.) have contributed to the process of reform in European higher education and continue to regulate the speed of its implementation and consolidation as well as its prospects. Some of the priorities recommended by the 2009 Leuven inter-ministerial Communiqué for enhancing international openness are of particular interest for doctoral education, following the *Salzburg I and II principles* and the *European Council for Doctoral Education's* advices. These priorities include that: a) Joint degrees and programs as well as mobility windows should become more common practices; b) the number of people with research competence should increase; c) doctoral programs should provide high quality research and increasingly be complemented by inter-disciplinary and inter-sectoral programs. In addition, public authorities and institutions of higher education should make the career development of early stage researchers more attractive.

However, as stated in the announcement of the "*Excellence in European Doctoral Education (ExEDE) Conference* [69], "Excellence in European doctoral education is cited by the EU, national governments, funding and quality agencies, employers and universities as a key priority now and for the future. While the Salzburg II recommendations and numerous reports from European organisations set out in general terms the key elements of doctoral training, there are few examples of how these principles and concepts can be translated into innovative practice, particularly at an institutional scale." (retrieved from http://exede.eventbrite.co.uk/ , October 31 2013).
On the basis of experience and expertise gained in creating and leading the first international joint doctorate (the European/International Joint PhD in Social Representations and Communication[70]), – which since 1992 has been approved by the European Commission (DG-Education and Culture and DG - Research) as well as by the Ministries for Scientific Research and Higher Education in many EU

69 The "*Excellence in European Doctoral Education (ExEDE) Conference*" (28th-29th November 2013, Edinburgh, U.K.) has been organised by the University of Edinburgh and Aarhaus University which are working together on a collaborative project to discuss, develop, pilot, evaluate and share practice around a series of interrelated work packages, addressing a number of key themes surrounding excellence in European doctoral education including support, supervision,employer engagement, employability and mobility. http://www.au.dk/en/doctoralexcellence/doctoralexcellence/exede/

70 http://www.europhd.eu

countries[71] - we are committed to disseminate the vision (and to share its related best practices) that the Networked Joint International Doctorate represents a key tool for the internationalisation of doctoral education within and outside Europe's borders, arguing that one of the main reasons to participate in a joint program for research training is to establish synergies and maximize complementarities of expertise, not to homogenise programmes into one worldwide formula for doctorates. In previous articles (de Rosa, 2008a, 2010b, 2010c, 2011c), we have developed some theses presenting the *new forms of international cooperation in doctoral training*, distinguishing *internationalisation* and the *International Doctorate* as two distinct models that share the same goal of internationalisation for doctoral training that for the past 10 years has been promoted by the Bologna Process, most especially after the 2003 Berlin Communiqué. A joint doctorate commits institutions to integrate all aspects of the programme, making it something more and different than an additional certificate for international mobility or *co-tutelle*. Among the various routes possible for the future of doctorates in Europe and across the world, a structured international programme based on networking, multiple joint supervision, common rules for recruitment, training and evaluation and providing physical and virtual mobility can be seen as one of the responses to doctoral trainees' demands to overcome their isolation and the limitations of the individual "apprenticeship" model. In the era of the network society, innovative networked joint doctoral programmes open to international cooperation are one way to meet early stage researchers' need for research training and for supra-disciplinary research teams co-operating at the global scale. In this paper - in line with the three key scopes of the The Open and Flexible Higher Education **EADTU Conference 2013**,[72] promoting *innovation, international curriculum collaboration and leadership* in the process of modernisation of the European Higher Education system by combining traditional teaching and technology-enhanced learning - we will illustrate how structured and networked training approach has been integrated by the *European/ International Joint Ph.D. in Social Representations and Communication*.

2. The European/International Joint Doctorate in Social Representations and Communication: a visionary Idea that became an Institution recognised as "best practice".

The *European/International Joint Doctorate in Social Representations and Communication,* born in 1992 from a visionary idea fully implemented in 1996, represents a case study on institutional innovation through a networked joint doctoral programme, that has anticipated the doctoral education, showing how a "wild" idea became an institution recognised as "best practice" in a progressive changing "*esprit du temp*" (de Rosa, 2004a, 2004b, 2004c, 2009a, 2009b, 2010b).

Following a long history of institutional recognition within the multiple scenarios of European Commission, Ministries of Higher Education and Research, Universities, also including previous selection as the largest Marie-Curie Multi-Partner organisation in social sciences in the 5th F.P.[73], the last step is the top evaluation of the **SoReComJoint-IDP** (obtaining a mark of 98,80/100) as "an excellent Innovative Doctoral Program with important impact", selected by the European Commission as the best Innovative Doctoral Program among 1175 proposals presented within the 2013 Marie Curie - People – ITN call of the 7th Framework Program. This currently represents the best

71 For its long history of institutional recognition, see: http://www.europhd.eu/html/_onda01/02/00.00.00.00.shtml

72 "*Transition to open and on-line education in European universities*" (Paris 24th-25th October 2013), http://conference.eadtu.eu/42-the-open-and-flexible-higher-education-conference-2013

73 http://www.europhd.eu/html/_onda01/09/00.00.00.00.shtml

external evaluation for any doctoral program in Europe, replacing the action of Erasmus Mundus for the joint doctorates

The SoReComJoint-IDP is coordinated by the single participant, the Sapienza University of Rome (Italy), Europe's largest university as well as Italy's finest university in a world-wide ranking of universities. In addition to the project coordinator, this IDP includes a training network of 16 associated partners (13 universities, 2 private companies, 1 public research centres with intensive and extensive cooperation with the private sector) in 8 European countries (Austria, Czech Republic, France, Italy, Romania, Spain, Sweden, Switzerland) and in 6 extra-European countries (Argentina, Brazil, Canada, China, Mexico, United States) [74]. This large and diversified training network provide unique opportunities for interdisciplinary research training that responds to the needs of both academia and private companies (see Figure 1)..

The associated partners have close institutional and scientific relations with the coordinator, as they are all members of the European PhD on Social Representations and Communication and of the SoReCom THEmatic NETwork. Their participation in the project is essential because they ensure a wide range of complementary paradigmatic, methodological and thematic options offered by international and cross-sectoral research teams within and outside European borders. They perform vital tasks such as co-tutoring activities (ensuring the multi-paradigmatic and multi-methodological approach to the research training), hosting ESR for secondments and providing valuable training modules during the project's foreseen scientific events.

The inclusion of the 6 extra-European partners is also important for several reasons, among which: a) attracting to Europe the best researchers in this scientific field from abroad; b) promoting and developing Europe's excellence in this field; c) contributing to the expansion of this European field of excellence in countries where the penetration of the Social Representation theory is still weak (mainly China and the USA); d) cross-fertilising the European research training environment, thereby improving the multi-cultural exchange of EU and non-EU recruited research fellows from different academic traditions and cultural backgrounds. These extra-EU partners are already involved in research programs in common thematic areas. They thus contribute to disseminating in their countries and contexts the paradigmatic models and methodologies in social representation mainly developed in Europe; strengthen the leadership of European research in this field; and increase the attractiveness of European research institutions abroad.

The SoReComJointIDP is built on the sound experience of both the European/International Joint PhD in Social Representations and Communication, awarding a recognised joint degree since 1996 (http://www.europhd.eu) and the EU approved So.Re.Com. THEmatic NETwork, a *"network of networks"* that promotes co-operation between academic, professional research and commercial institutions and facilitates the dissemination of scientific results throughout Europe and around the world (http://www.europhd.eu/SoReComTHEmaticNETwork) (de Rosa, 2006, 2009a, 2009b) (see Figure 2).

74 http://www.europhd.eu/html/_onda01/10/00.00.00.00.shtml

Figure 1. The So.Re.Com. Joint Innovative Doctoral Program institutional network

Figure 2. The So.Re.Com. THEmatic NETwork at a glance on global scenario

It is headquartered at the ***state of the art*** **Social Representations and Communication Research Centre and Multimedia Lab of Sapienza University of Rome**, led by Annamaria Silvana de Rosa, founder of both the European/International Joint PhD in Social Representations and Communication and of the So.Re.Com. THEmatic NETwork. Located at the University of Rome Sapienza, the state-of-the-art *Research Centre and Multimedia Lab is* a fully equipped high-tech facility that is the nerve centre of the *European/International Joint PhD programme in Social Representations and Communication,* the training structure of the wider *So.Re.Com. THEmatic NETwork*. Recently (2012) transferred from its previous historical location opposite Campidoglio (Piazza d'Ara Coeli, 1 - Rome) to another larger wonderful location in the very heart of Rome at the top of Aventino Hill (Piazza Cavalieri di Malta, 2 - Rome) overlooking the capital's historical archaeological and artistic-architectonic centre, it guarantees technical support for training and management activities, including real-time interactive exchanges with all participants and partner institutions and a vast network of other similarly equipped research centres around the globe.

The European PhD joint doctorate has been established on the basis of an inter-institutional agreement signed by their rectors and of E.C. contract agreements. In its role as co-ordinator, diplomas are issued by the University of Rome Sapienza with the signature of the rectors/presidents of the universities, which jointly confer the degree. This *joint doctorate* is recognised by all network universities as well as having been approved by E.C. DG-Research (T.M.R., High Level Scientific Conferences, Marie Curie Actions Series of Scientific Events), E.C. DG-Education and Culture (Erasmus Socrates Advanced Curriculum Development, Intensive Programs, Teaching Staff Mobility, Thematic Network), the Italian Ministry for Universities and Research under the Internationalisation of the Higher Education System programme, French and Italian ministries responsible for higher education under the Vinci Programme and by the European University Association and US-EU Commission for Fulbright-Schuman award.

Our SoReComJointIDP research training programme focuses on a **supra-disciplinary area of the social sciences**, and in particular of Social Psychology, inspired by the Social Representations Theory, one of the most important theories of the social construction of knowledge. Founded by Serge Moscovici (honorary programme director of the European PhD on Social Representations and Communication) in 1961, the study of social representations, originally specifically European, is currently a multilingual, worldwide discipline with a substantial body of literature (Moscovici, 1961/1976, 2000, 2012, 2013; Farr and Moscovici, 1984; Jodelet, 1989, 2009; de Rosa, 2008b, 2011a, 2011b, 2012, 2013, 2013a, 2013,b; Almeida, Trindade and Santos, 2011; Galli, 2012 among others). It involves leading scholars from both social psychology and the social sciences: sociology, anthropology, education, economics, linguistics, semiotics and communication and media studies. Contrary to the

fragmentation of traditional social science disciplines, the field of Social Representations represents a unifying meta-theoretical perspective on the social construction of knowledge and its relation to socially situated practices. Consequently, the SoReComJointIDP project is open to trans-disciplinary and multi-methodological research approaches (experimental and field work). Studies of "what" people know – and "how" it relates to the social groups to which they belong and to the media – are concerned with the social construction and representation of a particular object (e.g. health-illness, environment, new technologies, politics, economics, European integration and enlargement, minority groups, immigrants and racism, human rights, etc.) and how its related scientific theories are transformed into everyday knowledge. The "objects" studied have a strong societal impact and important practical applications in political, economic and social spheres.

Consistent with its larger goal to promote Joint European/International doctorates as a strategic tool for enhancing the global attractiveness of the European Higher Education and Research Area, the specific **objectives of the So.Re.Com.Joint-IDP** are to:

- Provide doctoral training in the field of Social Representations by structured training-through-research in an internationally recognised networked research environment. From the optic of social psychology, it offers a starting point for interdisciplinary dialog as well as an expert forum on the theoretical redefinition of problematic issues and methodological strategies within the specificities of different disciplinary approaches and their applicative value in different organizational and institutional contexts;
- Directly and systematically incorporate a select number of small/medium private enterprises from different countries (France, Italy, Sweden) into the SoReComJointIDP training activities.
- Make research careers more attractive via cooperation between academia, public research centres, and small and medium sized companies that have common research interests and complementary training activities;
- Involve internationally recruited, trained, and monitored early-stage researchers in cooperative trans-national research led by a multigenerational community of scientists, to be catalysts for expertise both in and outside Europe;
- Promote European excellence beyond the boundaries of the European Union. The enlargement to partners from six extra-European countries (Argentina, Brazil, Canada, China, Mexico and USA) represents an effort to disseminate European excellence worldwide, beyond the EU's borders, in synergy with well-reputed scientists and research centres in some non-EU countries of great strategic value for the expansion of the scientific field led by European scientists. The goal is to attract the best early-stage researchers from abroad, encouraging them to undertake their research training in Europe, also in view of closer integration of the European employment market, thus rendering our private sector much stronger in this period of globalization and high competition with extra-European companies.
- Offer - via *one integrated contract* - activities that until now have been funded by several different contracts (Human Mobility Capital, Training Mobility Researchers, Marie Curie Multipartner Organisation Site and Marie Curie Actions) supporting international physical and virtual mobility for early-stage research fellows, International Summer Schools, International Lab Meetings, and international mobility for teaching staff.

3. A physical and virtual networked international joint doctoral campus offering complementary on-line and face-to-face structured training activities.

The *unique combination of a European/International Joint doctoral programme and a scientific network with industry partners* is, in fact, **an integrated physical and virtual campus** where world-class scientists from academia and the public and private sectors and early-stage-researchers cooperate face-to face and on-line "for" and "by" research, coming together to learn, share, create

and disseminate knowledge. We offer a progressive system for training early stage researchers through active research. Research training takes place in international environments, both academic and in industry, and includes specifically designed intensive didactic "stages" in multilingual and multicultural settings. This includes access to the specialised SoReCom "A.S. de Rosa" physical and @-library, meta-theoretical analysis of the literature on Social Representations and Communication, tutoring and co-tutoring for research projects, active participation in International Lab meetings and International Summer Schools, advanced training in multi-methodological qualitative and quantitative design, software for statistical data analysis and results visualization, e-learning activities via interactive video-conferences, training in complementary skills, scientific networking, and active participation in international conferences, etc.
More in details the **key aspects of the didactic formula and training structure** include:

- **Tutoring and co-tutoring triadic system (multiple supervision in different sectors and countries):** all the Early Stage Researchers recruited for the SoReComJoint-IDP and funded for the 3-years entire doctoral training work closely with the project leader and inserted in a group of already trained early stage researchers and post-docs working on an ongoing research project built up over two decades with an enormous effort of work team coordination and assessment by the project leader with the aim to take stock of the scientific field developed in more than 50 years (de Rosa, 2000, 2001, 2013, 2014). The research trainees are in contact with other tutors at the main host institution and with scientists at the institutions chosen for their secondment located in different European and extra EU countries. Taking into account the thematic affinity and areas of expertise, co-tutors also belong to private sector or other socioeconomic actors, so that most of the enrolled researchers receive supervision and didactic feedbacks from a non-academic specialist, thus ensuring a high involvement of the extra-academic sector into training activities.
- **Structured international mobility of both research trainees and teaching staff at the individual and collective levels**, by taking into account that international mobility is only a tool, not a goal in itself. It is just one of the requirements for a European doctorate, and in and of itself is not sufficient.
    - Individual research trainees are required to relocate abroad and work at host institutions for their secondments ***(individual mobility)***.
    - ***Collective mobility*** involves all tutors and a restricted number of other research trainees (enrolled or in the European/International Joint PhD in Social Representations and Communication or in other doctoral programs at the partner Universities or even outside the network) selected for some of the training activities and is achieved during the intensive International Summer Schools and Lab meetings (winter, spring and summer sessions).
- **Integration of physical and virtual international mobility** (see de Rosa and Picone, 2007).
- **Infrastructure and dedicated facilities** at the coordinating university and network universities, including a common web site, allow for flexibility between face-to-face and open distance learning interactive contexts and innovative practices adopted for teaching, tutoring and co-tutoring, network management: worldwide access to common dedicated web platform, as tool for documentation (including access to the specialised SoReCom physical and @-Library, and web-auditorium interactive system (de Rosa, 2014), networking, training and a personalized web-space for monitoring trainees' progress by the three tutors and the members of the International Jury, who are given access to the on-line evaluations of the full report on the thesis and the short article (de Rosa and Picone, 2007). It also allows trainees to rate and provide feedback on training activities.

- **Learning by doing in face-to-face and on-line learning interactive contexts**: Research trainees engage in scientific activities either individually or in small and medium teams and in different contexts to acquire transferable general skills, such as: presenting their research progress during International Lab Meetings and International Summer Schools, use of the web-auditorium, organising small seminars, participating in international conferences, advanced training courses for different statistical software packages, writing joint papers, participating in international networking, planning and updating the on-line timeline work chart, cooperating in meta-theoretical analysis of the specialised literature on Social Representations and Communication, managing data derived from the large bibliographic inventories, contributing to the development of the specialised SoReCom "A.S. de Rosa" @-library created by the SoReCom Joint IDP program director (de Rosa, 2014), etc.. The need for developing both core and wider employment related skills is driven by the goal of making research training of greater relevance for a wider variety of careers both in and outside academia, and internationally and globally more attractive.
- **Vocational Training Modules** supplied by the private sector to provide the research trainees with specific professional skills they wouldn't have experienced in a classical academic context
- Each early researcher and experienced researcher recruited has a **personal career development plan**, which includes a research training contract, time management work chart, IPR agreement, etc., in line with the principles set out in the European Charter for Researchers and the Code of Conduct. Such career development plans will also be reviewed by experts from the private sector, in order to monitor the progresses made from an extra-academic point of view, and to evaluate the level of employability of the young researcher.
- Research at network sites employs a wide range of **both quantitative and qualitative methodologies,** including experimental, observational and non-verbal work, survey research and interviews, focus groups, image-based and textual tools, and specific techniques to obtain data from the various asynchronous and interactive Internet and web environments.

Outstanding scholars inspired by the Social Representation Theory working in various research fields and experts from the public and private sectors interested in the **applied value of such *societal knowledge and the role of communication systems*** are directly involved in the training process. Based on expertise and experience matured in running the European Joint Doctorate since its implementation in 1996 and on management skills proven in previous Marie Curie Multi-Partner organisation sites, they have jointly set the recruitment parameters for early-stage researchers, and participate in the training and monitoring activities.

Private sector is an integral part of the didactic structure, as they contribute to the programme by a) providing specific training modules, b) participating to the co-tutoring of the enrolled young researcher working in a thematic area (like environment) appropriate from the multidisciplinary perspective based on the combination of multiple expertise available in our extra-academic associated partners, c) stimulating research training projects with the academic partners to which the enrolled young researchers will participate and d) hosting early stage fellows for secondment periods. Industry/university cooperation has been in operation in the hard sciences for some time. However, collaboration within a research training network anchored in a European/International joint doctoral programme is an innovation for the social sciences and represents a path forward and a "win-win" situation for all involved.

4. *Scientific Documentation, International Networking and Research Training:* the three main integrated pillars of the So.Re.Com Joint - IDP research environment

The *European/International Joint PhD in Social Representations and Communication Research Centre and Multimedia Lab* is dedicated to research and training needs for both doctoral candidates and highly experienced researchers, individually or in cross-national research teams. Full-time staff is available during the workweek to provide assistance to users. It integrates three main research and research training pillars (see Figure 3):

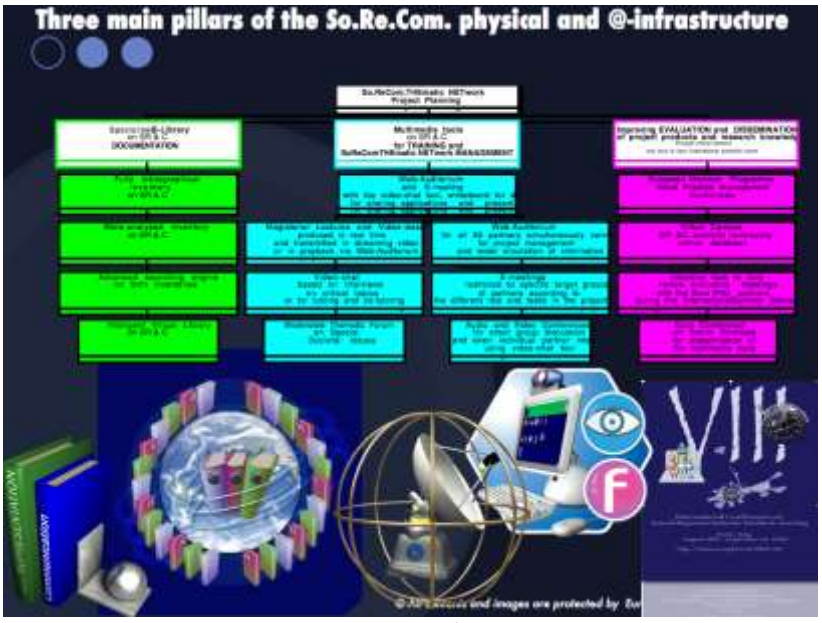

Figure 3. The three main pillars of the European/International Joint PhD on Social Representations and Communication integrated psysical and @-Infrastructure

- **DOCUMENTATION -** The *So.Re.Com. "A.S. de Rosa" @-library* contains (see Figure 4):

  a *comprehensive bibliographical repository* of the literature on Social Representations, currently including almost 10000 references, and a vast and growing collection of bibliographic entries
  a *meta-theoretical analysed repository* of the literature on SR, currently including almost 3000 meta-analysed articles or book chapters;
  an *advanced search engine* hyper-linked with both above-mentioned *repositories*;
  an *Intelligent @-Library* specialising in S.R. & C. that currently holds more than 1000 texts available for online consultation and full text search, as well as hundreds of videos, courses and recorded interviews.

- **NETWORKING:** Its advanced communication and research capabilities not only connect participants with the laboratory but also with the 3000 member world-wide SoReCom Thematic Network and other similarly equipped social science research centres both in and outside Europe. Its web-based system is highly flexible and easily adapted to provide support for long and short term training needs. The SoReCom THEmatic NETwork on-line virtual community includes:

  members' personal and institutional contact information, "individual scientific profiles", and web-services like:
  "news and calendar of scientific events",
  multi-point interactive co-operative research tools,
  on-line conference management system for participant registration, submission of abstracts, papers, power point presentations as well as symposia, thematic sessions, round tables, posters, abstract reviews, information for participants, editing and publishing,
  SoReCom THEmatic NETwork @-NEWS;
  newly designed management service for "Virtual meetings with authors or book presentations".

- **RESEARCH TRAINING:** The European/International Joint PhD in Social Representations and Communication and the So.Re.Com. Joint-IDP integrated "***Physical and Virtual Campus***" includes (see figures 5, 6 , 7 and 8):

  the research trainee's work-plan chart and timeline
  European PhD on S.R. & C. Web-Auditorium multi-point web videoconference interactive system and face-to-face participation in the yearly International Summer Schools and Winter, Spring and Summer Sessions of the International Lab Meetings
  guidelines for developing research trainees' skills in meta theoretical analysis of Social Representations literature and the use of bibliographic *repositories*
  on-line video-lectures in streaming and face-to-face seminars and research workshops
  interactive web-video-interviews with the protagonists in the scientific field
  European PhD on S.R. & C. research trainees' personalized web inventory
  Multiple supervision via face-to-face and distance tutoring and co-tutoring based onquality control and on-line monitoring system including: personalised access to European/International Joint PhD in S.R. & C. research reports and on-line evaluation tools of trainees' research reports at the initial, intermediate and final stages
  On-line tools allowing research trainees to provide "ratings", i.e. feedback on the virtual training activities and those involving physical mobility, etc.

Figures 5, 6 and 7. The research trainee's work-plan chart and timeline and @-learning kit

Figure 8. Quality control and on-line monitoring system for distance tutoring and co-tutoring tools

5. Conclusion: benefits and prospective developments in the MOOCs and OpenupED landscape

In summary, at the network level as well as at the level of individual universities, enterprises, and research centres belonging to the Marie Curie Initial Training Network briefly described in this paper, our So.Re.Com. Joint-IDP programme, as physical and virtual networked international doctoral campus offering complementary on-line and face-to-face structured training activities**,** guarantees as **benefits**:

- world-wide access to common web platform, as tool for information, documentation, networking and training;
- an on-line application process via a web registration system;
- selection of internationally recruited applicants by the European/International Joint PhD Recruitment board;
- structured and complementary on-line and face-to-face research training in an international environment (including training in transferable skills);
- intensive didactic stages in multicultural settings and attractive international co-operative research environment;
- multiple supervision via tutoring and co-tutoring by at least three tutors in three different countries;
- integration of structured individual and collective international physical and virtual mobility;
- personalised web-space for each research trainee with access restricted to the three tutors for evaluation including the thesis (full report and final article);
- a language policy and format for PhD dissertation;
- high tech infrastructure and Lab facilities, integrating the three main pillars for research: documentation, networking and training;
- training process assessment and quality evaluation system by jointly defined and on-line accessible tools and by joint Committee, like the European/International Joint PhD Executive Committee and Quality control board, the European/International Joint PhD Final Jury, etc. also including evaluators external to the network;
- officialisation of the degree;
- active integration in the world-wide SoReCom THEmatic NETwork;
- enhancement of career prospects both in and outside academia thanks to strong partnerships with private enterprises and public research centres**.**

If in this paper we have briefly illustrated how structured and networked training approach has been integrated by the *European/ International Joint Ph.D. in Social Representations and Communication* driven by the three EADTU main goals of promoting *innovation, international curriculum collaboration and leadership* in the process of modernisation of the European Higher Education

system by combining traditional teaching and technology-enhanced learning, we wish to conclude this paper with some final consideration about the positioning of our networked international joint doctorate and **prospective developments in the MOOCs and OpenupED landscape.** It is evident that, if thanks to the complementary and synergic combination of face-to-face and online training supported by blended mobility has attracted a higher number of participants in our training events, not limited to the participation of the restricted number of doctoral research trainees admitted in our program and open to the contribution of invited professors and leading experts even from outside the network (see figure 9, 10, 11) and if most of the learning and teaching materials are worldwide available and can be download free of charge from the dedicated web portal as open educational resources, the target number of the applicants admitted each year for the *European/International Joint PhD in Social Representations and Communication* and those who have been awarded until now (2013) of the joint doctoral degree (see figure 10) is very far from the *massive scenario of the MOOCs and OpenupED landscape.*

Figure 9. The multi-year series of International Summer Schools organised by the European/International Joint PhD in Social Representations and Communication from 1995 to 2013 (http://www.europhd.eu/IntSummerSchools)

Figure 10. The multi-year series of the International Lab Meetings organised by the European/International Joint PhD in Social Representations and Communication from 2005 to 2013 (http://www.europhd.eu/IntLabMeetings)

Figure 9. Participants and invited speakers in the multi-year series of International Summer Schools and Lab Meetings organised by the European/International Joint PhD in Social Representations and Communication

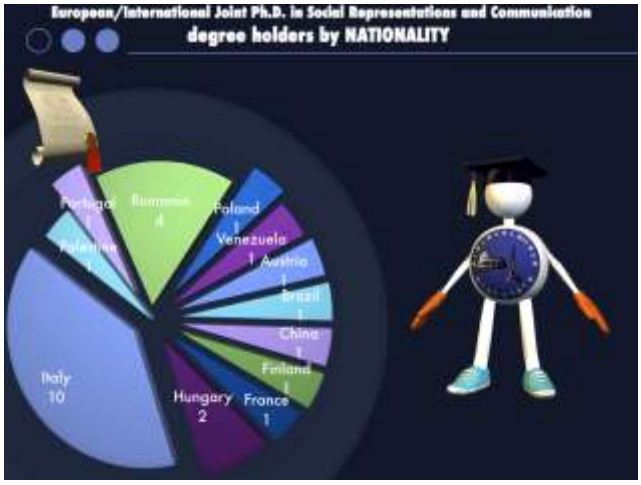

Figure 10. European/International Joint PhD in Social Representations and Communication degree holders by nationalities.

Despite the recent reform in doctoral education claims for a 'critical mass', it remains out of the scope and of the nature of the doctoral training – and in particular of our *European/International Joint PhD in Social Representations and Communication* - a numerical meaning of the critical mass as target of new recruited research trainees and candidates for awarding the joint doctoral degree, especially if we consider the "peak of inflated expectations" of MOOCs, as "gaining currency" entered in the arena of venture capital and mass marketing, more specifically designed at the level of the first two cycles of the higher education (Sharples, Mc Andrew, Welle, Ferguson, FitzGerard, Hirst and Gaved, 2013: 6; see also Glance, Forsey and Riley, 2013).

However prospective developments of our *European/International Joint PhD in Social Representations and Communication* – as well as of other doctoral programs especially those not restricted within the borders of traditional or canonical disciplines, but dealing with new supra-disciplinary fields – envisage the introduction of the MOOCs and *OpenupED landscape* as preparatory and propaedeutic courses aimed at:

a) attracting better oriented and well informed applicants, introducing them into the scientific field even before their application process;
b) improving development needs for lifelong learning among already educated professionals and policy makers;
c) extending public awareness of the scientific field among scientist amateurs at large interested in developing knowledge about societal issues of hot relevance, shaping rewarding educational experiences also outside formal education.

References

Almeida, A. Trindade, Z. Santos, F. (Eds.) (2011) Teoria das Representações sociais - 50 anos, (pp. 491-561) Technopolitik e Centro Moscovici, Brasilia: MEMORES/UERJ, REPSO/UFES, LABINT/UFPE

de Rosa, A. S. (2000). Distance Training of European doctoral training students in meta-theoretical analysis of fully-researched bibliographic corpus. Proceedings of The Wanderstudent 2000. *The Wanderstudent of 1425 revived in virtual reality in 2000? Towards a European Virtual University* (pp. 95-98), Louvain University Press, Louvain.

de Rosa, A. S. (2001). Sistema di co-operazione e formazione a distanza implementato sul sito web dell'European doctoral programme on Social Representations and Communication: verso l'attivazione di una "intelligent virtual library". (System of distance cooperation and training on the website of the European doctoral programme on Social Representations and Communication: towards launching an "intelligent virtual library". In M. Olivetti Belardinelli (Ed.), *Valentini Day* (pp. 99-109). Roma: Edizioni Kappa.

de Rosa, A. S. (2004 a). An idea that became an Institution: the European Doctorate on Social Representations and Communication. *Marie Curie Fellowship Association Annals*, vol. III. retrieved April, 10 2009 from: http://www.mariecurie.org/annals/index.html

de Rosa A.S (2004 b). Institutional recognition and didactic & training accreditation within three different scenario's (E.U., Ministries, Universities): the case of the European PhD on Social Representations and Communication. In European Commission Directorate General Education and Culture. *E-Learnng Initiative Cooperative-European Virtual University* (C-EVU Final report contribution WG4 ACCREDITATION edited by J.Van den Branden, C. Moreau, A.S de Rosa, A. Lapallainen, A. Opsomer) (http://www.cevu.org)

de Rosa, A. S. (2004c). Quality assurance in Higher Education: the case of the European PhD on Social Representations and Communication and its contribution to the c-EVU-project. Invited intervention at the *International Seminar Bologna And The Challenges of E-Learning And Distance Education The Contribution Of Non-Classical Learning And Teaching Forms To The Emerging European Higher Education Area* Ministerie van de Vlaamse Gemeenscha in co- operation with the University of Ghent (June 3-5 2004). retrieved July, 10 2005 from: http://www.bolognabergen2005.no/EN/Bol_sem/Seminare/040604-05Ghent.htm

de Rosa, A. S. (2006). Social Representation and Communication Thematic Network: A case study for monitoring the development of a scientific community. In I. Labhrainn, C. McDonald Legg, D. Schneckenberg & J. Wildt (Eds.), *The Challenge of eCompetence in Academic Staff Development* (pp. 49-57). Galway: CELT, NUI.

de Rosa, A. S. (2008a). "New Forms of International Cooperation in Doctoral Training: Internationalization and International Doctorate: One Goal, Two Distinct Models". *Higher Education in Europe,* .Journal "*Higher Education in Europe*", 33 (1), 3-25. available on : http://www.europhd.eu/html/doc/derosa_2008_higher_education_in_europe.pdf

de Rosa, A.S. (Ed.) (2008b) Special Issue "Looking at the History of Social Psychology and Social Representations: Snapshot views from two sides of the Atlantic", *Rassegna di Psicologia, 2,* p. 217.

de Rosa, A.S.(2009a). Promoting Joint European/International Doctorates in a global scenario: Opening the European PhD on Social Representations and Communication to the World. In M. Gaebel, L. Purser, B. Wächter, L. Wilson (Eds.) *Internationalisation of European Higher Education. An EUA/ACA Handbook*, (HBI 1 04 09 11 C.2.4. pp. 1-35), Stuttgart: RAABE.
available on : http://www.europhd.eu/html/doc/eua_aca_hndbk_2009_derosa.pdf

de Rosa, A.S.(2009b). The So.Re.Com. EuroPhD World: Combining Partnerships with Innovation. In A. Klucznik-Tòrò, A. Csépe, D. Kwiatkowska-Ciotucha (Eds.) *Higher Education Partnership, Innovation,* IHEPI, (pp. pp. 203-212), Budapest: Publikon Publisher/IDResearch Ltd.

de Rosa, A.S. (2010a). The Joint European/International Doctorate on Social Representations and Communication: an experience anticipating the Bologna process. Task Force 4 "Development and administration of Joint Programmes at Doctoral Level" of the Joiman EC-funded Project, retrieved April, 20 2010 from: https://www.joiman.eu/activities/Lists/DevelopmentActivities/DispForm.aspx?ID=16&Source=https%3A%2F%2Fwww%2Ejoiman%2Eeu%2Factivities%2Fdefault%2Easpx

de Rosa, A.S. (2010b). Internationalisation of collaborative doctorates and Joint International Doctorates: requirements and guidelines for each distinct model. In *Higher Education Partnership and Innovation*, IHEPI, 8 pp. 219-242), Budapest: Publikon Publisher/IDResearch Ltd. http://www.europhd.eu/html/doc/derosa_ihepi2010.pdf

de Rosa, A.S. (2010c). The Joint European/International Doctorate: a strategic tool for enhancing the worldwide institutional collaboration for research training. *IIENetworker International Education in Europe*, Fall 2010 issue: 28-29.

de Rosa, A.S., (2010d). Mythe, science et représentations sociales, In D. Jodelet and E.Coelho Paredes, (Eds), *Pensée mytique et représentations sociales,* (pp. 85-124) Paris: L'Harmattan.

de Rosa, A.S. (2011a) 1961-1976: a meta-theoretical analysis of the two editions of the "Psychanalyse, son image et son public", in C. Howarth, N. Kalampalikis, P. Castro (Eds.) A half century of social representations: discussion on some recommended papers*, Special Issue, Papers on Social Representations*., vol. 20, Issue 2, Retrieved September 15, 2013 from : http://www.psych.lse.ac.uk/psr/PSR2011/PSR2011_Issue_2.htm

de Rosa, A.S., (2011b) 50 anos depois: a 'Psychanalyse, son image et son public' na era do Facebook. In A. Almeida, Z. Trindade, F. Santos (Eds.) Teoria das Representações sociais - 50 anos, (pp. 491-561) Technopolitik e Centro Moscovici, Brasilia: MEMORES/UERJ, REPSO/UFES, LABINT/UFPE.

de Rosa, A.S., (2011c). De Nouvelles Formes de Coopération internationale dans la formation doctorale: Internationalisation et doctorat international: un objectif, deux modlèes distincts. In V.Baidenko (ed.) *The Bologna Process: resume of the decade,* Ministry of Education and Science of the Russian Federation, Institute for Higher Education Quality (pp.357-363), Moscow

de Rosa, A.S. (2012). La psicoanalisi, la sua immagine, il suo pubblico: 1961-2011. Compiere 50 anni nell'era dei social networks. In I. Galli (Ed.) Cinquant'anni di Rappresentazioni sociali. Bilanci e prospettive di una Teoria in continuo divenire,(pp. 59-101) Milano: Edizioni Unicopli.

de Rosa, A.S. (Ed.). (2013). *Social Representations in the "Social Arena"*. Routledge, New York - London, 1-63.

de Rosa, A.S. (2013a). Taking stock: a theory with more than half a century of history. Introduction to: A.S. de Rosa (Ed.), *Social Representations in the "social arena"*. (pp. 1-63.) Routledge, New York – London.

de Rosa, A.S. (2013b). Research fields in social representations: snapshot views from a meta-theoretical analysis In A.S. de Rosa (Ed.), *Social Representations in the "social arena*". (pp. 89-124), Routledge, New York – London

de Rosa, A.S. (2014) The *So.Re.Com. "A.S. de Rosa" @-library*: a digital tool for integrating scientific documentation, networking and training purposes in the supra-disciplinary field of Social Representations and Communication, in Mehdi Khosrow-Pour (Ed.) *Encyclopedia of Information Science and Technology,* Third edition. (List of Topics: Digital Libraries, Digital libraries and humanities, Institutional repositories.)

de Rosa, A.S., Picone, M., (2007). The European Ph.D. on Social Representations and Communication: Integrating Virtual and Physical Mobility via the European Ph.D. Web-Auditorium**.** In Boonen, A., Van Petegem, W.,(Ed.) European networking and learning for the future (pp. 49-57) Garant: Antwerp, Belgium.

Farr, R.M. Moscovici, S. (Eds.). (1984). *Social Representations*. Cambridge, UK: Cambridge University Press.

Galli I. (Ed.) (2012) Cinquant'anni di Rappresentazioni sociali. Bilanci e prospettive di una Teoria in continuo divenire, Milano: Edizioni Unicopli.

Glance, D.G. Forsey, M. and Riley, M. (2013) The pedagogical foundations of massive open online courses, *First Monday*, retrieved from: http://firstmonday.org/ojs/index.php/fm/article/view/4350/3673 on October 27, 2013.

Jodelet, D. (Ed.). (1989). *Les représentations sociales*. Paris: Presses Universitaires de France

Jodelet, D. (2009). Rappresentazioni e scienze sociali: incontri e rapporti reciproci. In A. Palmonari, F. Emiliani (Eds.). *Paradigmi delle Rappresentazioni Sociali* (pp. 253–282). Bologna: Il Mulino.

Moscovici, S. (1961/1976). *La psychanalyse, son image et son public.* Paris: Presses Universitaires de France.. Engl. Transl. (G. Duveen, Ed.) *Psychanalysis: Its Image and Its Public*, Cambridge: Polity Press, 2008. Italian Transl. (A.S. de Rosa, Ed.) *La psicoanalisi, la sua immagine, il suo pubblico ,* Milano: Edizioni Unicopli.

Moscovici, S. (2000). *Social Representations: Explorations in Social Psychology.* Cambridge: University of Cambridge.

Moscovici, S. (2012) . Saggio sulle rappresentazioni sociali e le minoranze etniche. In I. Galli (Ed.) Cinquant'anni di Rappresentazioni sociali. Bilanci e prospettive di una Teoria in continuo divenire, (pp. 147-168) Milano: Edizioni Unicopli.

Moscovici, S. (2013). *Le scandale de la pensée sociale*. Paris: Editions EHESS.

Palmonari, A. Emiliani , F.(Eds.) (2009). *Paradigmi delle Rappresentazioni Sociali* (pp. 253–282). Bologna: Il Mulino.

Rosewell, J. (2013) E-xcellence/OpenupED Quality benchmarks for MOOCs, draft 15 October 2013 distributed at the Conference *"Transition to open and on-line education in European universities"* (Paris 24th-25th October 2013)

Sharples, M. Mc Andrew, P. Welle, M. Ferguson, R. FitzGerard, E. Hirst, T. and Gaved, M. (2013) Innovating Pedagogy 2013, Open University Innovation Report 2, Milton Keynes, UK: The Open University.

Uvalic-Trumbic, S. and Danile, J. (Eds.) (2013) *A Guide to Quality in Online Learning*, Dallas, Tx: Academic Partnerships (http://academicpartnership.com).

Williams, K. Kear, K. and Rosewell, J. (2013) Quality Assessment for e-learning: a benchmarking approach (2nd ed.) Heerlen, The Netherlands: European Association of Distance Teaching Universities (EADTU) (available online: http://e-xcellencelabel.eadtu.eu/tools/manual).

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Transition to open and flexible learning in traditional national university

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Abstract

University of Ljubljana is traditional "national" university with 23 faculties and 3 arts academies. It ranks among the biggest universities in the world scale and has for a long time resisted changes and innovations concerning innovative pedagogies and transition to technology based teaching and learning as well as the possibility of distance learning. Recent developments on the global education market and in Slovenia have forced such an inert institution to start thinking about transition to more open, innovative, and flexible learning approaches.

As traditional distance learning courses are not yet acceptable at the moment, some blended approaches based on virtual learning environments and other ICT supported tools and services seem to be suitable for the first steps in this direction. Due to heterogeneity of the institutions, covering a wide range of educational fields, from art academies across the humanities and social sciences to engineering and science, high degree of autonomy of the institutions, and different levels of penetration of ICT support into teaching and learning in different institutions, it is not possible to introduce some uniform solution for all of them. Therefore, there is a need to find a way that takes into account the specifics of each participating institution and that will bring synergies as a result of being part of a big university.

The first step on this way is a survey about the state of the art in e-learning on the faculties and academies and about their plans for the future. The presented results will provide the basis for the next phase of the transition.

Keywords: transition, traditional university, open learning, virtual learning environment, ICT

Introduction

University of Ljubljana, founded in 1919, was the first and for a long time the only university in Slovenia. It is traditional national university with 23 faculties and 3 arts academies. With more than 51.000 graduate and postgraduate students and more than 4000 higher education teachers it ranks as a very large university.

For a long time it has resisted changes and innovations concerning innovative pedagogies and transition to technology based teaching and learning. Recent developments on the global education market and the emergence of new higher education institutions in Slovenia, the reduced size of enrollment generations due to demographic trends, changes due to Bologna process, and finally economical crisis in the country have forced even such an inert institution to start thinking about transition to more open, innovative, student centered, and flexible learning approaches.

As traditional distance learning solutions are not acceptable at the moment, some blended approaches are more interesting for many courses in different study programs and especially in commercial shorter courses for professional development. A starting point towards common organizational model could be different ad hoc e-learning solutions developed independently at the individual faculties.

There were several initiatives from academies and faculties to start some joint activities in the e-learning field on the level of the university in the past, but it was not possible to find common goals because of heterogeneity of the institutions covering a wide range of educational fields, from art academies across the humanities and social sciences to engineering and science. Another reason was very different level of development in the use of ICT in teaching at faculties and academies and to great extent also the lack of financial resources that are needed to run such activities.

The developments in higher education in Europe and elsewhere has contributed to the fact that in the beginning of this academic year the vice-rector invited the representatives of the faculties and academies that have so far worked in this field at individual institutions and established a committee for the development of e-learning at the University of Ljubljana.

The committee started to meet regularly, to analyze the situation in individual institutions, to present examples of good practice and to seek opportunities for cooperation and joint activities. An important impetus for these activities was also the visit of the representatives of the European Association of Distance Teaching Universities (EADTU) at the University of Ljubljana in December 2012. They prepared a seminar where they presented the activities of the Association and invited our University to become a member of this Association and to participate in its projects.

The members of the committee have soon realized that before the planning and implementation of major joint activities they have to find out more detailed, what is the situation on the individual faculties. The first step in this direction is a survey about the state of the art in e-learning on the faculties and academies. For this reason a questionnaire was sent to the vice deans for study affairs at all 26 member institutions.

The results of the survey confirmed that the differences between faculties and academies are big.

Let's look at the results of the survey more detailed.

Overview of the current situation

When we asked for the current situation regarding the use of online learning environments and other ICT tools for teaching and learning support, majority of institutions (42%) reported, that they have an online classroom and that individual teachers offer there some study materials for their students. One third of the institutions offer individual courses partially carried out in the online virtual learning environments (i.e. blended learning). But there is still an academy where no online activities or use of ICT were detected and three other institutions only reported some activities from individual professors, which are not supported and coordinated by the academy or faculty.

The results also showed that in 19% of the institutions only some individual professors use online learning environment, in 35% institutions more than half of teaching staff, and only in 3 institutions all of them use any type of online learning activities in their teaching.

Technical support for teaching staff and for students for the use of virtual classrooms is organized in different ways. Only in 31% of cases it is offered by technical specialists for this area, in 37 % by ICT maintenance staff. In all other cases it is offered by teaching assistants, by some enthusiasts or there is no support at all. The situation with the pedagogical and organizational support is even worse. Only one faculty has special department for online teaching activities and in three other faculties teaching staff has some support in their departments or by the faculty management. In all other cases it is left to the professors themselves to prepare learning contents, to organize, and to coordinate activities in online learning environments.

We were also interested to what extent, according to vice deans, their students use online learning facilities where they are available and what is their attitude towards online learning environment. Half of the respondents reported that their students have to do part of their coursework in the virtual learning environments. Another thirty percent estimate that their students use online tools just for access to different learning resources, prepared by teaching staff. The rest have no information about the use of ICT by their students. All respondents agreed that students are interested for more intensive use of appropriate technologies in teaching and learning.

Planning future activities

As the academies and faculties are relatively independent as regards decisions about organization of study and pedagogical innovations, it is very important for the committee to find out what will be the short-term and medium-term developments in this filed.

More than 30% of the institutions reported they are already active in this field and they will continue at the same pace. The second third of the faculties plan to intensify their efforts to offer more activities online and to improve quality of their work in this field. Most of the others will encourage and support their teaching staff to work. Only one academy is not interested for any activities in this field in the medium term and one claims that their activities are slowed down due to limited financial

resources. Main activities, planned for the next academic year, are updating or extending their software solutions for virtual learning environments (32%), extending the use of e-learning environment for some distance learning activities (15%), and integrating different services in the cloud, offered by our national academic and research network (ARNES), into their own virtual learning environment (15%). All other institutions will not be able to invest substantially in the online solutions because of limited financial resources, resulting from the recession in our country.

According to the respondents in the survey, the main reasons for the difficulties in introducing e-learning into teaching are financial constraints (62%), lack of experiences for organizing e-learning (46%), lack of appropriate knowledge and skills to prepare appropriate learning materials and activities in the online classroom (27%), and lack of motivation to work in the e-environment (19%). A substantial number of vice-deans expect more support from the rector and his management team.

We asked our respondents how would more intense and more frequent use of online technologies and other ICT support affect the quality of teaching and learning in their institution. Surprisingly high percentage (62%) replied that use of virtual learning environment and other active forms of study with ICT support would increase teachers' workload, but would also substantially improve the quality of teaching and learning. Much less of them estimate that the impact of web technologies on the efficiency of learning would be difficult to judge. One of the respondents even expects that more intensive use of ICT in teaching could have a negative impact as more students might cease attending traditional lectures.

Faculties and academies have a very reserved attitude towards distance education. 58% of them believe that this is either inappropriate or they have not yet considered this form of teaching. Only 2 institutions planned some form of distance learning for their students already. But there is considerable interest for blended learning solutions, where part of the study activities is performed in a traditional way and just a part of them on distance, using virtual learning environment.

There is a need for more intensive collaboration between faculties and academies in the field of e-learning. We asked representatives of these institutions, what kind of cooperation they would suggest for the future.

Most of them are interested for the exchange of experiences. This could be realized with meetings, working groups, workshops, conferences, and training courses, where participants could present their experiences about the organization of e-learning activities, preparation of learning materials, and the use of ICT in teaching and training. Especially institutions, which have already developed such resources, could help those, who have just started or have no experiences at all at this moment.

Although the faculties are of relatively autonomous and independent in carrying out their study programs, at least with elective courses, we have noticed more willingness for cooperation. Therefore, a unified technology solutions could help to improve the cooperation between faculties and could facilitate the students to select from a comprehensive list of elective courses. There were also some suggestions to set up a central repository for educational resources, offered to all students of the University of Ljubljana. It is evident that academies and faculties expect some decisive moves from the rector and his team in setting up some joint elements of the system for e-learning of the University of Ljubljana.

International collaboration

There is a fairly well-established belief that collaboration with other institutions on a national and international level, across Europe and even worldwide, can increase motivation for the introduction of innovative approaches and new technologies into teaching and learning. Active participation in the association such as EADTU represents such a possibility for our University.

Only three of the institutions are not interested for participation in the projects on e-learning in higher education. Among the majority of them, who are interested, 8 of them have doubts that they could actively participate, as they do not have qualified staff to do so.

Another area of cooperation would be in the joint development or purchase of software tools and environments for e-learning. Very often it would be reasonable to set up and maintain such environments jointly as it can reduce the operational costs and improve reliability and availability of such environments. Especially tools and environments that are more generic by nature, like learning management systems, could be offered centrally, for all academies and faculties and their students. It is very expensive and in efficient if each of the faculties and academies sets up and maintains such services. Many of them themselves even do not have appropriate human resources to establish and maintain these environments.

Expectations regarding the role of management

What the respondents in our survey expect from the leadership of the University?

As we expected the most important role of the management is coordination of all activities in the process of transition to ICT supported open learning, especially all joint activities that were planned by the faculties and academies. Participants expect that the management will provide funding for the joint infrastructure, such as hardware, software and communication support for essential services in virtual learning environment. Many participants expect also organized education and training for all profiles of staff, which is supposed to take part in the process of transition. Some of them mentioned also support and more flexibility in accreditation procedures for open and distance learning study programs.

Practically all the participants in the survey mentioned that so far most of the activities connected with e-learning as well as with open and distance learning had not enough support from the management at the faculties neither on the university level. They claimed that for more energetic campaign teaching staff expects at least minimal financial stimulation and consideration of efforts in the above mentioned activities in the habilitation process or to get promotion at work.

Conclusions

Based on the results of the survey we will in the near future identify the possible ways for developing a common organizational model for the university and modalities of collaboration among members of the university in this process.

From the results of the survey and from our discussions with the representatives of the member institutions we found that they pay much attention to infrastructure (i.e. setting up servers and various services), but with less emphasis on the didactic and organizational aspects. In the report of a workshop *The Future of ICT in the Knowledge Society*, authors (Punie et al., 2006) stated that "ICT supported learning is more likely to be successful if it is accompanied by social and institutional change in educational setting". They claimed that social innovation and social engineering distinguish Finnish model of innovation, which has proved to be very effective, from the others. These findings need to be considered in the next stages of our development, especially in the education of the personnel responsible for the development and all the authors study materials and learning activities

Another important element in the development of student centered open learning environment is personal learning environment - PLE (Attwell, 2007). PLE is created by student herself and is suitable for scaffolding learning activities by means of ICT, especially functionalities offered by Web 2.0 technologies (Johnson & Liber, 2008). Wilson et al. (2009) advocate parallel use of personal learning environments, created by students, and learning management systems, offered by universities, as modern constructivist approach to education implies the necessity of merging features of both types of systems.

We also expect a lot of information, advice and examples of good practice from colleagues in the EADTU association, since many of them have many years of experience. Through active involvement in joint projects we will do our best to contribute our share to the developments in open and flexible teaching and learning in higher education.

References

Attwell, G. (2007). Personal Learning Environments - the future of eLearning? *Lifelong Learning*, *2*(January), 1–8.

Johnson, M., & Liber, O. (2008). The Personal Learning Environment and the human condition: from theory to teaching practice. *Interactive Learning Environments*, *16*(1), 3–15.

Punie, Y., Cabrera, M., Bogdanowicz, M., Zinnbauer, D., Navajas, E. (2006). The Future of ICT and Learning in the Knowledge Society. Report on a Joint DG JRC-DG EAC Workshop, Seville, 20-21 October 2005, EUR 22218EN. Technical Report, European Commission - Joint Research Centre - Institute for Prospective Technological Studies.

Wilson, S., Liber, P. O., Johnson, M., Beauvoir, P., & Sharples, P. (2009). Personal Learning Environments : Challenging the dominant design of educational systems. Journal of e-Learning and Knowledge Society-English Version, 3(2).

Rühl Paul

Why (and How) Traditional Universities Profit from Cooperation in Online-Teaching

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Summary

Virtuelle Hochschule Bayern (Bavarian Virtual University; www.vhb.org) is an institute set up by the nine universities and the 17 universities of applied sciences of the Free State of Bavaria. Like its member universities, the VHB is financed by the Bavarian Ministry of Higher Education (Bayerisches Staatsministerium für Wissenschaft, Forschung und Kunst).

By means of the VHB, Bavaria addresses several major issues:

- The growing overall demand for higher education with growing student numbers at least until 2020,
- The urgent need to expand lifelong learning and to open the universities accordingly,
- Growing student diversity,
- The need for more flexible study programmes, and
- The consequences of demographic change, leading to substantial population growth in some parts of the state while other regions face a serious decline

The VHB provides online courses with an equivalent of two to six credit points by ECTS which the member universities can integrate into their courses of study. The VHB helps its member universities to enlarge and enrich their programmes, and it helps the students to organize their studies more flexibly. This is especially important for the growing number of nontraditional students. In the academic year of 2012 / 2013, the VHB had 113,000 course enrolments by approximately 43,000 individual students, so that one in eight Bavarian students was a VHB user.

The VHB provides a model for modernizing universities by the transition to more open and flexible studies. It can also serve as an example for good practice in quality assurance and in the management of inter-university cooperation – all this in times of ever more strained public budgets.

The basic working principles of the VHB are:

- To stimulate and to support cooperation in online teaching among Bavarian universities,
- To develop and offer courses tailored to the needs and the actual demand of the member universities, with an elaborate quality management.
- To focus on blended learning at the macro level of the course of study, not at the micro-level of the single course, lecture or seminar, giving priority to asynchronous forms of

communication, thus facilitating the import and export of online courses among all member universities.

- To finance the production of courses as well as the operation of these courses, especially the online tutoring of the students.

Distance teaching at university level in Germany, **higher education in Bavaria and online teaching in higher education**

Due to multiple factors, distance teaching at university level plays a minor role in Germany compared with e.g. North America, Australia or the Nordic countries. To mention just two of these factors: first, there is hardly any place in Germany from which you would have to travel more than 50 km to the nearest university. Secondly, there are no student fees, so there is no competition between expensive face-to-face tuition and more affordable distance education, as in some parts of the world. The FernUniversität in Hagen is **the** German distance university offering complete courses of study and degrees, and the demand for additional courses does not seem high enough to justify the investment in a second large-scale German distance university[75].

With a population of some 12.5 million, Bavaria is the second largest of the 16 German states (Länder). Bavaria currently has more than 330,000 students[76] and feels the need to increase the proportion of its population with a university degree. The VHB is part of Bavaria's strategy to enhance and improve the possibilities to attend and successfully complete higher education.

According to the German constitution, all matters of education, from school to university level, lie within the exclusive jurisdiction of the Länder, not of the federal government. An amendment to the constitution which would permit the federal government to finance universities permanently has been discussed, but so far a solution which would get the necessary two-thirds majority in parliament has not been found.

In general, the federal structure of Germany results in a large variety of approaches to most aspects of education, including online teaching and learning at university level[77]. Most of the states leave the strategy for e-learning completely to their universities, and by far not all German universities have developed a comprehensive strategy for the use of information technology and multimedia in teaching and learning. Bavaria is among the minority of German states which actively motivate and support cooperation between universities in online teaching, and it is the only German state financing online teaching across university borders.

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75 „Deutsche Universität für Weiterbildung" in Berlin can serve as an example for the difficulties a new competitor in the market has to face. Cf. http://www.schwertfeger-mba-channel.com/2013/erste-deutsche-weiterbildungsuni-gescheitert/

76 Cf.https://www.statistik.bayern.de/veroeffentlichungen/download/B3110C%20201222/B3110C%20201222.pdf.

77 For a survey of the activities of the German states cf. Bremer et al. (2010).

Blended learning at the macro level

To make possible online teaching and learning across university borders, i.e. to facilitate the "import" and "export" of courses between universities, it is pivotal that these courses work completely online, without any face-to-face components except for the final examination. If students have to take part in face-to-face meetings, you cannot expect them to travel for hours. Therefore, online courses with face-to-face elements can be used jointly only by neighbouring universities.

"Blended learning" is interpreted by many experts as the combination of face-to-face teaching and web-based teaching within a single course. We call this type of blended learning "**micro-level** blended learning". While micro-level blended learning has many pedagogical benefits, it does not necessarily make full use of the economic possibilities of e-learning. Teachers who use single e-learning elements in their courses do not necessarily gain additional teaching time, and micro-level blended learning is hardly a remedy e.g. against the shortage of lecture rooms many universities face. For the students, this type of blended learning offers rather limited flexibility. In many cases, especially when the web-based elements are exploited by only one professor at only one university, micro-level blended learning seems to offer higher quality or added value only at additional costs.

By contrast, the VHB focuses on **macro-level** blended learning with the aim of offering high-quality teaching with intensive tuition in a cost-effective way. By macro-level blended learning we understand the integration of single online courses into courses of study or curricula which otherwise (and for the most part) consist of "traditional" face-to-face courses (seminars, lectures et cetera). Thus, students can earn some credits in online courses, but not their complete degree. This combination of face-to-face courses with courses that are delivered completely online (possibly with the final examination being held face-to-face) allows the students much more flexibility than micro-level blended learning. At the same time the students enjoy all the benefits of a traditional face-to-face university. Therefore, macro-level blended learning minimises the dangers of social isolation sometimes associated with e-learning.

Moreover, if online courses are developed once at one university, but used at several universities, the comparative cost effectiveness is obvious. Thanks to macro-level blended learning, universities can "import" courses from other universities, including the support of their students by tutors from the "exporting" university. In contrast to micro-level blended learning, this kind of import also helps universities to compensate a possible lack of teachers as well as room shortages.

In its initial phase, the VHB experimented with micro-level blended learning courses. Students taking part in these courses generally appeared to be satisfied with the face-to-face elements, but an unknown (and for obvious reasons unidentifiable) number of students did not choose to take part because these courses did not offer the students the flexibility they needed or desired. Moreover, from the point of view of the university the import of blended learning courses is hampered by the fact that the importing university has to provide staff and rooms for the face-to-face activities. Several member universities of the VHB have stated explicitly that for them blended learning courses would not be a desirable and helpful contribution by the VHB.

Macro-level blended learning combines the social and pedagogical benefits of face-to-face teaching and learning with the economic advantages of online teaching and learning, and it is therefore one of the responses to the challenge of growing student numbers in times of strained public budgets. The

cost effectiveness of macro-level blended learning, in turn, is the major motivation for the Bavarian Ministry of Higher Education to finance the necessary structures and the development of new content.

Programme structure

In the summer term of 2013, the VHB offered 303 courses in 14 fields of study. A further 55 courses are currently in preparation, and the two calls for proposals in 2013 will result in an additional 60 courses to be developed. Figure 1 (below) shows the details of the programme structure by fields of study.

Sometimes the question of the "onlineability" of different subjects is raised. Within the VHB, successful online courses have been developed for various subjects and with different pedagogical concepts. Of course, some subjects appear to be especially suitable for online treatment (as opposed to traditional paper-based distance education) because of the additional pedagogical benefits which electronic communication and multimedia elements provide. On the other hand, the economic benefits of offering courses online instead of paper-based or face-to-face solutions can be just as significant and important. The VHB bases its decisions on whether to develop and offer an online course on pedagogical as well as economic considerations.

Field of study	**Courses offered summer 2013**	**Courses in preparation**
Business Informatics	18	0
Business Sciences and Economics	35	12
Computer Science	11	2
Cultural Studies	8	2
Engineering	17	2
Health Care / Health Management	7	1
Introductory Courses	0	1
Key Skills	27	3
Languages	31	7
Law	44	12
Medical Science	53	8
Natural Sciences	2	0

Social Sciences	1	1
Social Work	19	1
Teacher Training	30	3
Total	**303**	**55**

Figure 1: Courses summer term 2013

Because of the large variety of fields of study with their different traditions, there is a corresponding variety of pedagogical approaches in the VHB's courses. You will find virtual seminars with intensive student cooperation, there are online lectures with tutorials, and there are virtual laboratories. In many courses students deliver papers. Self-study environments play a minor role, as the VHB puts individual interaction at the centre of its concept.

Synchronous communication places severe limits on flexible start-up and progression, and it limits the students' possibilities to organize their studies flexibly. Therefore, teaching and learning in most of the VHB's courses are based on asynchronous forms of communication.

The courses of the VHB are developed at the individual member universities; there is no central production unit. Generally, within the universities (or within their institutes which provide online education) there is a clear division of labour. Content is usually provided by professors, who then employ skilled staff for the transformation of that content into an online course. In some cases (mostly at universities of applied sciences), professors also take part in the technical implementation.

The process of choosing new courses for the programme of the VHB consists of two main steps: first, a call for proposals, and then a call for tender. Detailed information about this process can be found on the VHB's website. In short, the process is organized as follows:

Call for proposals: Twice a year, member universities are invited to submit proposals for new online courses. For each course the interested universities form a consortium with a consortium leader. Proposals by only one university are not eligible, with the rare exception of cases where a subject is taught at just one Bavarian university, e.g. veterinary medicine. Proposals for such subjects are eligible if they are submitted in cooperation with a university outside of Bavaria.

The proposals are submitted in a standardised form which can be downloaded from the VHB's website[78]. There must be a demand for the given course at a minimum of two member universities, and the online course, once it is completed, must replace part of the face-to-face teaching at the universities of the consortium, so that an actual decrease in the face-to-face teaching load in the given subject will be achieved at these universities. The consortium must define the curriculum or curricula (courses of study) in which the new online course will be employed, and they must give an estimate of the number of students they expect to participate per academic year.

The consortia and their courses do not function as "closed shops". All member universities are

78 Cf. http://www.vhb.org/ausschreibung

entitled to utilize the courses, and students of all member universities can attend the courses free of charge[79], no matter whether their university is a member of the given consortium or not. Students from universities outside a consortium are advised to make sure whether their home university will acknowledge credit points earned in such courses before they enrol.

The proposals are examined by the VHB's Programme Committee. The Programme Committee selects the proposals most suitable for funding and passes its recommendations to the Steering Committee. The Programme Committee does not necessarily favour the proposals with the highest demand, i.e. with the largest number of expected participants. Special attention is paid to proposals for courses which make it possible to establish new curricula at member universities, e.g. master programmes at universities of applied sciences.

On the basis of the recommendations of the Programme Committee, the Steering Committee decides which proposals to fund. The consortia supporting those proposals are then invited to submit detailed descriptions of the courses.

Call for tender: These descriptions are the basis for the next step of the process, the call for tender. Generally (but not necessarily) bidders make a bid both for the production of the course and for the tutorial guidance of the students. The production of standard courses with an equivalent of two hours per week and semester (mostly 3 ECTS credit points) can be funded with up to 40,000 €. Costs exceeding this sum must be borne by the consortium. Up to now, there have hardly been any such instances.

For the majority of proposals one bid is submitted by a member of the given consortium, but there are instances where competing bids are made. There are also instances where the only bid comes from a university outside of Bavaria.

The call for tender is published on the VHB's website. In addition, it is distributed to organisations similar to the VHB in other parts of Germany and the German-speaking countries. The VHB encourages the use of courses which have been developed at universities outside of Bavaria; it is the policy of the VHB not to fund the design and development of courses if a suitable course for the given purpose exists elsewhere and a license for the VHB can be obtained.

In order to be accepted as the producer of a proposed course, bidders have to conclude a contract with the VHB where, as a rule, they transfer to the VHB the exclusive right to use the course in online form. In cases where the VHB is not the exclusive financer, appropriate arrangements are made.

The producers further commit themselves to arrange personally for the operation of the course (i.e. to provide tutorial services and guidance) for at least five years. Should the producer not be in the position to operate the course any more, the VHB can transfer the operation to somebody else. Up to now there have been few instances where a transfer of the operation of a course has been necessary. In most of these cases the operation of the course was taken over by another professor from the producer's university.

All members of a given consortium have the right to take part in the quality assurance process during

79 Persons interested in lifelong learning can take part in the courses if they pay a fee, but his plays a minor role.

the production of the course. They are encouraged to do so, especially by taking part in milestone meetings where the state of the work in progress is presented and discussed. Members of the VHB's project management take part in these meetings. Thus, all members of a consortium can make sure that the final course will meet their expectations; problems can be solved at the earliest possible stage.

Intensive tutorial guidance

Learning is to a large extent based on interaction. In comprehensive online courses without sufficient interaction, i.e. without communication between the participants and a teacher or tutor, a considerable dropout rate is to be feared. Therefore, the VHB funds not only the development of courses, but also their regular operation. Moreover, the idea of state-wide utilization of the courses, i.e. of the "import" and "export" of courses among universities, would not be viable if there was no funding for the tutoring of students from universities other than the university of the course provider. There must be a sufficient incentive for this additional teaching effort. Therefore, the VHB funds the tutorial guidance of the students in standard courses with 25 € per student. This money is paid if the student has taken part in the final examination.

This regulation has been questioned as there are instances where a student makes intensive use of tutorial guidance but does not take part in the final examination. On the other hand, there are instances where a student merely enrols but does not take part in the course, so mere enrolment would be unsuitable as an indicator for the amount of tutorial work. The most objective measurement of the tutorial work spent on every student would be by tracking the student's online activities, but this would infringe laws on data privacy protection. The present regulation appears to be acceptable because it also applies to students of the teacher's own university, so that this university gets additional funding.

The question has also been raised whether succeeding in passing an examination rather than the merely participating should be the criterion for the funding of tuition. This idea was rejected after thorough discussions in both the Programme Committee and the Steering Committee, because this solution might be interpreted as an incentive for course providers to offer "easy" examinations. This, in turn, would not be in accordance with the VHB's efforts in quality assurance.

Quality management

Evaluation and quality assurance play a central role in the VHB's overall concept. The development of every new course is closely supervised by experts from the consortium which submitted the proposal for the course, and by the project management of the VHB Office. Together, they approve the new course for inclusion in the VHB programme.

Students evaluate their courses every semester, and the results of these evaluations are discussed with the course providers. After five semesters of operation, each course is evaluated by two peer experts (always professors from outside of Bavaria), one of them focusing on matters of media pedagogy and didactics, the other on the subject content. The results of the students' evaluation are

made available to the peer experts, too. For the student and expert evaluations, standard evaluation sheets are employed[80]. The results of the peer evaluation are discussed by the Programme Committee and the Steering Committee and with the course providers. Any problems in the sphere of tuition addressed in the student evaluation can usually be resolved by the VHB Office and the individual teacher.

Course providers can apply for funding to update their courses if the work involved exceeds the occasional updating university teachers are expected to perform in face-to-face teaching. The VHB provides the required funds as long as there is a sufficient demand for the course.

Providing courses for tutors in VHB courses as outlined above is also part of the VHB's quality assurance activities. Furthermore, the VHB supports competence development for professors of its member universities by organising workshops on e-leaning.

Technical issues

In the VHB with its 30 member universities, a variety of learning management systems (LMS) are in use. This variety is a consequence of the variety of the subjects taught as much as of the history of the VHB: the VHB started in 2000 with a portfolio of 36 courses which had been prepared for different subjects by different universities.

No central server is used; all courses are on servers of member universities, and they are administered by responsible persons at member universities, i.e. by professors of the member universities or by members of their staff.

It has been argued that this decentralised approach might not be the most effective solution, but as far as can be judged from the students' evaluations, the plurality of LMS and platforms does not constitute a problem for the students. Critical remarks related to specific features of specific systems (which were then improved) did not refer to the fact that a variety of systems are used. Besides, the migration of the existing courses to a single system would not be economically sound. The gradual introduction of a central LMS has been discussed by the member universities, but the vast majority are not in favour of such a solution.

While a centralized LMS does not seem to be an urgent issue, the establishment of an authorisation and authentication infrastructure (AAI) is making progress. As a first step, a method of data exchange has been established with all important member universities that makes online registration with the VHB possible. Data on participation in examinations and on their results is a sensitive issue. This data is exchanged directly between the examining university and the students, and between the students and their home universities, not via the VHB. An AAI based on Shibboleth is being introduced in cooperation with the Leibniz Computational Centre (Leibniz-Rechenzentrum - LRZ*)* in Munich.

The VHB's organizational structure

The basic body of the VHB is the Assembly of Member Universities, in which each member university is represented by a Commissioner, who in turn is the key person for all VHB affairs within her or his

80 An English version is available:
http://www.vhb.org/fileadmin/download/vhb-QS-Kriterienkatalog_Englisch.pdf

home university. Each university has one vote per 5,000 students. The Commissioners are usually members of the governing body of their university. The Assembly elects the Programme Committee and the Steering Committee, which appoints the Managing Director.

The Steering Committee consists of three persons. Both the President and the two Vice Presidents are presidents of member universities and in this function represent the VHB in the Conference of the Presidents of the Bavarian Universities (Universität Bayern e.V.) and the Conference of the Presidents of the Universities of Applied Sciences (Hochschule Bayern e.V.). The President of the VHB is usually President of a university, one of the Vice Presidents is President of a university of applied sciences. The Programme Committee consists of eight persons. Five of these must be Vice Presidents for questions of teaching and studying at their respective universities, one must come from a university outside of Bavaria. At present, four members of the Programme Committee come from universities of applied sciences, and four from universities.

While all offices mentioned so far are held by professors as part of (in fact, in addition to) their ordinary workload, the Managing Director and the employees of the Office or Service Unit (Geschäftsstelle) work for the VHB full-time. In the Office, 21 employees work in the areas of finances, project management, public relations, student registration and technical support. The Office is located at the University of Bamberg.

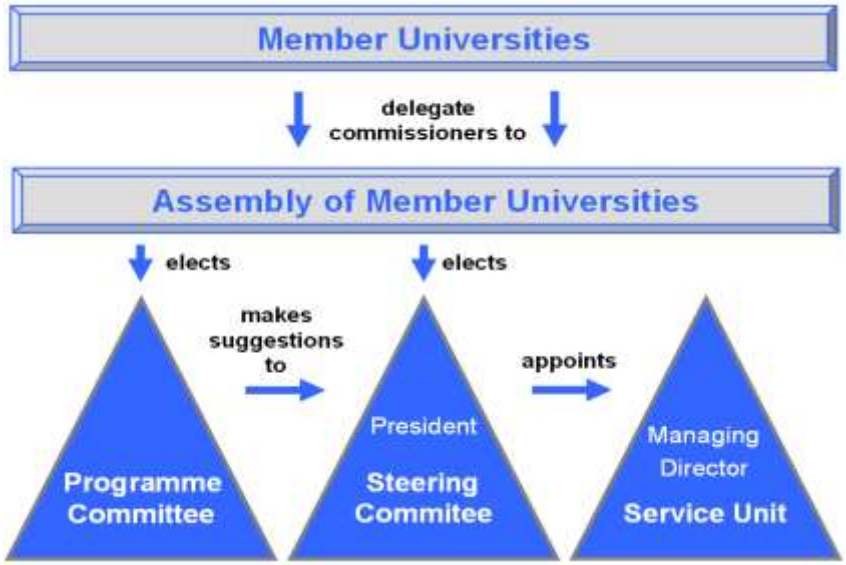

Figure 2: Organizational structure of the VHB

In addition to its regular responsibilities, the VHB has been assigned by the Ministry of Higher Education with the organization of projects within the framework of the European Social Fund for the period of 2007 to 2013. The continuation for the period of 2014 to 2020 is to be expected.

Results and financing

As early as 2007, the VHB was identified as one of Europe's "mega-providers of higher education online" by the European Union's MegaTrends project.[81] This study was based on data from 2005, when the VHB had about 20,000 course enrolments annually. Today, there are more than 110,000 course enrolments by over 40,000 students per academic year. Figure 3 shows the development of course enrolment over the years:

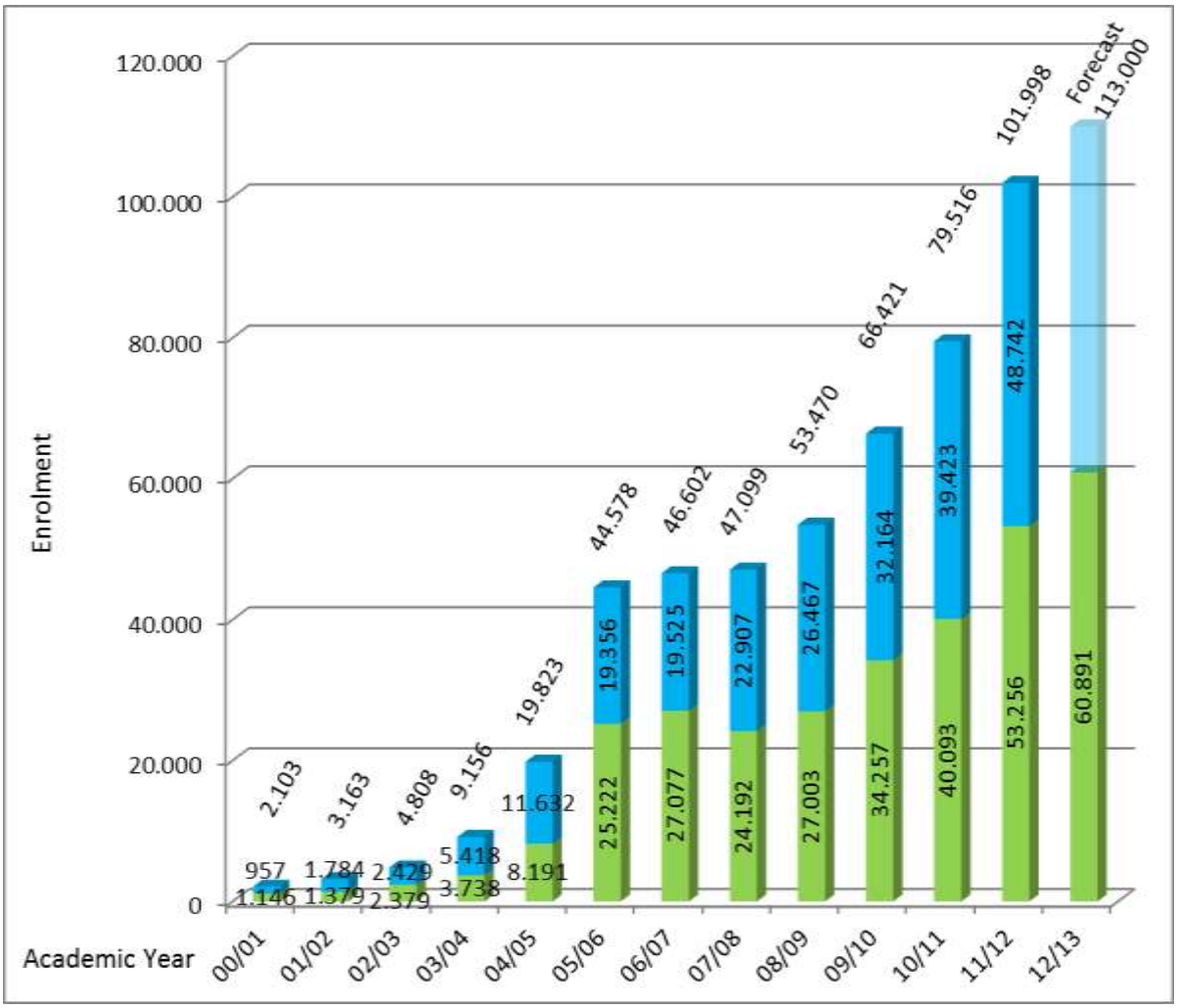

Figure 3: Development of course enrolment

In the years for which complete data are available, 55% of the students who enrolled in a course took part in the final examination. 56.8 % of the total enrolment was in courses offered by a university other than the student's home university. This shows that the "import" and "export" of teaching across university borders have become a widespread reality.

At present, the most popular subject areas are Law, Business Sciences and Medical Sciences. There is a noticeable difference between individual fields of study regarding the participation in final

81 Cf. http://www.nettskolen.com/in_english/megatrends/

examinations (cf. figure 4). This can be explained partly by the fact that some students use VHB courses as an additional source of information and an opportunity to receive extra training and tutorial guidance, but wish to obtain the necessary credits through examinations in courses of their home university.

Financing: In the period from 2000 until 2008, the VHB was financed by the Bavarian government with more than 22 million €. For the years 2009 to 2013 an agreement has been concluded between the Ministry of Higher Education, the Bavarian universities, the Bavarian universities of applied sciences and the VHB by which the annual budget of the VHB has been raised to approximately 6 million €. The bulk of this sum comes from the Bavarian state budget and other state programmes; the member universities contribute one Euro per student and semester, i.e. a total of around 0.6 million € per year.

	A	**B**	**C**
Business Sciences and Economics	11,464	11,2%	64,1%
Computer Science	1,905	1,9%	60,3%
Engineering	480	0,5%	46,7%
Cultural Sciences	2,428	2,4%	50,7%
Health Care / Health Management	822	0,8%	59,7%
Key Skills	8,193	8,0%	54,1%
Languages	7,313	7,2%	81,5%
Law	39,187	38,4%	38,7%
Medical Science	17,921	17,6%	86,4%
Natural Sciences	337	0,3%	54,9%
Social Sciences	273	0,3%	82,5%
Social Work	2,974	2,9%	68,7%
Teacher Training	8,701	8,5%	70,4%
Total	**101,998**	**100%**	**56,8%**

A: Enrolment in field of studies

B: Percentage of total enrolment

C: Percentage of enrolment resulting in examination

Figure 4: Enrolment and examinations by fields of study, academic year 2011 / 2012

Audit of the VHB

During the first half of 2013, an international group of experts carried out an audit of the VHB. Their conclusions and recommendations were both very favourable and extremely helpful; they have been published on the VHB's website[82]. Currently, the VHB is one of the subjects of a study on innovation in higher education, launched by the European Union's Directorate General for Education and Culture. The results are expected to be published at the beginning of 2014.

Conclusion

The success and the further development of the VHB depend on its ability to serve the needs of three target groups: students, teachers and universities. By serving the needs of these target groups, the VHB serves the needs of society and the state, which in turn provide the necessary funding.

Students profit from the flexibility of online teaching which is especially important for "non-traditional" students. Therefore, the VHB concentrates on asynchronous forms of communication. Students of the member universities do not have to pay any additional fees.

The quality of the courses is assured by an elaborate system which makes the quality of online teaching even more reliable than the quality of face-to-face teaching. The possibility of developing e-learning literacy while studying a subject as part of the curriculum enhances the employability of the students without requiring additional effort.

Teachers experience a wider range of pedagogical possibilities. Many of them also appreciate the possibility to reach more students with their teaching. Where online teaching is accepted as part of the professors' workload, they also profit from the flexibility online teaching permits.

By offering online teaching and tuition on standard subjects, teachers can focus their face-to-face teaching on more advanced or specialised subjects. This can be both more demanding and more satisfying.

Working within the VHB network is also attractive for professors because of the grants by which the VHB funds the development and improvement of online courses and because of the financing of tutors. Moreover, funding by the VHB is considered "third-party-funding" in the performance record of the respective professors and faculties.

Universities profit from the VHB in several ways. By using VHB courses, universities considerably enhance their teaching capacities. Not only can they offer additional subjects, they can also restructure teaching capacities and use them for subjects less suitable for online teaching.

Generally, universities are facing times of more intense competition. But this does not mean that

82 http://www.vhb.org/fileadmin/download/Audit_Empfehlungen_2013.pdf

they cannot cooperate. On the contrary, in order to survive in a world of growing competition, universities will have to cooperate not only in research, but also in teaching. The VHB is an excellent means of establishing and developing such cooperation. One of the positive effects of this cooperation is the establishment of common quality standards for online teaching.

The VHB avoids competition with its member universities. In particular, the VHB does not develop for-profit courses for further and continuing education.

From the point of view of the **state**, the situation can be characterised by the following considerations:

1. Public budgets will continue to be strained, because debts and deficits must be reduced.
2. The number of students will rise until 2020. Later, demographical factors indicate a gradual decline. On the other hand, Germany and especially Bavaria wish to boost the proportion of their population with a university-level education, and they wish to attract more students from abroad.
3. As far as we can see, in Germany higher education will continue to be basically state funded. The introduction of moderate fees with a maximum of € 1,000 p.a. per student, introduced by some German states (Bavaria was among them), was abandoned in 2013.
4. Therefore, additional high-quality education must be provided in a cost-effective way. The taxpayer-funded development of identical or similar online courses at different universities would be economically unwise.
5. Online education which is financed, organised and exploited by a joint venture of all universities together with the Bavarian Ministry of Higher Education appears to be an appropriate and necessary response to these challenges. Of course, this cannot be the only response.

To achieve its present position, the VHB has had to concentrate on the following key factors, and it will go on doing so in order to continue its successful development:

- A strictly demand-oriented policy for the development of new courses,
- Cost-effectiveness,
- Putting quality first, employing thorough quality management,
- Close cooperation with universities and the Ministry of Higher Education,
- Drawing upon the competence of the member universities, using their infrastructure as much as possible,
- Continuous improvement of courses and of administrative processes in order to reach maximum user-friendliness,
- Transparency in all decisions, especially in funding,
- Lean organisation, simple structures.

Perspectives

By the end of 2013, an agreement on the objectives and for the funding of the VHB during the period from 2014 to 2018 is to be concluded between the Ministry, the member universities and the VHB. The audit recommends expanding the VHB so that enrolment in 2018 will be about twice as much as it was in 2013.

Possible fields of additional effort are expected to be lifelong learning in its various forms, further courses in English for both German and international students, and courses in German for incoming students. Hopefully, the Humanities will play a much more active role in the coming years. Finally, "virtual" student mobility may become an issue which would further reinforce the VHB's interest in developing international cooperation.

In the more distant future, when student numbers will stop growing, and at some universities might even decrease owing to demographic factors, cooperation among universities in online teaching will prove especially valuable. The decline of student numbers at some universities might lead to a dilemma for the Government: On the one hand, it might seem economically appropriate to close down some of the smaller universities with declining student numbers. But then again: Wouldn't such a step make things even worse? In the regions concerned, the local university is both an important employer and a most valuable institution for keeping the region attractive and preventing further depopulation.

In this situation, a large portfolio of high-quality online courses for a variety of subjects, each course with individual tuition for the participants, will help smaller universities to stay attractive, even if their growth prospects might appear negligible. Therefore, the approach of the VHB is valid and valuable for systems of higher education in times of stagnating and even diminishing student numbers as well as in times of growth.

References

Bremer et al. (2010): Bremer C., Göcks M., Rühl P., Stratmann J. (Eds): Landesinitiativen für E-Learning an deutschen Hochschulen. Münster: Waxmann, 2010

Earlier versions of this paper, at that point based on the experience until 2009 and 2010, were published in the Polish online journal "Edu@kcja. Magazyn edukacji elektronicznej", 1/2010, pp. 33-41, and in the Proceedings of the EADTU Annual conference 2010, "Strategies and business models for Lifelong Learning", pp 337-350.

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From MOOCs to knowledge sharing

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Abstract

One of the major contribution of the MOOCs' phenomenon is the opportunity it gives to think about how *sharing* and *sustainability* are linked together also in the educational domain. Nowadays each university is wondering about its potential role in MOOCs, but first it must be considered that in traditional European higher education, *knowledge sharing* culture is not routed as we can expect, and still has to be built step by step. As a case study, in the experience of Politecnico di Milano the more effective opportunity grasped in order to sustain the development of *knowledge sharing* culture has been the introduction of the new online platform for supporting face-to-face didactics. The new environment has been shaped in order to pave the way to all kinds of knowledge sharing initiatives inside and outside the community. A lot of different knowledge sharing models are raising thanks to a bottom up process among teachers and students , but also among different groups of teachers and students. In some unexpected sharing situations, the technical and administrative staff is involved as well. The impression is that teachers, students and staff are becoming aware that sharing knowledge implies improving the sustainability of its related processes. Perhaps, it should be considered that MOOCs are just a tool in a never ending set of strategies of knowledge sharing activities. These strategies can be implemented by exploiting the unexploited potential of the network, in order to make sustainable knowledge-related processes at the local and at the global level. Let's explore it.

Keywords: MOOC, knowledge sharing, open content, models, sustainability

From the very beginning, the images used to evoke **MOOCs - Massive Online Open Courses** have been extremely powerful and they arise overwhelming and disruptive processes by nature or by men: tsunami, earthquake, revolution.

Supposing that we are really talking about such a disruptive event, MOOCs, like any other natural or human event, don't spring out of nowhere, but they originate from the fertile ground of the numerous initiatives of *open courseware* of the last few years that developed operational procedures and cultural approaches in favor of sharing content and materials produced from universities in the US and all over the world.

Up till now, *open courseware* initiatives had mainly the objective to promote the image of the institution from which they originated and to activate educational initiatives that would support "*social & global responsibility*" purposes, without any direct goal of economic returns: let's just think about the openly philanthropic approach of the **OCW** portal of **MIT** http://ocw.mit.edu, but also the massive contribution of the most prestigious American universities in offering online courses through **iTunesU**, started in 2007, which now hosts more than **1000 universities**, about ten of which are Italian, and counts more than **700 million downloads** of contents, or the more modest **YoutubeEDU**, always on a run-up on the *Higher Education* front. On this matter, it is interesting to point out how at the moment the two most appealing proposals on the "university and college" line are not actually created by institutions of *higher education* but are, on the one hand, a brilliant individual initiative (the Khan Academy) and, on the other hand, a state program on a wide range (the Indiana NPTEL), able to generate respectively more than **14 million** and **almost 10 million views** to the thousands of uploaded videos, to which follows UC Berkeley with "only" **7 million views**.

By observing this data, we realize that MOOCs do not differentiate themselves from the *open courseware* panorama just for their "massive" dimension – which actually was already an achieved goal by iTunesU and by YoutubeEDU, but because the users have access to materials integrated in a **timed educational process that allows various levels of social and instructional interactions** (variable according to the approach chosen by each partner university and by each professor), as well as **evaluation and certification** processes, extremely well exemplified in Michael Feldstein's diagram.[83]

83 See: Blog e-Lliterate "MOOCs, Courseware, and the Course as an Artifact" - Posted on April 12, 2013 by Michael Feldstein - http://mfeldstein.com/moocs-courseware-and-the-course-as-an-artifact/

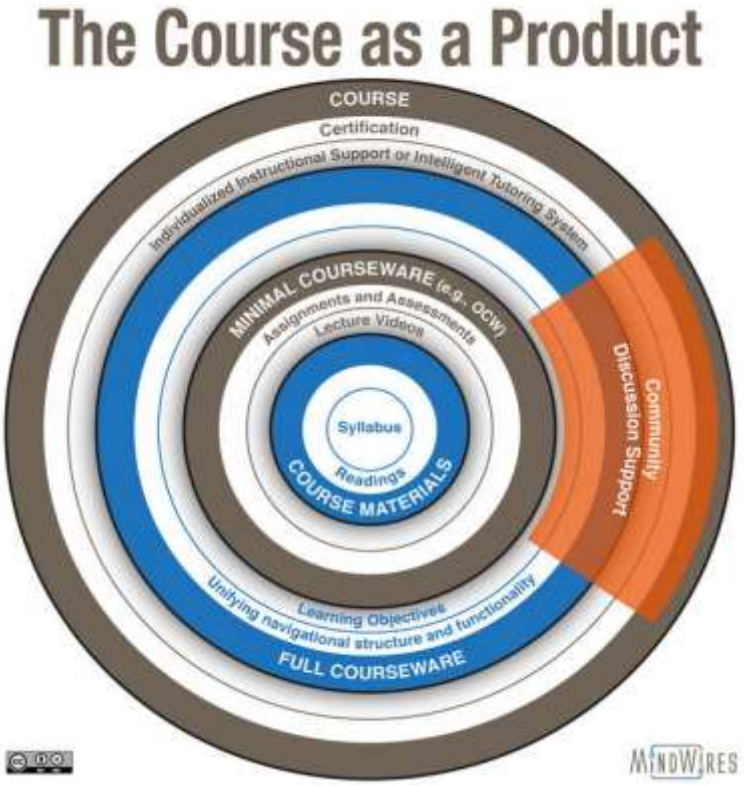

Figure 1 - Michael Feldstein's diagram

Moreover, in MOOCs, new systems of objectives are substituting the most philanthropic objectives typical of *open courseware* and to pursue them it is required the support of dedicated start-up, nimble and aggressive structures full of organizational independence such as Coursera, EdX or Udacity.

Although Daphne Koller, one of the two co-founders of Coursera, continues to refer to the initiative as a "public-good mission", the global approach of MOOCs with many tens of thousands of students in each course, allows to hypothesize even very important financial returns based on the introduction of a new approach which substitutes the traditional one of the American HE, based on the request of very high fees to a reduced number of students, with **a "long tail" approach, based on the request of a minimal fee to hundreds of thousands of students**.

This doesn't take into consideration the possible economic returns from the products sales (books, softwares, etc.) or services either to students (tutorship, orientation, counselling, placement), or to the companies (recruiting at global base, project work on subjects of business appeal). Apparently, this model convinces venture capitalists because it successfully deployed tens of millions of dollars of

investments in a few months after the birth of the first startups.[84]

In addition, MOOCs play an important role in support of the internationalization of the partner universities: not only for the general marketing of the university image abroad and especially in the developing countries (it is estimated that less than 40% of the registered users to Coursera come from the United States), but also as specific support to the ***International Branch Campuses*** which represented the strategy of many universities at International level in the last ten years. Not surprisingly, Coursera's strategy for 2013 focuses a lot of its attention on courses in languages other than English, in particular Chinese, Spanish and French.

The latest news upon which we should really base the evaluation of the measure of the actual innovative range of MOOCs is however an acceleration on the methodological testing. **At the end of May 2013 nine networks of state universities joined Coursera with the explicit objective to experiment new and more sustainable productions of courseware based on sharing.** Coursera will allow them to build new learning communities, to share courses materials and to experiment on a broader scale the "*flipped classroom*" approach.

Coursera will therefore experiment a role of courseware "broker" of high quality from which universities could profit to concentrate/focus energies on the experimentation of new models of in classroom education.

A new model of knowledge sharing for higher education learning contents is perhaps raising.

Two of the most interesting aspects of the current process are the new attention to the collaboration among universities about the sharing of online content, and a general reflection (at least in the anglo american world) on how the moment of the *face to face* interaction with the teacher could be mostly valued, demanding instead to an individual mode of learning the mere transfer of contents, thanks to the support of ad hoc materials developed for MOOCs.

The **most interesting impact could be exactly the methodological one**: the education of the universities that will mostly invest in the availability of online material and in the development of *peer-to-peer* activities to favor the understanding, could greatly differ from the others in which they could take the opportunity **to transfer to the students the foundation contents through the web and to value the classroom activities for application activities, testing, discussion and always more efficient comparison**.

Paradoxically MOOCs, which propose themselves in this phase as a pedagogical model, in which the structured content has a predominant role, they are leading us to discover the pedagogical relevance of interaction, dialogue, discussion, "acting together" face to face around a table.

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84 "Major Players in the MOOC Universe" Graphic by XARISSA HOLDAWAY; illustration by NIGEL HAWTIN in "The chronicle of higher education", June 14, 2013 http://chronicle.com/article/Major-Players-in-the-MOOC/138817/?cid=wc

San José State University stance brings us to reflection; at the beginning of May 2013, after publicly committing to use MOOCs as a tool to enlarge the base of the registered students and to reduce costs, the university had to take note of the fact that a few professors did not intend to use – as it was, however, expected – the materials of an EdX course, held by Michael Sandel of Harvard University, an academic superstar.

The reason brought by the professors about their refusal was the substantial opposition to the idea that the action would lead to impose on them to use the basis of standard content basically identically for all of them and dangerously homogeneous.

This observation can only find our agreement, but a general overview has to take into consideration how the problem of "uniqueness" of the contents available through the MOOCs could now perhaps find a very powerful antidote in the potentially infinite number of competitors in the offer of contents either among the MOOCs providers (in about a year we can already count three major leaders: Coursera, EdX and Udacity), or among the participating institutions (just within Coursera in June 2013 the partner institutions there are already over 80 partner institutions, some of which are universities consortiums).

In this perspective the actual innovative contribution of MOOCs could exactly consist in pushing Universities in sharing online content in order to be able to allow the faculties to spend their energy in the classroom on "how" that specific content can really be understood, absorbed and turn into a competence. Therefore the impression is that MOOCs truly have the potential to be a "disruptive innovation", but not mainly – or not only – for the online learning world, rather for the new scenarios of the on campus learning and on the knowledge sharing initiatives among universities that their development will allow to create, experiment and spread.

BeeP - The experience of Politecnico di Milano online platform : seizing the opportunity for the developing the sharing culture

As we have seen in the history of a lot of Universities involved in MOOCs project the development of a Knowledge Sharing culture is a crucial node. As we can expect, it still requires to be built step by step, working not only on the educational front, but also operating together on the technological, communicative and institutional aspects.

In order to support the development of the Knowledge Sharing culture, the most effective opportunity in the experience of Politecnico di Milano has been the introduction of a new online platform to sustain face-to-face education. This new environment has been shaped in order to pave the way to all kinds of knowledge sharing initiatives both inside and outside the community.

BeeP (Be e-Poli htttp.//www.beep.polimi.it) is the new portal for the network activities of students and faculty members at the Politecnico di Milano, introduced in the academic year 2012-2013. BeeP is an open-source learning platform based on top of a leading platform as Liferay Portal. It was designed to offer online support to face to face courses at Politecnico di Milano. We undertook a thorough analysis to compare traditional LMS and e-collaboration tools for enterprises and we observed that the latter were a better choice to support the processes of innovation and learning experimentation. These requirements are mainly: agile management of asynchronous and

synchronous collaborative activities, optimization in media management, dynamic tagging and categorization of content to improve searchability. Furthermore, Beep is a platform in progress that can also be improved thanks to the contributions of faculty and students and that can count on the level of responsiveness and motivation of the open-source community to improve the tool and to keep the-state-of-art in web development.

Based on the experimentations with a few in classroom courses and with an entire semester of courses for the Degree in Computer Science Engineering, we were able to identify a few primary characteristics and therefore we defined the general settings and features to make available to the faculty:

- Maximization of the agility in the management of collaboration activities either asynchronous or synchronous;
- Optimization of the management of multimedia contents;
- Facilitation of the integration of external resources and web 2.0 tools;
- Facilitation of the aspects related to the organization and searchability of contents (essential to build a knowledge sharing for the university).

In agreement with the Board of Directors of the University, the platform has been optimized to support the interactions between students and faculty members and to promote sharing, openness and searchability of the learning contents, as we can see in the following image:

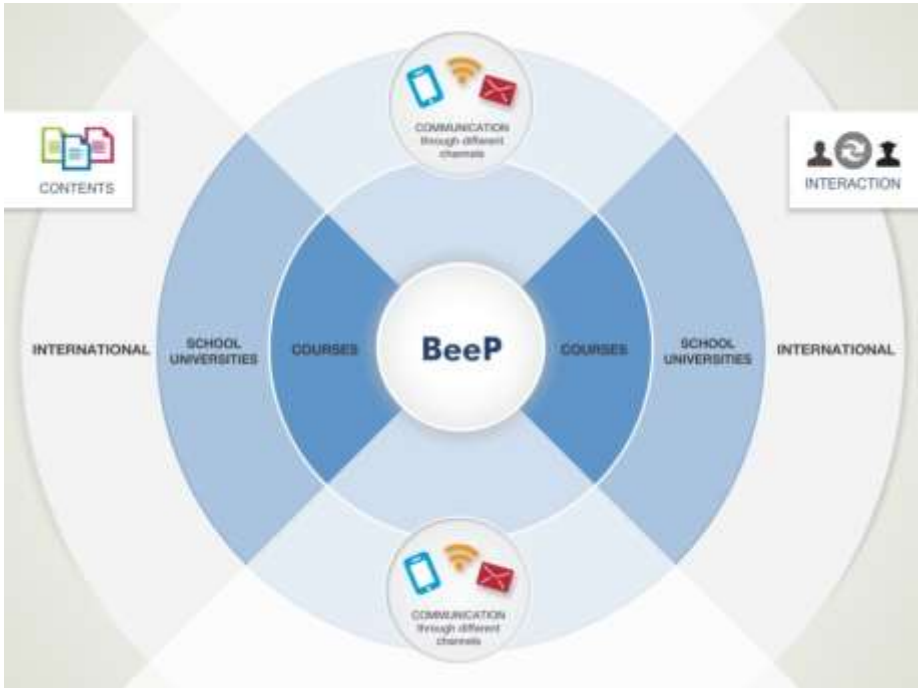

Figure 2 – BeeP (platform for the network activities of students and professors at the Politecnico di Milano)

The current platform users are about 50,000 (about 44,000 students, more than 2,000 faculty

members, researchers, administrative staff and visitors). The university students have already access to all the courses activated on BeeP by default and to the related learning materials. After about a year from the activation of the platform, about 73,000 files have already been uploaded, divided in more than 2,000 courses.

The visibility of the materials is, for now, limited to the faculty members and to the Politecnico students, but everything is already predisposed for a potential openness to the web; a few experiments of open courseware, of integration between online resources and with other universities and International contests already took place.

I like to learn… I learn to learn… Elene2learn

One of the most interesting experiences aimed to the development of the knowledge sharing culture, that Politecnico di Milano developed inside the online platform Beep is Elene2learn, a European project in his third level of development (the first step dates back to 2003). The aim of the project is to give students the chance to meet their learning goals as effectively as possible and acquire, at the same time, valuable transversal skills (public speaking, team working, self-assessment and self-management, etc.) through didactical activities with multimedia contents reviewed by content experts.

In particular, we would like to focus on the experimentation phase which is being performed by Polytechnic's Mathematics professors, High Education Mathematics professors, students of the last year of high school.

The main activity of this phase is to **share multimedia contents** in an **online environment** (mainly video, but not only) on some of the main maths contents studied in the fifth year of high school, in order to support students in overcoming the barrier of maths admission tests to access scientific universities. These contents should then be reused and, when needed and when possible, adapted to the specific needs of a single classroom and then shared again, improving their efficacy step by step. The contents could be chosen from different sources: online repositories, open courseware, public videos, and also home-made videos. Polytechnic's Mathematics Professors review and comment them according to their evaluation of the efficacy and effectiveness of each content and the explanation given for maths' subjects. This provides a guarantee on the quality of the source and a training to other HE teachers, who learn how to select affordable online contents. These teachers, moreover, can count on an initial review from University professors, then on a peer review of the sources they propose to add. The design of this first step (the review activity) takes inspiration from social bookmarking in the selection and sharing of useful content and resources, but it focuses on video content and resources already available online (OCW).

The indirect objectives of these projects are:

- to develop a **sense of community** in terms of **peer support and contribution**
- To critically **search and choose online resources** for didactical purposes
- To provide an **orientation** into Mathematics at university level
- To develop **referencing skills**
- To build **confidence**
- To support **communication skills** in expressing own opinion in synthetic and clear way.

Through the activities performed by students and teachers, in the classroom and at home, the project aims at **developing learning to learn competences,** such as self-regulation, self-assessment, communication (reading and writing), collaboration, motivation and self-confidence.

The experimentation starts then with the direct involvement of some HE teachers and university professors that are looking for online resources on Mathematics. They enrich them adding their own professional comments and evaluations, focusing on the students' point of view: what do they really need? What kind of information should they have in order to select the most useful contents, to be able to solve maths problems correctly? All the selected resources according to this objective are integrated in the Politecnico di Milano platform, to become available and (re)usable also by university students who have to overcome the barrier of first level Mathematics exams.

In the second step of the experimentation, HE teachers use these contents in face-to-face didactics, experimenting 2 ways of integration:

- using videos to present new contents to students
- asking students to prepare a short lesson for the entire class, with the support of shared and evaluated videos.

Teachers involved in this experimentation path are supported in different ways:

- direct involvement in training meetings before the experimentation starts
- technical support offered by Politecnico platform staff during the entire project
- availability of continuous contact, through e-mail or phone, with METID staff in order to solve methodological and practical issues when needed.

The experimentation ends with a feedback from students and from professors, which collects their perceptions and useful suggestions for further improvements. We asked 8 HE teachers and 50 students who already took part in the experimentation to answer An **on-line questionnaire** to evaluate their experience in terms of tools, relations, collaboration and collect their suggestions about further services/tools. We also Interviewed some faculty members who took active part in the experimentation in order to rethink their experience and comment on the enhancement of their didactical effectiveness in the classroom.

The experimentation is conducted mostly in **groups**: students are asked to prepare a sort of mathematics "lesson", using open videos, to be presented to their classmates and to the teacher.

The activity takes an average of 4 hours in class. Then, depending on the final result quality or of the level of students preparation on the argument, students meets after school hours.

Usually, the activity is introduced by the professor, who presents the subject to develop and shows interesting, selected and evaluated material from the platform's online repository, to be used as starting point. Then students can proceed to search for further contents to be proposed and they prepare their presentation with the support of multimedia tools. At the end of their presentation, the professor evaluates the activity and comments on the methodology chosen for the presentation itself.

Students' feedback

All students confirm that they re-used later on, at home, for their individual study, the materials collected and produced.

In general, almost all students, had a very positive experience. Most of them agree to consider the experience really interesting (48%) and involving (48%) and totally innovative (59%). The percentages are a little bit lower when they refer to its effectiveness and ability to stimulate (44% and 47%).

This experience had a very positive effect, in particular, on their confidence on the argument treated, on their capability to work collaboratively for producing a common output and on their creativity and confidence to present a content to a public.

They really appreciate the proposed format, and the use of video has been effective. They also like the opportunity to integrate didactical tools and approaches that are different from the "classical" lesson typology, where, usually, the student adopts a passive attitude and where the level of technology integration is low or completely lacking. Moreover, they like the use of videos that can be viewed wherever and as many time as needed. They consider a great added value the instructor evaluation on the online contents as it helps them very much in judging the massive quantity of materials available on internet.

Competencies developed through the project, according to students feedback:

- self-regulation
- self-assessment
- self-management
- thinking, problem-solving and decision making
- ability to handle obstacles and change
- being creative
- communication (reading and writing)
- collaboration
- motivation and confidence.

This experimentation has a very good impact on collaborative competencies, as students are forced to organize their job dividing activities among group members. Moreover, it helps improving communication skills among peers, (to organize the work project), and in public presentations of a specific concept/content.

Students also put the attention on the enhancement of their creativity, in particular in presenting a content, and on the ability to handle obstacles and to change their study approach, in order to integrate the new tools and modalities. They admit that they are forced to review how they prepared their lessons: this approach requires greater effort, but it is more effective, in particular because they have to understand very well the argument in order to be able to effectively present it to others.

Students feel, as main challenge, that they have to overcome their shyness and lack of self-confidence in public speaking in a "professional" way. They are afraid they won't be clear enough in the exposition. Some of them describe the difficulty in designing and developing the presentation, since contents and their connections are not defined by a "guide" already (as it usually happen in a traditional lesson with the instructor's guidance). In this case, in fact, professors give just an initial idea and then students have to assemble all pieces in and understandable way.

The majority of contacted students suggest that an improvement can be done in the integration of collaborative tools to support the work group activity. It is quite interesting that none of them think that this experimentation is too demanding. In comparison to the normal didactical activity, his approach is absolutely more demanding for students but, at the end, the satisfaction perceived, the possibility to interact with classmates and the improvement in comprehension of the argument, balance positively the investment done, according to their feedback.

Teachers' feedback

The experimentation has a positive impact on the **motivation of students** and on their **learning capabilities**, according to the teachers' feedback. The teacher himself/herself enriches his/her own experience asking students, when looking for new video resources, to impersonate different kind of users with different needs, and then work through comparisons putting into evidence changes. For example, a group has to think as a student who want to go deeper into a content, searching for enanchements; another group plays the role of a student that approaches the content for the first time, etc… The general impression is very positive. Teachers enlighten good results in term of involvement and motivation in students. Moreover, this approach has the potentiality to act on the pro-activity of students who feel more stimulate in suggest new didactical proposals and are rewarded by teachers' approval on their work.

New and less structured activities could be, by themselves, a challenge because they require a different approach (that means more time and more self-regulation), far from the traditional one already consolidated. This is the reason why it becomes difficult to integrate any "experimentation" in the strict and prefixed didactical timetable. Offering a wider set of open educational resources could improve results further on, in teachers' perspective.

In the end, what worked?

- Video format: it has been really appreciated by students
- Teacher evaluation on open content resources as example of critical
- Group activity: the interaction among classmates has been the main strength, working also on motivation
- The use of open contents for preparing a lesson to be presented to classmates. It works very well on improving personal knowledge on the argument and also on self-confidence and communication skills.

Possible improvements: we could integrate a social network to enlarge collaboration and publication of other contents, even if, with a tool like this, it would be quite difficult to organize them and make them searchable.

Conclusions

MOOCs phenomenon is now showing us new opportunities in term of sharing of learning contents among universities in which MOOCs aggressive companies can play a new role of "brokers".

In the meantime MOOCs are pushing a general reflection on how the moment of the *face to face* interaction with the teacher could be mostly valued.

In this perspective the actual innovative contribution of MOOCs could exactly consist in the push to rethink the balance between online education and in classroom education and to remind us that any learning exchange based mainly on the mere transfer of contents is more and more fragile and less legitimized by a trend that seems to give continuously more possibilities of applications to the motto *"If you could be replaced by a computer you should be".*

An interesting impact of MOOCs could so be exactly in the link between the sharing of earning contents and the methodological reflections : the education of the universities that will mostly invest in the sharing/re-use of online learning material and will have the opportunity of release energies directed to the development of "active classrooms" could greatly differ from the others. But they must pay attention to prevent all risks related to the development of a dangerous homogeneousity of "standard materials" that would make the learning process poorer and would hopefully be refused by teachers.

Paradoxically MOOCs, which propose themselves mostly as a pedagogical model, in which the structured content has a predominant role, they are leading us to discover the pedagogical relevance of "acting together" face to face around a table and the risk of "homogeneousity" related to them push us to reflect about what is exactly the added value that each teacher can put in his own learning contents.

References

Bonaiuti, G.(a cura di), (2006) E-Learning 2.0. Il futuro dell'apprendimento in rete, tra formale e informale, Edizioni Erickson.

Dougiamas, M. (2010) Countdown to Moodle 2.0, Moodle Org Forum, July 11, 2010, http://moodle.org/mod/forum/discuss.php?d=153815

Downes, S. (2005) E-Learning 2.0, October 17, Elearn magazine, ACM, New York.

Driscoll, M. (2000). *Psychology of Learning for Instruction.* Needham Heights, MA, Allyn & Bacon.

Ellis, Ryann K. (2009), Field Guide to Learning Management Systems, ASTD Learning

Feldstein, M. (2013) e-Literate Blog, "MOOCs, Courseware, and the Course as an Artifact" - Posted on April 12, 2013 - http://mfeldstein.com/moocs-courseware-and-the-course-as-an-artifact/

Gasperson,T. (2006) "Goodwill is good with open source portal Liferay", September 13, 2006, Linux.com, http://www.linux.com/articles/56972

Gredler, M. E. (2005) Learning and Instruction: Theory into Practice – 5th Edition, Upper Saddle River, NJ, Pearson Education.

Hrastinski, S. (2007) "The Potential of Synchronous Communication to Enhance Participation in Online Discussions," paper presentato al 28th International Conference on Information Systems, December 9–12, 2007, Montreal, Canada.

Karrer, T. (2007) Understanding eLearning 2.0, 2007, Learning circuits.

Kleiner, A. (2004). *Karen Stephenson's Quantum Theory of Trust.* Retrieved December 10, 2004 from http://www.netform.com/html/s+b%20article.pdf.

Jackson, M. O. (2008): Social and Economic Networks, Princeton, NJ: Princeton University Press.

Lamberson, PJ (2010) "Social Learning in Social Networks," The B.E. Journal of Theoretical Economics: Vol. 10 : Iss. 1 (Topics), Article 36.

Liferay.com http://www.liferay.com/

Jim Murphy, Gene Phifer, Ray Valdes, Eric Knipp, (2010) "Magic Quadrant for Horizontal Portals" , September 3, 2010, Gartner

Parkin G. (2004) E-Learning Adventures Beyond the LMS, November 14, 2004, Blog Parkin's Lot, http://parkinslot.blogspot.com/

Siemens, G. (2004) Connectivism: A Learning Theory for the Digital Age, December 12, 2004, http://www.elearnspace.org

Siemens, G. (2004) Learning Management Systems: the wrong place to start learning, November 22, 2004, http://www.elearnspace.org/

Wiley, D. A and Edwards, E. K. (2002). Online self-organizing social systems: The decentralized future of online learning. Retrieved December 10, 2004 from http://wiley.ed.usu.edu/docs/ososs.pdf

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Developing teachers and students' Digital Competences by MOOCs: The UNED proposal

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Abstract

In 2013, the UNED has launched 20 MOOCs with more than 160,000 participants registered. Two of these courses aim to help teachers and students to develop those digital skills required for innovative teaching and learning in the XXI century. Based on MOOCs principles, the course design relies on videos, complementary documents, quizzes, P2P support and assessment, and a "*learning by doing"* methodology. Results are analysed by means of initial and final surveys, among other data. In their first editions, 8968 participants from 43 countries (mainly Spain, 2510, followed by Colombia, 502, México, 250 and Peru, 26) initiated the MOOC "*ICTs for teaching and learning*"; the 56,9% was women. Their main interests were to improve and innovate their teaching practices. 9,93% completed the course, rated as "*excellent*" by 61,85% and "*good*" by 32%. 94% was already thinking to apply what they have learned in their teaching. Also, 2353 participants from 32 countries (mainly Spain, 596, Colombia, 150, México, 95 and Dominican Republic, 89) initiated the MOOC "*Ibervirtual: Basic Digital Competences*", a latinoamerican cooperation project (UNED, CSEV, UAPA) whose aim is to break the digital divide; 55% were women. Their main interest was to improve their digital skills for educational and professional reasons. A 19,12% completed the course, rated as "*excellent*" by 54% and "*good*" by 38%. By the end, 67% felt fully prepared for new online courses and 26% well prepared. Thus, these two MOOCs also help participants, both, as teachers and as students, to feel they can benefit from the new global movement based on social and open learning.

Keywords: Open UNED, MOOCs, Digital Competences for teaching and learning

Introduction: UNED and the MOOCs' year

The UNED (*Universidad Nacional de Educación a Distancia*) is the largest Spanish university with more than 250.000 students enrolled in its wide offer of university studies, both formal and lifelong ones, as well as in its successful courses to give access to the university to people older than 25, 45 and 50 years old. With 41 years of experience in distance education methodology, the UNED is leader in the application of forefront technologies within the educational field, displaying the widest offer of virtual courses all over the country, and it also provides face-to-face support in each one of its 62

local centres in Spain and 14 support centres abroad. The UNED is highly compromised with social issues making higher education available for groups with special needs, such as people with disabilities and imprisoned ones.

Since its early beginnings, in 1972, and being a university always attentive to all educative and technological advances suitable to be applied to our methodology, the UNED has always offer open contents such as multimedia ones (video, radio, tv, etc). However, it has been only recently that the UNED has launched a new website, UNED Abierta [85](2012) in which all its open production has been collected, being shared with the rest of the world (see Figure 1).

Figure 1: A sight of *UNED Abierta* website and its main contents

As we all know, the *Open Educational Resources* movement (OER) has shared thousands of online open materials and courses all over the world since 2002. The recent 2012 *Paris OER Declaration*, at the UNESCO *First OER World Congress*, represents its consolidation after ten years of worldwide development (UNESCO, 2012). Being enrolled in this world movement, the UNED started offering open educational resources under the OCW (*Open Course Ware*) framework some years ago, with 44 courses right now. Ten of these courses were developed to give response to some of the main objectives of the *UNED Induction Programme* (Sánchez-Elvira et al., 2013), providing support to students through initial "0" courses in more difficult subjects such as mathematics, statistics, biology, physics, etc, as well as giving them guidance to develop those basic generic competences included in our new EHEA (*European Higher Education Area*) degrees (e.g. distance autonomous and self-regulated learning, informational competences and team work open courses) (Santamaría y Sánchez-Elvira, 2009).

Coming to 2012 and 2013, the MOOCs movement (*Massive, Online and Open Courses*) has been very impressive, also in the UNED. In 2012, the *Horizon Report* (Johnson, Adams and Cummins, 2012) did not include MOOCs in the most important trends for the future of eLearning, whereas the most recent 2013 report, explicitly says that in just one year we will be able to appreciate their great impact on the education field as a powerful emerging trend:

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85 UNED Abierta website: UNED Abierta (2012) (http://portal.uned.es/portal/page?_pageid=93,25723475&_dad=portal).

"*… interest in MOOCs has evolved at an unprecedented pace, fueled by high profile entrants like Coursera, Udacity, and edX…The pace of development in the MOOC space is so high that it is likely that a number of alternative models will emerge in the coming year* " (Horizon Shortlist Report, 2013, Higher Education Edition, p.4).

Along 2013 the UNED has launched 20 MOOCs or COMA (*Cursos Online Masivos y Abiertos*) in its own platform, UNED COMA (Aprendo). These same courses have being offered in the UNIVERSIA platform (Miriadax), being the Spanish university with more MOOCs in the country. In this sense, it has to be said that the *European MOOCs Scoreboard*, whose aim is "*to highlight the huge potential that European institutions have in the world of MOOCs and to help visualize this potential by compiling the existing European-provided MOOCs and open courses available on different open websites*" (*Open Education Europa* website[86]) shows that Spain is currently the European country with more MOOCs offered contributing with the 30% (n=94), 20 of them, as it has been said, UNED ones, followed by the United Kingdom (see figure 2).

Figure 2: Current distribution of the offer of MOOCs per European country (October 2013). Source: Open Education Europa website

In other words, in the forthcoming years, there will be huge offering of this type of courses online, open to anybody, anywhere, at any time, giving thus support to one of the more fundamental millennium goal relating to education: lifelong training (Lisbon Declaration, 2000).

Two MOOCs to break the digital divide

The Paris OER Declaration of 2012 reminded all of us that one of the main objectives of the OER movement is "*to promote and use OER to* ***widen access to education at all levels****, both formal and non-formal, in a perspective of lifelong learning, thus contributing to* ***social inclusion, gender equity and special needs education****" (*p.1*)*

However, due to the digital divide, thousands of people still lack the most basic digital competences to take advantage of this training offer, even though many international organizations point up that

86 Open Education Europa website: http://www.openeducationeuropa.eu/en/european_scoreboard_moocs. Updated 31/10/2013

these skills are essential in the 21st century. In this sense, the European Commission includes the ***Digital Competence*** as one of the 8 key competences for lifelong learning in this century, defined as "*the confident and critical use of the Technology Information Society and Knowledge for work, leisure and communication. It is based on basic ICT skills: use of computers to retrieve, assess, store, produce, present and exchange information, and to communicate and participate in collaborative networks via the Internet*" (*EC,* 2006, p.5). However, according to the *Digital Agenda for Europe Scoreboard* 2013[87]: "*over 50% of Europeans use the internet daily, but 30% have never used it at all*! That is, the Digital Agenda also stresses the digital divide. In this sense, one of the main goals of the *Digital Agenda for Europe* is **to enhance digital literacy, skills and inclusion of European citizens** (Pillar VI).

Also, it is worth to mention that, according to the same report from the Digital Scoreboard, "*the three main factors for the digital divide are: lack of interest, lack of skills and cost*" (p.81). So, when people are really interested in becoming a digital user, the main obstacle is their lack of skills (Digital Agenda Scoreboard 2013).

Thus, in a century of *digital natives* we all have, as citizens, the right to become *digital immigrants*. In order to help overcoming the digital gap, and giving response to the European Commission demand for increased opportunities of training in digital competence, we have developed two different MOOCs as a first required step in the way of offering open online courses: ***Ibervirtual COMA: Basic Digital Competences*** (BDC), mainly directed to students and citizens, in general, and ***ICT for teaching and learning***, a course mostly targeted at teachers and students with a basic digital competence level.

These two MOOCs have been launched in 2013, both of them offered in Miriadax (Universia MOOCs platform) and UNED COMA (UNED MOOCs platform), and the first one (BDC) also in EdX, the first iberoamerican digital platform for entrepreneurship (in agreement with the MIT). Links to the courses are also available at the *OpenUpEd* website and at the *Open Education Europa MOOCs portal* (see Figure 3).

Figure 3. Websites of Ibervirtual COMA: Basic Digital Competences [88] and ICT for teaching and learning[89] MOOCs at UNED COMA platform.

87 Digital Agenda for Europe Pillar VI: http://ec.europa.eu/digital-agenda/en/pillar-vi-enhancing-digital-literacy-skills-and-inclusion
88 Ibervirtual COMA: Basic Digital Competences website
89 ICT for teaching and learning website

The design of these two MOOCs has been mainly guided by the European Commission proposal of the 7 main areas for The Digital Competence (Ferrari, 2012, Figure 4).

Figure 4. Areas or skills included in the Digital Competence (source: European Commission, Ferrari, 2012, p. 6)

MOOCs' design

Both MOOCs were developed under a learning by doing methodology, based upon a modular structure with a progressive level of complexity or difficulty, each module offering orientations, video contents and complementary materials. Peer-to-peer support is promoted and facilitators' help is provided through an organized structure of forums or thematic threads linked to each module or topic. The evaluation system includes online automatic tests or quizzes, and peer-to-peer assessment, as well, making use of rubrics to help participants to evaluate themselves and their colleagues. A badge system for accomplishment recognition is offered, as well as the possibility of a formal accreditation by means of online or face-to-face exams at the UNED local centres.

Ibervirtual UNED COMA: Basic Digital Competences

The main objective of this first MOOC represents an innovative proposal that aims to provide the basic digital skills that are necessary to access the opportunities offered by the Knowledge Society and, in particular, to benefit from the new global movement based on social and open learning. This MOOC is included in the Ibervirtual project, a project attached to the XX Ibero-American Summit of Heads of State and Government, whose main objective is to help Iberoamerican Distance Education universities working together to promote social inclusion through the increase of higher education access in their countries.

In this sense, it is interesting to note that the last two *Horizon reports on Technologies in Latin-American* (NMC Consortium) reveal rapid changes (see Figure 5); the first one on Tertiary Education, 2012-2017, placed the use of MOOCs in a three to four-year time horizon (Durall, Gros, Maina, Johnson & Adams, 2012), whereas a one-year time horizon was expected for other parts of the world; and the second one on Higher Education, 2013-2018 (Johnson, Adams, Becker, Gago, García, and Martín, S.,2013), within a year of difference, points up that "*there is a regional emphasis in Latin America on openness, whether in the form of open educational resources or open access …Also noteworthy is the progression of online learning over the past year*" (p.2). Even more, the report advances that:

"*although the Advisory Board saw online learning in the form of massive open online courses (MOOCs) as four to five years in the distance for the region, both the global and Latin American Advisory Boards believe mainstream adoption will happen much sooner, at less than a year*" (p.3)

This fact is also mentioned in the 2013 Horizon shortlist report: "*The Centro Superior para la Enseñanza Virtual is encouraging MOOC enrollment to Latin American communities through a Spanish platform called unX: go.nmc.org/gyorb" (p 4).*

NMC Horizon Report 2013 Higher Education Edition	Technology Outlook Latin American Higher Education 2013-2018	Technology Outlook Iberoamerican Tertiary Education 2012-2017
Time-to-Adoption Horizon: One Year or Less		
Flipped Classroom Massive Open Online Courses Mobile Apps Tablet Computing	Collaborative Environments Online Learning Open Content Social Media	Cloud Computing Collaborative Environments Mobile Apps Open Content
Time-to-Adoption Horizon: Two to Three Years		
Augmented Reality Games and Gamification The Internet of Things Learning Analytics	Augmented Reality Learning Analytics Mobile Learning Personalized Learning	Game-Based Learning Geolocation Personal Learning Environments Tablet Computing
Time-to-Adoption Horizon: Four to Five Years		
3D Printing Flexible Displays Next-Generation Batteries Wearable Technology	3D Printing The Internet of Things Machine Learning Virtual and Remote Laboratories	Augmented Reality Learning Analytics Massive Open Online Courses Semantic Applications

Figure 5. A comparison of the most recent Horizon Reports on the uses of technologies in Higher and Tertiary Education in both, the world, in general, and Latin American countries

Thus, thinking about what was needed to help people to be enrolled in online courses in general, and open courses in particular, the MOOC *Ibervirtual UNED COMA: Basic Digital Competences* was proposed as a development cooperation project by the UNED together with the UAPA (*Universidad Abierta para Adultos* of Dominican Republic) and the *Centro Superior de Enseñanza Virtual* (CSEV) of Spain.

A team of 12 experts from the three institutions, coordinated by the head of the IUED (*Instituto Universitario de Educación a Distancia* of UNED), Ángeles Sánchez-Elvira Paniagua, undertook the design of the course structure, contents, activities and assessment.

The MOOC structure includes the following modules:

- **Module 0**: Presentation of the course and a brief introduction about what Digital Competence is, and main keys to success in a MOOC.
- **Module 1**: Getting used to the course environment, reviewing platform e-learning functionalities and main features.
- **Module 2**: Basic technological skills in digital environments I: the computer (hardware and software) and basic production of documents such as written documents, spreadsheets, and presentations.
- **Module 3**: Basic technological skills in digital environments II: basic uses of the Internet. Guidelines for the use of the Internet, the concept of browsers and web pages, the concept of cloud and web 2.0 and e-mail.
- **Module 4**: Information Literacy in online environments. Management of searching and information storage tools in the network, as well as ethical use.

- **Module 5**: Communication skills in online environments. Types of digital content for content creation and dissemination thereof, legal uses and basic asynchronous and synchronous communication tools.
- **Module 6**: Social networks and collaborative work. Social Learning and major social networks: use and protection, digital identity and tools for collaborative work.
- **Module 7**: New proposals for massive online learning. What MOOCs, open educational resources, online learning communities or Crowded Learning are; types of educational platforms.

Main contents are delivered by video, including different types of recordings, professional ones with polimedia, screencasts and prezzis (see Figure 6)

Figure 6. Some examples of the types of videos used in the MOOC

This MOOC has already been offered in three different editions along 2013 (Miriadax, UNED COMA and UnX), counting with one CSEV facilitator and the support of two complementary UAPA facilitators during its delivery.

The course is equivalent to 3 ECTS or 75 learning hours, leading to the award of the badge "*Basic Digital User*" and a final diploma after the course completion.

ICT for teaching and learning

According to the main conclusions of the recent report from the European Commission "*Survey of Schools: ICT in Education*", although the technological infrastructure of schools has been clearly improved in the past year, still, teachers lack enough digital skills to be benefit of this improvement. However, "*despite having access and positive attitudes towards implementing ICT into their teaching and learning, teachers often find this difficult and require on-going support - not only technical but also pedagogical"* (p.168).

There is also evidence that "*teachers prefer more informal methods of training, blended training and training that relates to real classroom settings and collaboration between teachers"*, such as Wastiau et al.(2013) refer. In this way, a MOOC offer, maybe, could fit teachers' training preferences better.

Taking all these data into account, the second MOOC is mainly directed to teachers that want to incorporate ICT to its educational practices, as well as for students with basic digital competences,

although other professionals can take advantage of it.

The course was designed for users of the three most popular operating systems: **Windows, MacOSX and Linux**, offering alternative tools for each of them.

Three curators undertook the design of the course structure, contents, activities and assessment. The MOOC main structure includes the following modules:

- **Module 0**: Presentation.
- **Module 1**: Autonomous Video production and edition.
- **Module 2**: Youtube and its edition tools.
- **Module 3**: Online tools for creating presentations.
- **Module 4**: Social networks for teaching: Twitter, Facebook.
- **Module 5**: Google+, Youtube and streaming presentations.
- **Module 6**: Tools for online self-assessment (test and rubrics).

Main contents are delivered by video, basically by screencasts or prezzis (see Figure 6)

Figure 7. Some examples of the types of videos used in the MOOC

Also, the MOOC counts on a Facebook site (AprenTIC) and relies in some activities in a Facebook group (see Figure 8).

Figure 8. Social network of the MOOC in Facebook

This MOOC has been already offered in two different editions along 2013 (Miriadax, and UNED COMA platforms) counting with one facilitator during its delivery.

The course is equivalent to 1 ECTS with 30 learning hours and 9 weeks duration. Excellent productions of the participants are also available on the Internet such as prezzis, youtube recordings, hotpotatoes or google tests, etc.

Both courses are being also delivered for UNED members, *Ibervirtual BDC* for UNED new students, helping them to develop those digital competences they might need as distance education students, and *ICT for teaching and learning* for UNED teachers and tutors, as part of their professional development, being formally evaluated and certificated by the IUED, the organism responsible for the training of UNED teaching staff.

Main results of the first editions

Below are some of the main results of the first editions of the two MOOCs. Figure 9 shows the overall number of participants who registered, initiated and completed each MOOC, and the final percentage of accomplishment of those that started.

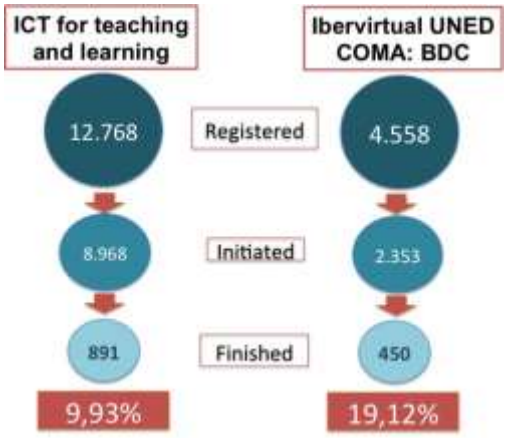


Figure 9. Main results of the two MOOCs in terms of participation

Two voluntary surveys were administered during the course, one at the beginning at one at the end, in order to collect relevant information about the participants, such as sociodemographic data, initial competences, motives and expectations or a final valuation of the course and personal objectives achievement.

Initial survey

1326 participants answered the initial survey of *Ibervirtual BDC*, whereas 4100 participants did it in *ICT for teaching and learning*.

Main Sociodemographic data

Most participants were female in both courses (56,90% female and 43,02% male in *ICT for teaching and learning*; 55% female and 45% male in *Ibervirtual BDC)*; the mean age was 35 years and 37, respectively. Concerning their nationalities, 43 countries were represented in *ICT for teaching and learning* and 32 in *Ibervirtual BDC*, with the largest representation of Spanish people, although many other latin-american countries were represented (see Figure 10 for the nationalities distribution, taking only into account those countries with more participants).

Figure 10. Main results of the two MOOCs in terms of participation

Concerning the **previous training of participants**, 72.54% had a higher education degree and 18% professional training in *ICT for teaching and learning* MOOC, whereas only 57% had a higher education degree in *Ibervirtual BDC* and 22 % professional training (see Tables 1 and 2).

Regarding their **professional situation**, 26,82% were teachers (of any level) in *ICT for teaching and learning* and 25,30% worked in other professions, whereas 17,07% were students. 58% were overall workers in *Ibervirtual BDC* and 14% were students. However, **it has to be stressed that 21-23%, respectively were unemployed in the two courses**.

Table 1: Previous training of *ICT for teaching and learning*

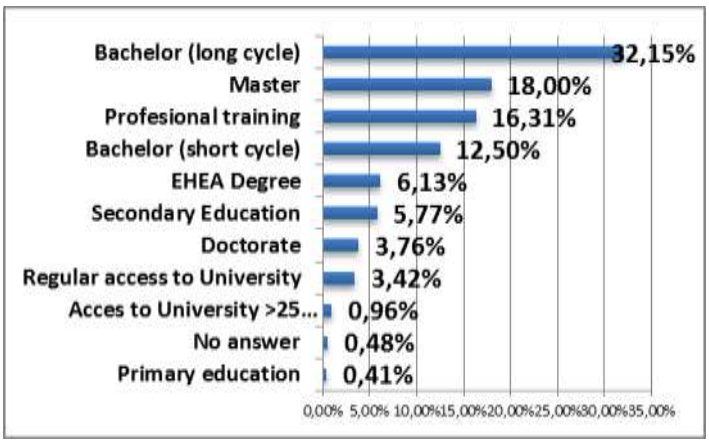
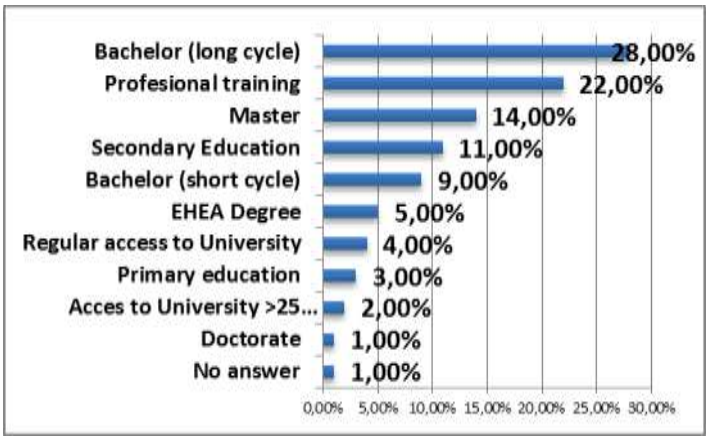


Table 2: Previous training of *Ibervirtual BDC*



With respect to their **main motives** to participate in the course, *ICT for teaching and learning* participants basically wanted to innovate (32,60%) and to improve their teaching methods (26,39%), but also to know about MOOCS and ICT possibilities. *Ibervirtual BDC participants* wanted to develop their digital competence (24%), to be prepared for other MOOCs and online courses (19%), to use their new competences at work (17%), not to be left behind with technologies (17%) or to apply the new skills in their personal lives (15%).

Regarding their **main expectations** about the course, *ICT for teaching and learning* participants expected basically a useful and practical course to be applied in their professional lives (28,03%) as well as to increase their ICT skills for teaching purposes (24,80%); but also to improve their teaching efficiency (17,46%), to be motivated and interested during the course (12,66%) and not a theoretic but a practical experience (12,66%). On the other hand, *Ibervirtual BDC* participants wanted to learn by doing (35%) and to have fun and enjoy this new way of learning (23%); also, they expected an easy and guided course, with clear explanations (17%) and to know other participants sharing the experience with them (14%). A 7% wanted to lose the fear to Internet and the computers.

Final survey

407 participants answered the final survey of *Ibervirtual BDC* and 762 participants of *ICT for teaching and learning*.

Course Valuation

At the end of the course, participants were asked to assess the course it in a 4-point Likert scale (Insufficient, Adequate, Good or Excellent).

The MOOC *ICT for teaching and learning* was highly valued, a 98% considered it as Excellent (62%) or Good (32%) (see Figure 11).

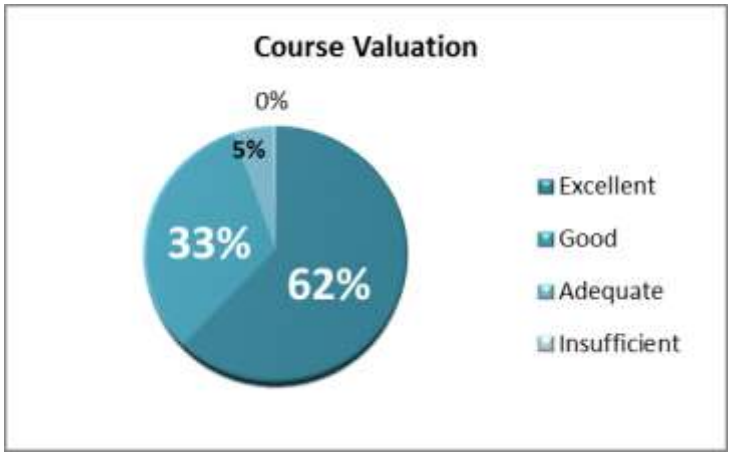


Figure 11. *ICT for teaching and learning*: Course valuation

Among the different items included in the final survey, we want to point up the results of the answers to three of them, as they clearly show that nearly all participants were thinking about applying what they have learned to their professional practice, and to continue their training in similar courses. Also, 47,84% have thought about designing their own MOOC in the future (see table 3).

Table 3: Uses of the new digital skills after the course

After the experience …	YES	NO
Are you planning to apply soon what you have learned to your professional practice?	**93,58%**	6,42%
Are you planning to participate in a similar course?	**95,28%**	4,72%
Have you considered designing your own Massively Open Online Course?	**47,84%**	52,16%

The MOOC *Ibervirtual: BDC* was also highly valued. A 92% considered the course as Excellent (54%) or Good (38%) (see Figure 12).

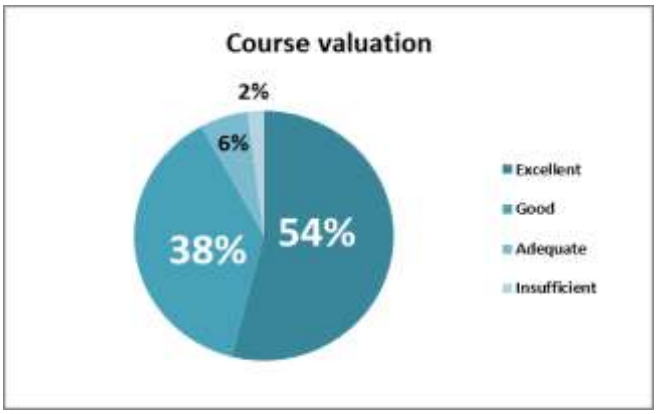


Figure 12. Ibervirtual UNED: Basic Digital Competences. Course valuation

Finally, we want to select one relevant item among others of the final survey. Participants were asked: "**Do you feel prepared to participate in other online courses like this one?**" A 67% considered they were fully prepared, and a 26% quite prepared. In sum, a 93% of participants felt already prepared to take advantage of the offer of open and online courses in the future (see Figure 13).

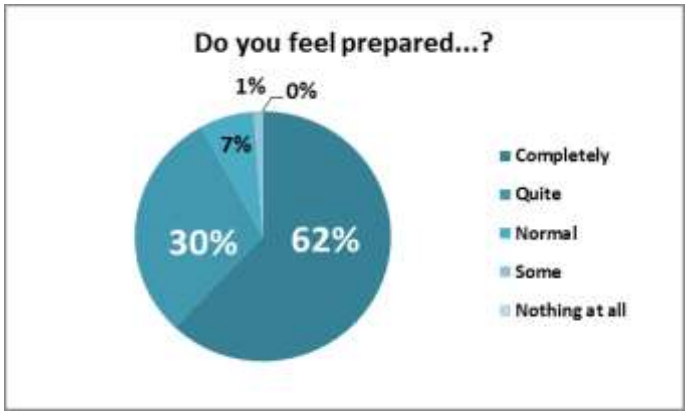


Figure 13. Ibervirtual UNED: Basic Digital Competences. Distribution of the responses to the item "**Do you feel prepared to participate in other online courses like this one?**"

Conclusions

The results of the first editions of both courses are hopeful. First, MOOCs completion rates usually go from 10 to 20% (Jordan, 2013). Thus, our MOOCs are among these rates, although *Ibervirtual UNED BDC* appears to be in the upper rates. Taking into account that our MOOCs' main goal was to help people with lack of digital skills, this is a good result.

With respect to the MOOC *ICT for teaching and learning*, the high levels of satisfaction of participants could be indicating, not only that they felt better prepared to introduce ICT in their professional practice, but also that these *peer to peer* support and collaborative training system could be motivating for them. In accordance to the *Survey of Schools: ICT in education* report: "*Although online resources and networks are widely available in Europe, they are a relatively new way for teachers to engage in professional development, and only a minority is exploiting their benefits"* (2013, p.168); so, MOOCs can be explored as new effective ways for teacher's training as we have started in the UNED itself. Also, based upon our own results, we can confirm that *MOOCs creat network ties that have the potential to continue as sustainable and relevant personal and profesional connections beyond the boundaries of the course itself* (McAuley et al, 2010, p.35).

On the other hand, the MOOC *Ibervirtual UNED COMA: Basic Digital Competences* has contributed to the main goal of "*widen access to education at all levels, both formal and non-formal, in a perspective of lifelong learning, thus contributing to social inclusion, gender equity and special needs education"*, such as the Paris OER Declaration (2012) pointed up, by means of helping people to develop basic digital competences, specially women, such as the European Digital Agenda pursues and the Ibervirtual Project is compromised with.

This MOOC has received a substantial Spanish and latin-american attention in the media and international organisms. It has been referred on the websites of the SEGIB (Secretaría General Iberoamericana), UNIVERSIA or the Spanish Television[90], as well as it has been diffused by different universities websites such as UAPA itself or the Universidad Autónoma of Honduras.

Also, it is worth to stress that the project Ibervirtual was mentioned in the *XXII Iberoamerican Summit* of 2012 with special aknowledgment for:

"*The contribution of the project Ibervirtual to the improvement of Distance Education Quality in the region, as well as the generation and enlargement of educative opportunities through the implementation of MOOCs,* Cursos On Line Masivos en Abierto (COMA)".

Finally, we can conclude with some main ideas:

- In the XXI century, digital competences development is a relevant issue in the political agenda of all international organisms all over the world.
- We can make use of MOOCs for the development of basic and advance digital competences in students, teachers, and citizens in general.
- MOOCs can help, then, to break the digital divide.
- As institutions, we also can make use of MOOCs for new students training in basic competences and orientation as well as for teachers' training (both induction and professional development programmes).
- Courses should be very practical and offer an organized interaction and evaluation system.

References

Durall, E.; Gros, B; Maina, M.; Johnson, L. and Adams, S.(2012). *Technology Outlook: Iberoamerican Tertiary Education 2012-2017*. Austin, Texas: The New Media Consortium. available at http://www.nmc.org/pdf/2012-technology-outlook-iberoamerica_SP.pdf

European Commission (2013). *Digital Agenda Scoreboard 2013*. Available at http://ec.europa.eu/digital-agenda/sites/digital-agenda/files/DAE%20SCOREBOARD%202013%20-%20SWD%202013%20217%20FINAL.pdf

Ferrari, A. (2012). *Digital Competence in practice: An Analysis*. JRC Technical Reports. European Commission. doi:10.2791/82116. available at http://ftp.jrc.es/EURdoc/JRC68116.pdf

Horizon Shortlist Report (2013). *Horizon Shortlist Report, 2013, Higher Education Edition*. Available at http://www.nmc.org/pdf/2013-horizon-higher-ed-shortlist.pdf

Johnson, L; Adams, S. and Cummins, M. (2012). *The NMC Horizon Report: 2012. Higher Education Edition*. Austin, Texas: The New Media Consortium.

Johnson, L., Adams Becker, S., Gago, D., Garcia, E., and Martín, S. (2013). *Technology Outlook for Latin American Higher Education 2013-2018: An NMC Horizon Project Regional Analysis*. Austin,

90 http://www.rtve.es/alacarta/videos/uned/uned-universalizar-educacion-iberoamerica-22-03-13/1729925/

Texas: The New Media Consortium. Available at http://www.nmc.org/pdf/2013-technology-outlook-latin-america-EN.pdf

Jordan K. MOOC Completion Rates: The Data. The MOOC Project, 2013 [published 2013 April]. Available from: http://www.katyjordan.com/MOOCproject.html

ESSIE (2012). *Survey of Schools: ICT in Education. Benchmarking access, use and attitudes to technology in European schools*. European Schoolnet/Université de Liège, SMART 2010/0039, European Commission. Available at http://ec.europa.eu/digital-agenda/sites/digital-agenda/files/KK-31-13-401-EN-N.pdf

European Parliament and the Council (2006). *Recommendation of the European Parliament and the Council of 18 December 2006 on key competences for lifelong learning*. Official Journal of the European Union, L394. Available at:

http://eur-lex.europa.eu/LexUriServ/site/en/oj/2006/l_394/l_39420061230en00100018.pdf

Lisbon European Council (2000). *23 and 24 March Presidency Conclusion.* Available at

http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/00100-r1.en0.htm

McAuley A., Stewart B., Siemens G., Cormier D. The MOOC model for digital practice (2010). [Canada]: Social Sciences and Humanities Research Council, 2010. Available from: http://www.elearnspace.org/Articles/MOOC_Final.pdf

Sánchez-Elvira Paniagua, A., González Brignardello, M. P., Martín Cuadrado, A. M., Román Sánchez, M. y Villaba, N. (2013, mayo). *Acciones institucionales innovadoras para la prevención del abandono y la integración del estudiante en la UNED: ¿qué hemos conseguido hasta ahora? IUED. COIE*. VI Jornadas de Redes de investigación en innovación docente de la UNED. UNED, Madrid. Video available at http://www.canaluned.com/carreras/informativos-y-culturales/monografico-sobreinvestigacion- y-prevencion-del-abandono-iii-y-clausura-de-las-jornadas-12302.html

Santamaría, M. y Sánchez-Elvira, A. (2009). Las claves de la adaptación de la UNED al EEES. En M. Santamaría y A. Sánchez-Elvira (Coord.) (2009). *La UNED ante el EEES. Redes de Investigación en Innovación Docente 2006-2007* (pp. 19-54). Madrid: UNED.

Wastiau, P., Blamire, R., Kearney, C., Quittre, V., Van de Gaer, E., & Monseur, C. (2013). The use of ICT in education: A survey of schools in europe. *European Journal of Education, 48*(1), 11-27. doi:10.1111/ejed.12020

UNESCO (2012). 2012 Paris OER Declaration. available at

http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/Events/Paris%20OER%20Declaration_01.pdf

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Transformation of a Conventional University into an e-University in Emerging Smart Society (Case of MESI)

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Abstract

Over the centuries, the role of universities has remained unchanged, they were a heart of production and reproduction of knowledge and skilled labor force. Although the functions of production, reproduction, storage, and spread of knowledge were performed by other institutions (research institutes, libraries, museums, etc.), universities still have a firm grip on training highly qualified personnel becoming a monopoly in this sphere.

But in the second half of the 20th century, external media environment has changed dramatically. The information society / knowledge-based society / smart society began to emerge. Under such conditions, when computers, the Internet, and later mobile devices have become ingrained in our everyday life, the model of information and knowledge transfer changed a lot which caused elimination of the monopoly of conventional universities. There appeared new providers of education (including higher education) which started actively using new learning technologies.

Conventional universities found themselves facing new challenges: how to hold their leadership, how to retain traditions – and at the same time not to be out of date and not to lag behind; how to attract and retain students who grew up in the information age in the long-established educational structures tailored for the industrial society?

The authors of this article consider some of the key features of the information / knowledge / smart society where the conditions for transformation of a conventional university into a modern e-university appear.

Keywords: information society, knowledge society, smart society, smart education, e-university

The world has entered the era of the information society which is specifically characterized by rapid development of information technologies and, on their basis, development of the information and knowledge industry embracing all spheres of life.

Based on the works of such thinkers as Fritz Machlup, Peter Drucker, Marc Porat, Daniel Bell, Alvin Toffler and others, and summing up the current approaches to interpretation of the concept of "information society", we can say that now it means the following:

- the society of a new type, emerging as a result of development and convergence of information and communication technologies;
- the knowledge-based society where the key element of well-being of each person is the knowledge gained through unhindered access to information and ability to work with it;
- the society in which the exchange of information has neither time, nor space, nor political boundaries, where scientific data processing can help make better and more grounded decisions in order to improve the quality of life in all its aspects;
- the society, which, on the one hand, favours interpenetration of cultures but, on the other hand, opens up new possibilities for each community in using their own potential.

Among the key parameters of the information society there are the following ones:

- availability and affordability of information resources needed for professional or personal purposes, which every member of society, a group of individuals, organization or institution can have access to at any time;
- availability and affordability of state-of-the-art IT and communication solutions;
- creation of a developed information structure allowing to continuously update information resources in the amounts necessary to address the challenges of social, economic, scientific and technological development.

Intensive development of new information and communication technologies makes the information exchange totally new and becomes a driving force of economic and social changes in the world. It is due to this process we can say that the world is entering a new stage of its evolution – the information society characterized by the formation of completely new economic, social and cultural relations in our life.

In the information society, the system of economic management is absolutely different, we are the witnesses of the "management revolution" which is meant to replace the rigid hierarchical structures of the past with flexible network horizontal structures well suited for quickly responding to changing external conditions.

Back in 1993, Peter Drucker defined the role of knowledge as follows: "The basic economic resource – "the means of production", to use the economist's term – is no longer capital, nor natural resources (the economist's "land"), nor "labor". *It is and will be knowledge"* (Drucker P.F., 1993).

Thus, P. Drucker understands knowledge as the key resource. Analysts of the World Bank set apart the concepts of "knowledge" and "resources." So, the 1998-99 World Development Report outlines

that knowledge, not capital, is the key to sustained economic growth and improvements in human well-being. “For countries in the vanguard of the world economy, the balance between knowledge and resources has shifted so far towards the former that knowledge has become perhaps the most important factor determining the standard of living – more than land, than tools, than labor” (World Development Report, 1998).

In any case, knowledge (as a resource or a key factor) is beginning to play a leading role in the structure of productive forces of the information society. Hence, the new term “knowledge society” which describes the core of the information society more fully.

Such factors, which traditionally characterized superiority of one state or another, as the size of the territory, population, availability of natural resources, energy security, back off. A new economy is emerging – the knowledge economy where the main source is knowledge and communications. Knowledge-intensive industries contributing to the intensive nature of economic growth prevail in the industrial and service sectors. Products of such sectors have a large value added share, they demonstrate a high rate of growth in production and sales. The employment pattern in the information society is fundamentally different from that in the industrial one. Only 2–3% of population is employed in agriculture, 15–20% in mining and manufacturing industries, and the rest work in the services sector much of which is a part of the information sector. According to the World Bank, the dominance of human capital is particularly marked in the most developed countries, where natural capital is calculated to account for just 2–5 percent of aggregate wealth (Soubbotina T., 2004). “Estimating the value of human capital using the lifetime income approach for a sample of 13 (mostly high-income) countries yields a mean share of human capital in total wealth of 62 percent—four times the value of produced capital and 15 times the value of natural capital” (Hamilton K. and Liu G., 2013).

As we have already mentioned, not only knowledge characterizes the new knowledge economy. Technologies has changed the structure of the economy crossing out the earlier understanding of space and time. Current network technologies offer an opportunity not to take such factors into account (or not to take them into account to a greater extent). Extraterritorial communities of practicing experts are being shaped who can address any intellectual challenges. In recent years, a new term “Wikinomics” (derived from “wiki”, one of the web 2.0 tools) was coined.

It is safe to talk about the formation of new environment for economic activities – global network economics and e-commerce. A fertile soil for development of remote jobs is created. As long ago as 2003, 20% of the workforce made use of telecommunication access. Telecommuting becomes more and more popular. In April 2013, the Labor Code of the Russian Federation was supplemented with new Chapter 49.1, “Special Procedures for Remote Workers” (The Fedral Law No. 60-Ф3).

Development of ICT causes major changes in political life of the society (access to draft laws; opportunity to address to the government; e-Government project, first successfully implemented in Singapore and later used by a number of other countries, including Russia).

Development of communication channels and means of information transfer and exchange brings the world to a new “evolutionary cycle” transforming the information society into what now is usually described by the term “Smart Society”.

"Smart-society is a new quality of the society where a combination of using hardware, services and the Internet by trained people results in fundamental changes in interaction of subjects making it possible to get new effects – social, economic and other benefits for better well-being" (Tikhomirova N., 2013).

The idea of Smart Society more precisely expresses the intentions to improve all aspects of human life, using ICT more and more in new industries. This policy has become a beacon for the United States – a global Internet leader, as well as for the Republic of Korea, a number of European countries, Japan and some other countries. Formation of the Smart Society manifests is becoming a global trend.

Some authors consider the Smart Society to be the next stage of development of the information society in which we live today. Others propose that "Knowledge-based Society and emerging Smart Society … we regard as new quality of the Information Society" (Meskov, V. et all, 2012).

The Internet dissolves boundaries of economies, societies and industries, changing the rules of the game, opening the possibility of occurrence of risks as well as new opportunities. Smart is a property of an object characterizing integration of two or more elements within such object which were not put together earlier, and such integration involves Internet technology. For example, Smart-TV, Smart-Home, Smart-Phone. Smart-technologies result in greater labor mobility: in education, in public service, and in many other sectors of employment.

Development of knowledge society, digital and network technologies, as well as progressing towards the so-called eco-society ("green society") are at the heart of formation of Smart-society. It is formed in such a way that "smart" work which is shaped by "smart" life, government and business, based on "smart" infrastructure and "smart" citizens which play a key role in creation of smart-culture. And development of such industries as Smart transportation, Smart healthcare, Smart energetics, Smart food, etc. will ultimately result in emergence of Smart-world.

In the Smart society, technologies formerly based on information and knowledge are transformed into technologies based on interaction and exchange of experience – Smart technologies. They turn hard work into "smart" one and make innovative changes in management strategies. It means that the society needs a more creative and open attitude so that human virtues based on flexibility and ingenuity become priority ones. People change themselves. A generation came to our life who have never known the world without the Internet and mobile technologies.

In the information / smart society and knowledge-based economy, quality of work, its qualification become of crucial importance. There is an increasing demand for workers with high professional qualifications, highly educated, capable of strategic planning. It changes the relationship between employees and employers being the basis of "economic cooperation".

The role and the level of responsibility of educational system which must guarantee a high level of literacy, prepare a sufficient number of experts, including academic elite, are increasing. The foresight for 2030 states that in future "the demand for qualified people exceeds the supply" and the "strategies for future-based workforce planning are needed to avoid skill shortages" (Trend Compendium 2030, 2011). The existing educational systems with used educational technologies cannot cope with these challenges. For example, not relying on higher education institutions,

"companies are putting renewed focus on building capabilities, not just finding them. The "war for talent" is shifting – and is becoming the "war to develop talent" (Resetting Horizons, 2013).

But educational technologies are changing. Distance learning and e-learning are evolving. An educational paradigm is changing from the concept of conventional education to lifelong learning. The contours of transition to a new paradigm – a paradigm of open education – have been outlined (Meskov, V. et all. 2006). However, the structure of formal higher education and traditional high schools which have taken shape by the beginning of the 21st century are difficult to restructure, and today many much-in-demand educational functions are exercised by other providers.

When creating an innovative educational system and integrating a new type of high schools, it is necessary to consider the following factors:

- there is a new role of knowledge as a key driver of economic development resulting in emergence of LifeLong Learning;
- new providers of higher and further vocational education services enter the market under the conditions of "borderless education" – open, electronic, distributed universities whose academic programs are available regardless of space and time limits;
- methods of services provision and training schemes organization within the higher education system are changing as a result of the revolution in information and communication spheres;
- today's information and communication structure rips universities and teacher of their knowledge monopoly and calls for open education, the first signs of which have become open educational resources (OER) and massive open online courses (MOOCs);
- importance of market mechanisms in higher and further vocational education is growing and the global market of highly developed human capital assets is hatching;
- it comes into the open that there is a need to stick to an integrated approach to education as a unified system of formal, non-formal and informal learning, an approach that takes into account the fact that higher education does not only contribute to development of human capital assets, but also performs such important functions such as shaping academic and social capital assets, as well as is an important global-scale public good;
- development and application of knowledge is the main factor of social and economic progress, and higher and further vocational education is necessary for generation, dissemination and application of knowledge, as well as for creation of technical and professional potential;
- higher and further vocational education directly affects the national economy efficiency, which, to a large extent, determines the quality of life in the country and its ability to participate in global economic competition;
- higher education institutions contribute to implementation of the strategy of economic development based on knowledge and anti-poverty initiatives through:

a) training skilled and flexible workforce, including highly skilled scientists, professionals, technicians, teachers of basic and secondary education, as well as future leaders of government agencies, state civil services and enterprises;

b) formation of new knowledge;

c) creating opportunities to gain access to the existing global information database and adapting it for a specific country.

The above factors give an insight into the idea that sustainable transformation and economic development are impossible without an innovative system of higher and further vocational education contributing to shaping the national potential.

In addition, in the Smart society one of the most important becomes training of personnel having imagination, creative potential, being able to work and think in a new world. Multifaceted human culture has acquired yet another facet – now we have information culture, and a modern civilized individual is notable for the ability to quickly and efficiently find and use information. A specialist who does not have practical skills for working with social networks, electronic sources, who can not compile own knowledge bases will be counterproductive and therefore non-demanded.

It is a task of a Smart university to train a professional having skills necessary to work in the Smart society. It is a university where all trained people taken together and technological innovations and the Internet results in a new, relevant Smart society, the quality of processes and outcomes of educational, research, commercial, social and other activities.

It is absolutely clear that in such a university the nature of learning process is changing. “Smart learning process is a learning process involving technological innovations and the Internet, which gives students an opportunity to acquire professional skills based on systematic multi-dimensional vision and study of subjects taking into account their multifaceted nature and continuous updating of their content. First and foremost, Smart education means supporting the needs of learners and educators” (Tikhomirova, N., 2012).

The concept of Smart education includes the following elements: flexibility, suggesting availability of a large number of sources, the broadest variety of media (audio, video, graphics), ability to be quickly and easily adjusted to the level and needs of a learner. In addition, Smart education must be easily manageable – when an educational institution can easily make its educational process flexible, and integrated – that is constantly charged by external sources.

Smart education offers new challenges for teachers. They must not only be well-informed in their professional sphere, but they also must know a lot of information, knowledge, resources, use different methods in their work with students. At the same time Smart education offers new possibilities for teachers: they can share experiences and ideas, pursue science more, personalize their course depending on their goals and competences of a learner, to save time brushing up and updating the existing content rather than creating it from scratch.

Under the concept of Smart education, a modern training course takes on new features. It must both guarantee quality education and motivate students to study. It is almost impossible to catch the interest of a present-day student who has access to numerous electronic materials with a simple text handbook. It is necessary to create a script of all training activities of the course which will be of interest for students, encourage them to pursue creative and academic activities. Training courses must be integrated, that is must include both multimedia fragments and external electronic resources. 80% of a Smart course must consist of external sources, must be developed on their own through connections to a variety of channels, allowing students to create the content. A modern

course is a combination of actions, and reading a textbook takes not more than 20-30% of the time here.

The same requirements (flexibility, integration, learner-tailored approach, etc.) must be met by a Smart textbook, too. It is a comprehensive educational material created and updated based on technological innovations and Internet resources and containing systematic presentation of knowledge in the domain area. Among the requirements to creation of a smart textbook is the use of cloud technologies in the process of its creating and using, advanced multimedia use opprtunities, interactivity of learning tools, automatic filtering by the level of mastering the material (knowledge rating), access and use subscription, teamwork of co-authors and readers in the Internet, content creation in the personal area of the student.

Moscow State University of Economics, Statistics and Informatics (MESI) is currently preparing to the first steps for transition to a Smart education model in its practices. The university was founded in 1932 and for 60 years has been structured as a conventional university. In the early 90s, during the period of rapid development and distribution of information and communication technologies (ICT), the university began to improve its material and technical base, to build its ICT infrastructure and to introduce ICT into the educational process. The transformations affected all aspects of the university life: university management, quality management, human resources management, financial management, taching and learning process, etc. Alongside with fitting-out and constant re-equipping of the university with state-of-the-art equipment, the personnel (both teaching and administrative) was and is trained and re-trained; there were elaborated and are constantly updated such training courses as Teacher in e-Learning Environment and Student in e-Learning Environment. The main management task was integration of the university into the information space, and a more braod task was fusion of the university into the modern information society so that its employees, and most importantly its students, were not divorced from real life, were armed with the latest knowledge and skills and graduates were trained at the highest level, were competitive in the labor market and prosperous socially and personally.

Of course, the information society affected the structural and functional relationships in the management of the university, which is shown in the general chart in Figure 1.

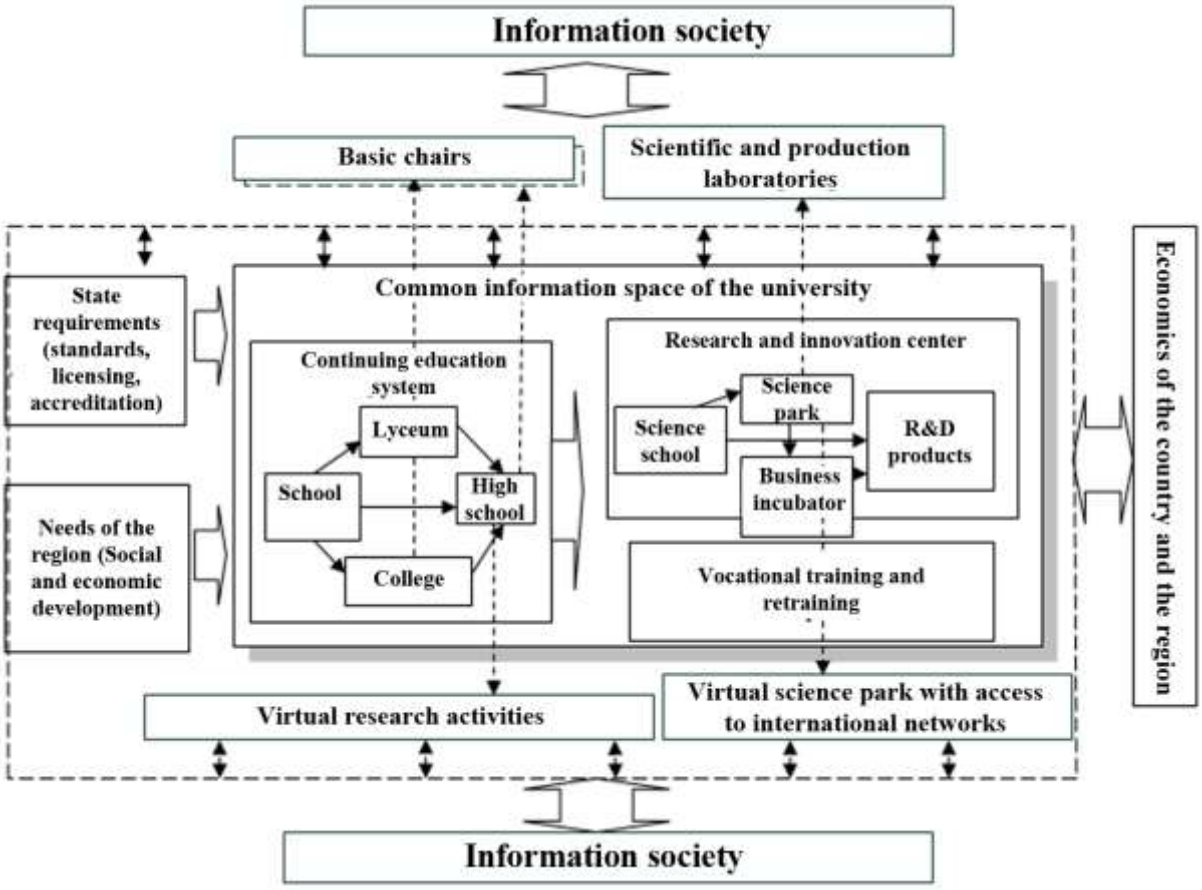

Figure 1. Impact of the Information Society on the Structural and Functional Relationships in the Management of a Modern University

Information technologies and e-learning are changing the conceptual model of educational activities. The main features reflecting these trends are: accessibility, mobility, flexibility, distribution, customized approach, centralization of learning and teaching aids materials and teaching staff, effective adaptation of graduates to work in modern conditions only using electronic technologies and on their basis. The concept is based on the following assumptions:

- the goal of university management is to have effect on the educational process. The latter involves the capability and need of transforming the most common type of economic management of a university, based on the conventional organization of the educational process, into the type of economic management, based on the use of e-learning technologies in its activities;
- the use of e-learning technologies in organizing educational process is a specific manifestation of the general conditions of formation of the economic management pattern of a university, integrated into the information environment, and emergence of a university of a new type – an electronic distributed one;
- the institutional failure to develop economic and management relations between the universities regarded as business entities, requiring adequate reflection of their specific economic interests, is specified as a factor of such transformation;
- the process of transformation of the university integrated into the information space shows the course of pre-development, including the history and evolution of

institutions of higher professional education;

- the process of becoming a university integrated into the information environment is inevitably bound up with institutional methods and tools of managerial leverage preparation. The availability and, particularly, the completeness of multifunctional use of integrated information educational space of the university largely affect the dynamics and scale of the transformation of the management methods.

As a result of the reforms carried out on the basis of new technologies and introduction of e-learning, MESI became an electronic distributed university which has its branches along with a parent organization; it employs full-time, distance and blended (hybrid) forms of learning; it uses e-learning in all three of these forms; it uses the most cutting-edge technology not only in the educational process but also in its academic, administrative, economic and social activities. The use of state-of-the-art management methods based on the extensive use of information and communication technologies is at the heart of the integrated model reforming.

A generalized model of transformation of a conventional university into an electronic distributed university is shown in Table 1.

Transformation principle	**Strategic goals of the University development**			
	Training of highly skilled professionals	Training of demanded specialists	Ensuring quality and affordability of education	Minimizing transaction costs
Constitutive				
Innovative multidisciplinary center for education, science and culture	Use of the best teachers, traditional textbooks in the educational process	Offering a wide range of educational programs and elective courses	Training of specialist taking into account the competencies, agreed upon with employers' associations, use of flexible technologies in the learning process	One single business unit combines both educational, scientific and research, and business processes when setting up some of the scientific units in the business environment
Electronic technologies as a basis for organizing educational process, staff communications,	Used at the level of individual disciplines. In administrative activities: at the level of local programs	Elaboration and implementation of e-learning system, study of application software and	Electronic technologies of knowledge accumulation and transfer, supporting its	Full-scale e-learning, in all forms and at all levels of education, forming the

teachers and students of the university and activities of the university as a whole		students' independent work on specific disciplines of the curriculum using information resources.	acquisition and controlling the process, introduction of the system for measuring e-learning quality	basis of modularity of educational programs. Elaboration and implementation of an integrated information space of the university. Introduction of e-deanery
Internationalization of quality criteria of educational services	Integration of international and Russian experience through associations, communities, producing new trends	Objective to undergo independent public accreditation of educational programs	Certification of the University quality management system. Meeting regulatory licensing and accreditation requirements	Establishing educational consortia and alliances based on uniform requirements for educational process organization, uniform educational and academic resources, implementation of cross border programs on the basis of electronic technologies
Legal framework of the educational process, as well as licensing and accreditation of higher professional educational institutions	In strict compliance with the regulatory framework	Elaboration of internal guidelines regulating certain activities	Adoption of internal standards regulating all distributed educational activities	Elaboration and testing of new regulations, lobbying their adoption
Regulatory				
Competitive market of	Active open, enrollment	Marketing campaign based	Continuous monitoring,	Introduction of the CRM-system and call-

educational services	campaign, PR, Internet marketing	on thorough and comprehensive analysis of the needs of the customers	analyzing needs of applicants and students in order to provide quality and timely services	center, Web 2.0 tools, ICQ-counseling. Work with corporate customers, business partners, academic institutions
University management	Conventional management system	Introduction of strategic planning, quality management system, personnel management, marketing management	Results-driven contract-based employees compensation scheme, educational content quality management Management of a discipline, program, department, the Institute as a whole taking into account needs of students and trainees	Financial management, with regard to projects, objectives, processes, budgeting, implementation of a Balanced Scorecard system, principles of "self-learning organization"
Organizational structure of the University management	Line and staff management	Line and staff management having project organization features	Process organization	Matrix and project organization
Academic teaching staff interaction system	Conventional chair with a fixed set of disciplines, organizing conventional educational process	Search and attracting academic teaching staff, holding popular on-demand courses, attracting foreign teachers, use of information technologies for educational	Monitoring quality of work of teaching staff from the point of view of students and trainees, organization of external expertise of the content in order to improve the quality of the educational process, teaching	Academic teaching staff from any city are members of distributed extraterritorial chairs using e-learning information technologies, educational courses involving information disciplines centers, establishing basic

		process	and learning aids, increasing the level of responsibility of the content authors for timely updating of aids	chairs
Academic support of educational process	Use of standard textbooks, elaboration of learning and training aids by the University	Elaborating learning and teaching complex aids, library stock digitization	Creation, updating and control over of the use of electronic content in all disciplines of the curriculum with the help of global information resources	Implementation of the academic skills management system based on the information disciplines centers

Table 1. Transformation of a Conventional University into an Electronic Distributed University

Thus, an electronic distributed university has been formed as an integrated educational complex including a university delivering educational programs with the help of electronic technologies, and its branches, representative offices, centers and educational resources access points forming an integrated corporate network and delivering educational programs on the basis of the integrated educational information environment, using uniform content, library resources, one and the same teaching staff, single administration points, having an extra-territorial structure (including real and virtual space) and developing as an innovative multi-disciplinary center for education, science and culture determining, to a large extent, the level and potential of social and economic development of the country (Tikhomirova N., 2009).

An integrated communications system of educational process management and organization provided the basis for an electronic distributed university. This system is characterized by its learner-centered model, namely: customized delivery of knowledge; flexible schedule; involvement of the learner in the course elaboration; knowledge timeliness; presentation of materials using the technologies that are understood by students; mobility; accessibility and affordability; having a choice. This educational process management and organization system is illustrated in Figure 2.

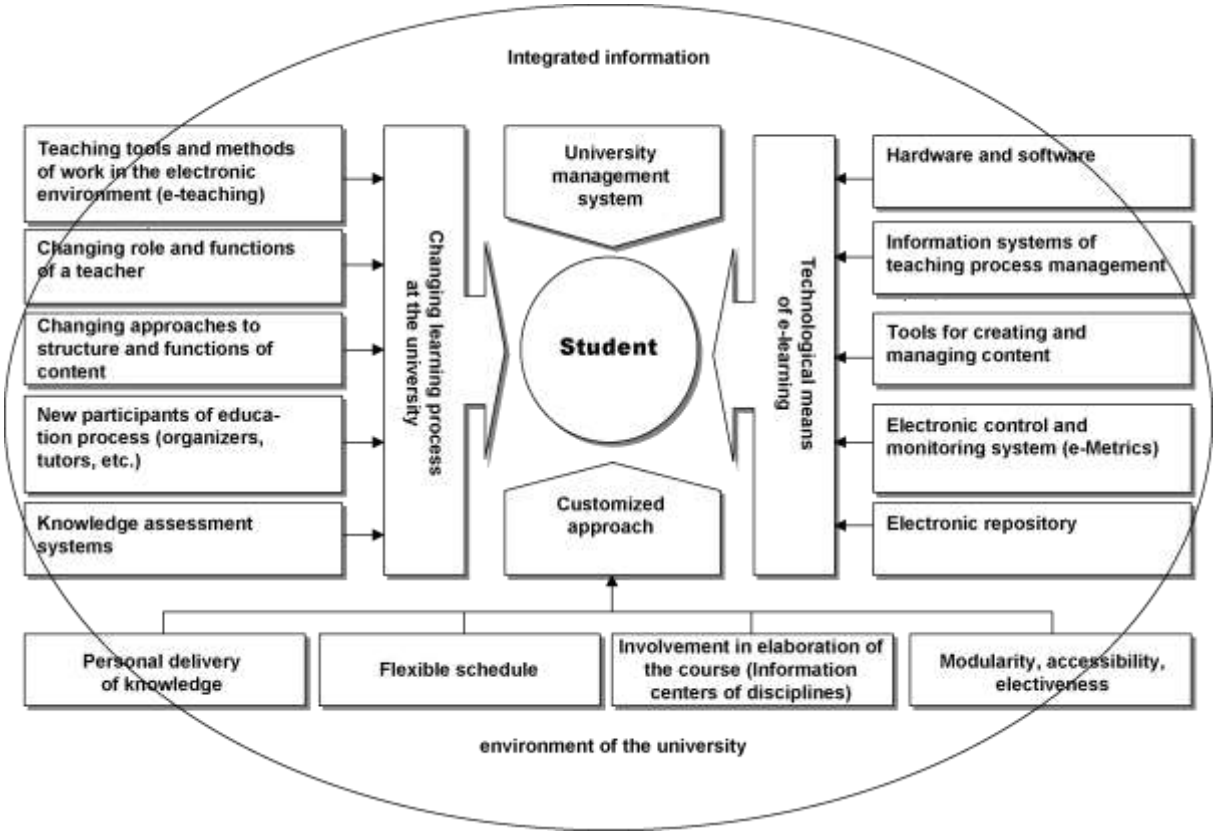

Figure 2. Communicative and integrated system of management and organization of educational process

As already mentioned, at a new stage of its evolution the information society acquires features of the Smart society, and a university, if it wants to work in vanguard, must transform into a Smart university. This is the goal MESI sets for itself based on the achievements in establishing an electronic distributed university.

On its way towards a Smart university, MESI outlines the following growth areas:

- Building a Smart university where the use of information and communication technologies allows each employee and student (including individuals with disabilities) to develop and fulfill their creative, academic and professional potential.
- Formation of Smart education understood as “a union of educational institutions and teaching staff in order to pursue joint educational activities in the Internet on the basis of uniform standards, conventions, and technologies” (Tikhomirov V., Tikhomirova N., 2012).
- Promoting formation of the Smart society in Russian through elaboration of methodological procedures and training personnel able to use the advantages of the information society and knowledge-based economy to enhance intellectual, creative and spiritual potential of the country.
- Creation of an electronic distributed environment ensuring integration of the efforts of government authorities, businesses, educational institutions and other stakeholders in order to develop and implement projects aimed at development of the Smart society.

Central repository of knowledge, updating content and transfer of knowledge within a distributed network, organization of distributed chairs, education quality management system, active use of web 2.0 technologies, cloud infrastructure, mobile access – these are the features of the advanced MESI. MESI is developing new technological environments taking into account the Smart university concept: virtual campus, electronic library allowing for inter-university exchange as well as e-learning personalized programs; Course Lab (e-courses elaboration, collaborative technologies). At the same time, MESI is developing its Smart IT environment: Service Desk, WaaS, private cloud are being implemented.

Creating a Smart university, MESI seeks to stimulate interest in intensive development of all sectors of the Russian economy, including knowledge-intensive industries and creation of a green economy.

MESI is implementing the Smart Russia project, which is aimed at promoting innovative development of different regions and the country as a whole by providing a methodological and technological framework, at supporting implementation of the projects focused on solving the problems of the society and the economy. Implementation of the project includes creating a web portal, conducting research works in the field of forming the Smart society, promoting elaboration of educational programs meant for training specialists for the Smart society and the Smart economy.

References

Drucker, P.F. (1993). *Post-Capitalist Society,* New York, HerperCollins Publishers, 1993.

Hamilton, K. and Liu, G. (2013). *Human Capital, Tangible Wealth, and the Intangible Capital Residual.* The World Bank, Development Research Group, Environment and Energy Team, March 2013, http://elibrary.worldbank.org/docserver/download/6391.pdf?expires=1381064806&id=id&accname=guest&checksum=5BC7841FDCE5DF7D35023DD66E9AB5DE

Meskov V., Smirnova I., Mamchenko A. (2006). *Open Content & Knowledge Societies: Definitions, Methodology & Manifestations,* Digital Learning, Volume II, Issue 4, April 2006, http://www.digitallearning.in/aprmag06/open_content.asp

Meskov V., Smirnova I., Mamchenko A. (2012). *Education for the Knowledge-Based Information Society. Cognitive Paradigm, Models and Implementations,* Information Technology in Developing Countries. A Newsletter of IFIP Working Group 9.4 and Centre for Electronic Governance, Volume 22, No. 3, November 2012, http://www.iimahd.ernet.in/egov/ifip/nov2012/mamchenko.htm

Resetting Horizons – Human Capital Trends 2013, Deloitte Development LLC, 2013. http://www.deloitte.com/assets/Dcom-BruneiDarussalam/Local%20Assets/Documents/Resetting_Horizons_Global_Human_Capital_Trends_2013_20130416.pdf

Soubbotina T. (2004). *Beyond Economic Growth: An Introduction to Sustainable Development,* Second Edition (2004), Washington D.C.: The World Bank, 2004,

http://www.worldbank.org/depweb/english/beyond/global/chapter16.html

The Fedral Law No. 60-Ф3 of 05.04.2013 *On Amendments to Certain Legislative Acts of the Russian Federation* (in Russian), http://www.pravcons.ru/publ24-04-2013-1.php

Tikhomirova N. (2009). *Management of the Modern University Integrated into the Information Environment: Concepts, Tools and Methods:* a scientific publication (in Russian), Moscow, Finances and Statistics, 2009.

Tikhomirova N. (2012). *Global Strategy of Smart Society Development. MESI on the Way towards Smart University* (in Russian), March 2012, http://smartmesi.blogspot.ru/2012/03/smart-smart.html

Tikhomirov V., Tikhomirova N. (2012). *Smart Education: New Approach to the development of Education* (in Russian), February 2012, http://www.elearningpro.ru/forum/topics/smart-education

Trend Compendium 2030 (2011), Roland Berger Strategy Consultants, http://www.rolandberger.com/gallery/trend-compendium/tc2030/content/assets/trendcompendium2030.pdf

World Development Report 1998/99: Knowledge for Development (1998). Washington D.C.: The World Bank, 1998.

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Implementation of learning badges on undergraduate e-learning courses

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Abstract

Teaching and learning in the 21st century requires new ways of motivation and specific strategies on the part of those involved in education. One of the challenges in education is the definition of technology solutions at the production and management of information and communication, which could enhance the learning experience. This paper focuses on the design and transition of an e-learning model to the massive online open courses (MOOC), with particular emphasis on the implementation of badges to accredited learning. The e-learning model, that already exists, was conceived by the research center for interactive technologies of the New University of Lisbon to the undergraduate students of Portuguese universities.

This paper intends to reflect how the implementation of the learning badges in e-learning courses are made, in its multiple aspects, considering it can be use as a strategy for teaching and learning capable of encouraging motivation. In this way, the article pretends to show that its effective utilization, as an object of motivation, may perhaps be a key for the teaching and learning process.

Keywords: e-Learning, learning badges, MOOC, motivation, accredited learning.

Introduction

The main foundations of the undergraduate e-learning courses can be found in the word e-Learning. There are two points of view that deserve special attention: the first has to do with a change of perspective - in this context learning overlaps with teaching and this change of emphasis defines a guideline whose attention is focuses primarily on the problems of the student and less about the teacher. The second point that deserves mention has to do with the e-prefix that precedes the mention of learning, which determines the electronic of the learning procedures. The core focus of the e-learning courses is to give the students the necessary tools to build their knowledge: anywhere, anytime, 24hour a day / 7 days a week.

However, all the social and learning dynamics are changing because of the worldwide financial crisis. And these budget constraints led to the appearance of MOOC - Massive Open Online Courses - that have their genesis in the creation of content access without costs to the student. James Mazoue,

director of the Office of Online Programs at Wayne State University in Detroit, Michigan, states "MOOCs, as currently designed, address two of the three challenges facing postsecondary education: access and cost. MOOC-based degree programs would not only democratize education, but their scalability would help end the unsustainable trajectory of tuition". (Mazoue,2013)

The individual design of the student curriculum is one of the motivating forces: students want to build their curriculum with the valences they consider essential for the labor market. However, the offer of this curriculum also covers those who are already employed and want to recycle their knowledge. Universities are facing new challenges: firstly the construction of this type of courses allows for greater disclosure and internationalization of the institution, on the other hand, the use of multimedia skills are not a common practice of the academies. A master class for two hours, where the teacher speaks and there are few interventions by the students, is no longer consistent with the reality of MOOC. All the elements of this new reality: structuring and planning programs, new ways of motivation, increase participation, validation and evaluation are now facing different requirements from students, educators and teachers.

CITI's learning experiences

The Research Center for Interactive Technologies[91] has a long path in development of multimedia projects. In 22 years of existence the topic education was one of the main concerns and goals to reach through the different multimedia projects. In this perspective, was conceived the e-Learning model for undergraduate students of Portuguese universities.

However, this outcome was possible thanks to the experiments and projects made over time by the Research Center for Interactive Technologies. Within the context of education, the research center always excelled for the dissemination and development in the wake of scientific and educational areas. To try to delimit the entire process is necessary to mention some important projects:

1. In 2001, the e-TUTOR project was developed to promote the self-formation through the interaction between a user and the virtual agent. The virtual agent or avatar, name Togas, interacts with the user through the instant feedback in the different learning modules. The program was divided into modules and sub-modules where the Togas - a judge with the role of a tutor - or Betty Bit - expert in word processing, spreadsheets and formulas - mediated the learning experience. The aim was to acquire skills in Microsoft programs such as Excel, Word or Outlook. The virtual agent helped the user to learn or recycle knowledge through exercises and review of the content in each learning module. The computer-based learning was the strategy chosen to overcome the biggest obstacle of the target audience of this project: professional classes who feel the need to receive specific training in digital literacy, however, they do not take this need because of status (occupying the top hierarchy of the professional system). In this sense, the use of a graphical multimedia coupled with the creation of a digital individualized tutoring were the solution so that each user had the opportunity to learn when and where they want and at their own pace. Were created several courses in learning model offline and using as support the CD-Rom. In 2002, the project e-Tutor was awarded in the V National Contest of Software, organized by Microsoft, with the

91 Retrieved from http://www.citi.pt

1st Prize Universities for the research work on the first CD-Rom with the courses: e-Tutor E-mail and e-Tutor Access Internet.

2. Other projects deserves to me mentioned such as the Library of Digital Books[92] and The Way of Letters[93]. Both projects financed by the National Reading Plan of Portugal. The first one was designed and developed in 2008 and its aim was to allow children to read different stories and become part of the story, as they can rewrite the ending of the story. Doing that the children could be part of the writers club and see their name in the cover of the book. The project had more than 1 million visitors all over the world and hundreds of people writing their own endings. The second one - The Way of Letters, 2010 - aimed to become an informal learning way for children. They could learn about the letters and some groups of letters. The aesthetics was simple: different planets of letters, in which our friend – a robot - travels with us and we can see the explanation of the letter in a word – how you write the letter and say it, as well.

3. The project for Institute of Technology's Information in Justice. A course with multiple modules in e-Learning and based on MOODLE. The course was created in 2011 and it was a training course for professionals to better coordinate the care and treatment to the public. For this course the video was used as the main vehicle for transmitting the content. It represented real situations that were portrayed in video.

These projects intend to demonstrate part of the investigation of research center. However that is a small part of a big container. The undergraduate courses in e-Learning were the result of several attempts in this field of study.

E-learning courses model

The need to create a model of e-Learning that must be responsive to the requirements was imperative. It was important to formulate proposals for a change in the learning system. This change can take several forms and develop different learning architectures and be innovative in different ways. We will explain the model created and used at undergraduate level in the Faculty of Humanities and Social Sciences, New University of Lisbon.

Its structure can be characterized as a triptych (as we can see on the figure 1): the left side of the screen is a video with the teacher or tutor. As the video runs its essential points appears on the "electronic board" in the center. This type of control panel has the function of a power point.

In addition to presenting the essentials points relate to the video, it can also presents hypertext links to useful images or complementary videos. On the right side appears all the support material needed: supplementary bibliography, papers or other multimedia links. In the last section appear the exercises corresponding to the module.

92 Retrieved from http://www.planonacionaldeleitura.gov.pt/bibliotecadigital/
93 Retrieved from http://www.planonacionaldeleitura.gov.pt/caminhodasletras/

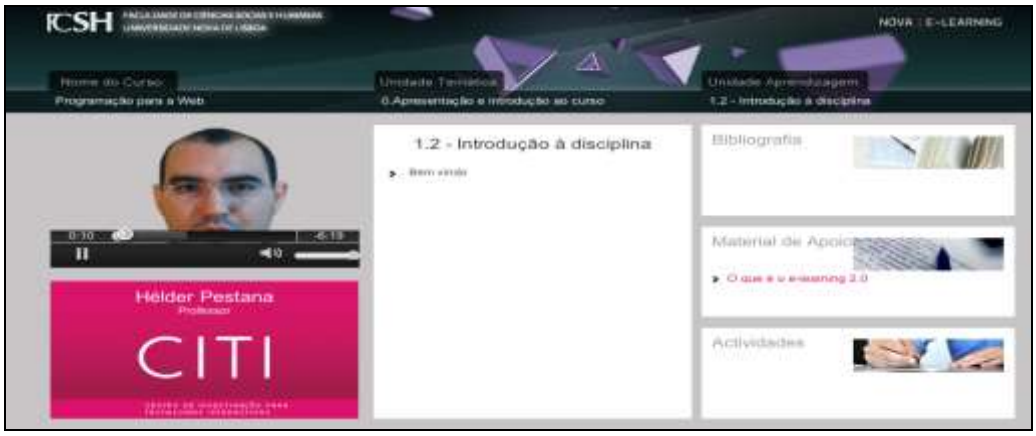

Figure 1. Layout of the e-learning courses

According to the initial guidelines of the concept the courses were thought to be teach in a dual regime: e-learning and b-learning. However, the first edition proved that the e-Learning system runs successfully in undergraduate students. The only time they had contact eye to eye, virtually speaking, was in the presentation of the final project via Skype or Google Hangout .

The courses are organized by major topics and each topic corresponds to different and varied ramifications. Each topic has general goals and specific objectives, as well as an indication of the skills that we want the student to acquire at the end of the course. Both the general and specific objectives aim to provide the student with information and tools to learn concepts, or perform tasks.

The reference of compromise between teacher and student is created by a contract for teaching and learning skills, i.e., in these contract figures duties of the teacher and of the student, as well as the rights of those involved. It is like a contract of sale, in which is stipulated all steps divided by days and weeks of the course. Thus, the students know what they have to do and organize their time depending on the course's work.

After studying every topic and know the general and specific objectives, the student must do all exercises individually. When all tasks are completed the contract between teacher and student is successfully achieved.

The total duration of the e-learning courses is 8 weeks - time determined by the host institution. After selecting the data to build the week content, the selected data is then structured by objectives: general and specific. After consolidating a given part of the content, there should be one or more exercises. It was also determined to use some video to start and complete the module. Then the exemplification are made with video cast, animation, voiceover with pictures, graphics, etc., these elements can be used selectively, depending on the subject and objectives.

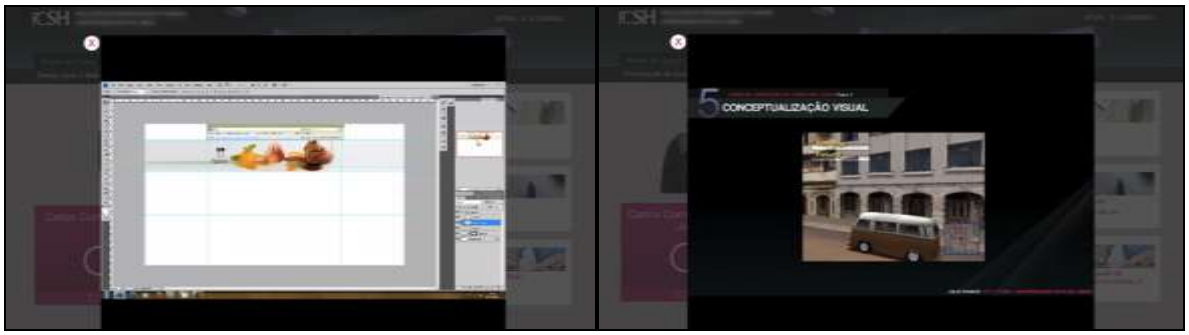

Figure 2. Example of two video casts in the e-Learning course[94]

Regarding evaluation systems it were outlined in two ways: self and peer assessment.

Some essential points that were taken into account in the construction of the evaluation model in this system:

- The evaluation is done online using the Moodle: forum, wiki, written work.
- There is an assessment made on practical multimedia: video, audiograms, infographics, ...
- The final evaluation is the sum of the participation, the exercises and the final work.
- There is an anonymous survey, delivered before the end of the chair to assess the degree of student satisfaction.

The e-Learning courses had some students from other countries that speak Portuguese. And even in Portugal the students are from different cities and different universities. However, only the main institution recognizes the credits to the curriculum of the student in undergraduate studies.

During the three editions of the courses one aspect became clear: there are several people interested in the courses and the majority don't want accreditation for the university curriculum. They simple want to know more about a given area. Their main goal is to have a certificate that refers that they learn that content with the institution. One of our objectives is to reach people that speak Portuguese but live, work or study in other countries. No matter what they do for living, they want to enhance their personal curriculum anytime and anywhere. With this concern in mind the invitation to be part of a MOOC was interesting and reliable way to overcome the difficulties that we faced in e-Learning course in a small spectrum.

From the institution to MOOC

The designation MOOC stands for Massive Open Online Courses. The massive use, free, without linkages to institutions, makes the MOOC have recognition and a solid exponential growth since its inception. There are several institutions that develop courses to integrate the MOOC model, whether in the United States and in Europe. In a brief historical digression is important to note some dates that define and characterize the evolution of the MOOC.

In October 2002, is consolidated the first attempt at collaboration and building material for the

94 The left image shows a “how to do” video cast and that is a type of video used as tutorials.
The right image is a video in a larger scale because the system does not allow different videos with different scales in the model presented.

creation of online content - the OpenCourseware. Later, in September 2006, Salman Khan creates Khan Foundation. In January 2009 was created the first free virtual university The University of People. The following year, in August 2010 Bill Gates financially supports the Khan Academy, and in September 2010, Google assigns a prize of $ 2 million to the Khan Academy, through the program Project 10 to the 100. In October 2011, Peter Norvig, Director of Research at Google Inc., created in partnership with Sebastian Thrun, the first MOOC on artificial intelligence. With more than 160,000 registered students, from 190 countries, the course was a success. In November 2011, it was announced an initiative of the Ivy Leage - The Floating University - to promote their paid content through videos, with major productions in Hollywood style. In December 2011, MIT announced the creation of the MITx - the free and massive virtual education initiative.

The year 2012 is considered the year of the MOOC and was the result of several progressions in the development of MOOC worldwide. In January, Sebastian Thrun officially announces Udacity - a platform with various courses that aimed to develop free classes and be accessible to all interested parties anywhere in the world. Charles West Ventures invests $ 5 million in Udacity. In February, are launched the first Udacity courses. In March MITx launch its first course. In April Coursera proclaimed an investment of several Universities like Princeton, Michigan and Pennsylvania in its initiative to virtual education and launches their first course.

In May, MIT and Harvard announce edX, an initiative of $ 60 million, with the aim of reaching 1.000 million students. In July, the UC Berkeley joins edX. And Coursera announces the integration of 16 new universities to its initiative. In November, Coursera reaches 1.9 million students.

With the rapid evolution and progression of MOOC worldwide was imperative to create a MOOC. In this particular case, the core aim was to design and made the transition of an e-learning model to MOOC. However the transition was not so fast as we hoped because we encountered several problems and limitations. Problems such as: the lack of video; the lack of depth of materials; and evaluation mode (since the MOODLE[95] tools were exclusive. And is not part of the new model of content presentation).

In any case, is important to explain some aspects in this transition:

- The combination of video and Internet. I.e., the transfer of all materials and content for video interconnected with online resources - especially the discussion forums among learners. An important factor is the availability of online content in different media: from the desktop, tablet and smartphone.
- Different units that share knowledge and expertise build the factor of progression, i.e., the entire course. All these units are made with small videos and supplementary material (documents, links, exercises) and also questions and answers. The structure has three major units: the videos with the content, the homework and the exams. The difference between the three is time: time to analyze and study and also whether or not to see the answers before the whole content ends.

95 As the name indicates, the MOOC - Massive Open Online Courses - refers to the massive scale that these courses are aimed at, and this is one of the reasons for non-use a platform like MOODLE.

- Participation holds a key role in the whole process: the content of each unit has a specific forum for topics where students and teachers can participate in discussions in order to work on the unit. Being a key aspect of the whole process, participation can generate in-depth discussions on the topics. Since often the videos are considered "lighter" and not deepen the contents, and that role falls to the forums of participation.

All the organization of the multimedia resources has to be made in advance. One concern was about the video duration: how long should it be? Should I record a long video and then cut? According to Anant Agarwal, president of edX and computer scientist at the Massachusetts Institute of Technology (MIT) in Cambridge, “how can materials be given to students in bite-sized chunks? You cannot stand at a board and talk for an hour, because students will lose interest, and you have to use discussion boards to guide student conversations about the material.” (Kellogg, 2013)

The option was to make several videos for each unit of content with 10/15 minutes duration and the essential points of the video clearly remarked (as we can see in figure 3).

Figure 3. Example of a video for MOOC

In this type of organization is vital to have everything well structured. In the e-learning courses we can add new content and have a different contact with the students: using Skype, email or even using social networks. But in the MOOC is essential to organize, structure and create all content in advance. As the communication is limited between teacher and students, due to the massive characteristic of the model, it is important to create ways of motivate the students along the study.

Other issue that concerns teachers is that students can have difficulties in acquire the same knowledge as in the traditional "face to face" class and therefore the relevant parts of the class are forgotten. Carl Wieman[96] explains, “efforts such as discussion boards do not really create a sense of community that replicates a classroom” (Kellogg, 2013).

How can we change this skepticism? How can we motivate students in this model?

96 Carl Wieman is director of the Carl Wieman Science Education Initiative at the University of British Columbia in Vancouver, Canada.

Learning Badges

One of the possible solutions is to implement badges. Learning badges are like an exchange currency for education that allows each learner to show their badges as a way to tell or show others their achievements.

It started with Mozilla Firefox and their first set of badges in 2011. This is an ongoing process on the creation and implementation of new badges in the community. Anyone may join this open community and request their backpack to fill and store their badges. As stated in the supporting documentation of the community badges[97] "the Open Badges framework is designed to allow any learner to collect badges from multiple sites, tied to a single identity, and then share them out across various sites, including personal blogs to social networking channels. It is critical for this infrastructure to be open to give learners control over their own learning and credentials, allow anyone to issue badges, and for each learner to carry their badges with them across the Web and other contexts." (The Mozilla Foundation and peer 2 peer University, 2013)

Although this is a beta version, any institution wishing to do so can implement the badges. These institutions can create, identify or point digital badges. The idea is that each student can use their badges, they can show them and this way tell "full story of your skills and achievement"[98]. (The Mozilla Foundation and peer 2 peer University, 2013)

As we can see in figure 4, the open badges anatomy is simple: they have a name, description, criteria, issuer, evidence, data issued, standards and tags.

Figure 4 Open Badges anatomy[99]

Anyone can collect these badges and put them in its digital backpack, later on they can display their skills on social networks, personal sites, blogs and wherever they want. "A collection of badges can function as a distributed portfolio that may eventually be accessible from a variety of social media sites, such as LinkedIn, Facebook, and Google Plus. When badges serve as part of a résumé or portfolio, they tell prospective employers a more detailed story about the projects and activities that define a student's learning, including both the hard and soft skills that were acquired."(Jackson, 2013) The main idea is to recognize skills that cannot be graded in the traditional system, such as the different skills we gain outside the classroom.

97 Retrieved from https://wiki.mozilla.org/Badges/Onboarding-Issuer
98 Retrieved from in http://openbadges.org/about/
99 Retrieved from http://classhack.com/post/45364649211/open-badge-anatomy-updated

The EDUCAUSE introduction to badges mentions, "badges offer talking points for a job interview, opening a friendly dialogue between a manager and an interviewee and allowing the latter to speak about accomplishments and interests that might not otherwise arise in conversation". (EDUCAUSE, 2012)

The use of badges by the institutions can be varied. An example is the Khan Academy that "offers a lengthy web page of them, such as an "Atomic Clockwork" badge, which requires a student to watch videos or hone a skill for each of 30 consecutive days". (EDUCAUSE, 2012)

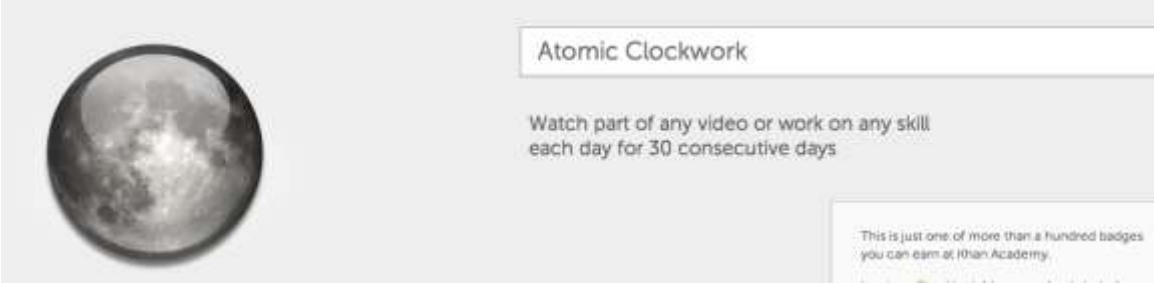

Figure 5 Example of a Learning Badge, KhanAcademy[100]

Also the MITx gives badges through their organized small study groups - the OpenStudy. The students that give useful and meaningful answers earn a badge.

Several projects were awarded in the annual competition for projects about Digital Badges supported by the John D. and Catherine T. MacArthur Foundation, the Gates Foundation and the Mozilla. Last year the Badges for Lifelong Learning Competition awarded 2 million dollars in grants for 30 innovative badges systems.

All the consistence experiences and applications allowed us to think about the implementation of learning badges in the developed course. Our principal aim is to diminish the isolation that an online model can bring to a student. Without interaction between teacher and student, the student can feel unmotivated. The question is how can a learning badge be a trigger for encouraging motivation?

Badges and motivation

According to Papert (1980), learning does not happen if one just looks for better ways of teaching, but rather if we enable the student to be able to find better ways of creating something concrete. This means that learning is processed much more by "doing" than by "receiving" – learning by doing. Papert has proposed the construction of mediatory objects/models ("objects with which to think") so that apprentices may build things that are effectively an engine for development. This idea is reinforced when one states that this mediator does not have to be human (and social), in so far as an object may also be a suitable mediator. Can we think about badges as mediators of the learning experience?

The idea of gives a symbolic award for an achievement can lead to influence engagement and learning. For example, badges can provide focused goals, challenging tasks, clear standards, affirmation of performance, novelty, choice, and authenticity (Dickey 2005).

100 Retrieved from https://www.khanacademy.org/badges/atomic-clockwork

Caryn Swark claims "badges are just another form of grading, or - worse - extrinsic rewards (…) Badges can be extrinsic rewards, but they can also provide intrinsic motivation, especially for students who like clearly spelled out expectations. Provided they're optional, they shouldn't negatively impact any student's learning." (Swark, 2012)

On the other hand, Resnick has a more skeptic view, "the problem, for me, lies in the role of badges as motivators. In many cases, educators are proposing badge systems in order to motivate students. It's easy to understand why educators are doing this: most students get excited and engaged by badges. But towards what end? And for how long? I worry that students will focus on accumulating badges rather than making connections with the ideas and material associated with the badges (...)." (Resnick, 2012)

In this sense, Henry Jenkins also states "there is a value in helping these youths find ways to value what they are doing as intellectual pursuits, and there is a value in seeking to validate these experiences and help them learn how to mobilize that knowledge as they learn to work through the formal structures that exert power over their lives. But making badges too central to the process may alienate them before they have a chance to exert ownership over the knowledge they are acquiring." (Ash, 2012)

Empirical studies, about the effect of badges in education, shows that "the motivation relationship between badges and motivation for low performing students was limited to participatory badges. Skill badges earned by the low-performing students did not correlate with the change in performance avoidance goals. Not only do we conclude that different types of badges will have different effects on student motivation to learn but we also conclude that different types of badges will also affect learning performance". (Abramovich, et al, 2013).

In education the theme motivation has always had a leading role, try to find effective solutions and unique is scientifically impossible. With this reflection, can we state that each student as different learning skills so they should have different learning badges? In this sense, which means should I use, and which means should I make use of to carry out the teaching and learning strategies in a MOOC model?

The answer to these questions should happen in a near future. When some data will be available to be analyzed and then we can confront with the conceptual framework.

Conclusion

Any pedagogue knows that one only learns what is needed and what one is motivated to learn. Various authors of theories of motivation claim the principle of the agreement between need-emotion-motivation as being actions inclusive and dependent on each other, and thus connecting the affective aspects to the cognitive aspects.

The attempts to held extrinsic or intrinsic motivation and education are not new. Badges, as extrinsic motivation, are used to recognize a user's contributions regarding different tasks. One of the problems is the use that is made by others: there are different badge designs, varying how, and for what, badges are awarded. One aspect is for certain "open education brings new opportunities for

innovation in higher education that will allow institutions and academics to explore new online learning models and innovative practices in teaching and learning". (Yuan, et al, 2013)

A number of questions remain unanswered by our work, and pose interesting directions for further exploration.

However, whatever the future holds, badges "as an adjunct to institutionally supported learning, might provide a new avenue for continuing education. They support lifelong learning, not just through traditional academic or formalized learning pathways but also the kind of knowledge that comes from personal initiative and investigation" (EDUCAUSE, 2012)

References

Abramovich, S., Schunn, C., & Higashi, R. (2013). Are badges useful in education?: it depends upon the type of badge and expertise of learner. Education Tech Research Development. Retrieved from: http://download.springer.com/static/pdf/503/art%253a10.1007%252fs11423-013-9289-2.pdf?auth66=1364398853_eaf4db44b712278a1380306b6d651ce6&ext=.pdf

Ash, K. (2012). Digital badges would represent students' skill acquisition. Education week. Retrieved from: http://www.edweek.org/dd/articles/2012/06/13/03badges.h05.html?tkn=orsf1

Bowen. K (2013) Open Badge Anatomy, Retrieved from http://classhack.com/post/45364649211/open-badge-anatomy-updated

Carey, K. (2012) Show me your badge. The New York Times. Retrieved from http://www.nytimes.com/

Casilli, C. (2012) Mozilla Open Badges: The Ecosystem Begins to Take Shape. Retrieved from http://carlacasilli.wordpress.com/2012/07/31/mozilla-open-badges-the-ecosystem-begins-to-take-shape/.

Dickey, M. (2005). Engaging by design: how engagement strategies in popular computer and video games can inform instructional design. Educational Technology Research and Development

EDUCAUSE (2012) 7 things you should know about badges, Retrieved from http://net.educause.edu/ir/library/pdf/eli7085.pdf.

Fitzgerald, B. (2012). Badges, portfolios, and blending formal and informal learning. Funnymonkey. Retrieved from http://funnymonkey.com/blog/badges-portfolios-blending-formal-and-informal-learning

HASTAC Initiative (2012) Badges for Lifelong Learning. *DML Competition*, Retrieved from http://dmlcompetition.net/competition/4/badges- about.php

Jackson, N. (2013) Open Badges for Lifewide Learning & Education, Retrieved from http://www.lifewidescrapbook.co.uk/uploads/1/0/8/4/10842717/open_badges_for_lifewide_education.pdf

Kellogg, S. (2013) Online Learning: How to make a mooc, Nature. Retrieved from http://www.nature.com/naturejobs/2013/130718/pdf/nj7458-369a.pdf
KhanAcademy (2013) The Atomic Clockwork, Retrieved from https://www.khanacademy.org/badges/atomic-clockwork

Mazoue, J. (2013). The mooc model: challenging traditional education, Educause Review Online, Retrieved from http://www.educause.edu/ero/article/mooc-model-challenging-traditional-education

Oblinger, D. (2004). The Next Generation of Educational Engagement. *Journal of Interactive Media in Education, 8*.

Papert, S. (1980). *Mind-storms.Children, computers and powerful ideas*. NY, New York: Basic Books.

Swark, C. (2012) P2pu,mozilla, open badges... Oh my!, Retrieved from http://gamifymyclass.blogspot.ca/

The Mozilla Foundation and peer 2 peer University (2012) Open badges for Lifelong Learning. Retrieved from https://wiki.mozilla.org/images/b/b1/openbadges-working-paper_092011.pdf.

Resnick, M. (2012) Still a badge skeptic. *HASTAC*, Retrieved from http://hastac.org/blogs/mres/2012/02/27/still-badge- skeptic.

Yuan, l. & Powell, S. (2013) Moocs and Open Education: implications for higher education. Retrieved from http://publications.cetis.ac.uk/wp-content/uploads/2013/03/moocs-and-open-education.pdf

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The theoretical foundations of IPTV in distance education

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Abstract

The purpose of this study is to determine the necessary theoretical foundations to achieve regular and systematic information while IPTV, which brings together all the technologies of information age, is being used in distance education, one of the common ways of training. IPTV responds to the search for a vehicle that is fast, high quality, versatile and relevant with its different features in the lives of individuals in which they continue to interact to get accurate information. Therefore, the idea of that IPTV is likely to be seen as an integral element of daily life to achieve information and its examination in the context of communication and education has begun to spread. In addition, it is important that IPTV is to be grounded with communication and learning theories while being examined in the context of distance education with Martinsson's assumption (2006) that media that can be designed independently of theories is limited and cannot be improved. The research was designed as a case study based on qualitative research. The data were collected through literature review. Openness, integrity, accuracy of content, context, diversity, flexibility, validity foundations of Media Richness Theory were compared with individuality, creativity, social culture, association and participation, reality foundations of the Social Constructivist Learning Theory in the common denominator of IPTV by forming cross-table. In the analysis of the data, assumptions were formed by using induction technique.

Keywords: IPTV, Distance Education, Theory of Media Richness, the Social Constructivist Learning theory

Introduction

A variety of communication media (e-mail, instant communication media, and video calling capabilities) that can be constituted thanks to the innovations in technology provide convenience in the use of resources by taking individual differences into account. Distance learning systems make reliable information understandable and fast accessed by using aforesaid advanced communication media. In this way, personal and social development is supported. Therefore, since the first years 21st century, applications of distance education that are conducted with communication technologies that provide a chance of continuous interaction function as an important element in the lives of individuals. In this context, it becomes important that individuals should be given information in the media of high interaction and continuously by equipping distance education programs to be designed with new communication technologies. Upon looking at letters, radios, TVs used in the distance education, internet-based technologies, it draws our attention that the principles of independence of time and space that are particularly counted as foundations of distance education and the principle of interaction were not exactly fulfilled and that there are constraints. In Aarrniemi's (2004) definition, for these reasons, since the 2000s, individuals have been in search of a vehicle that is fast, high quality and relevant in their lives maintained in interaction. The introduction of IPTV into use is worthy of study in terms of distance education since it responds to this quest due to the fact that it is able to bring together all textual, visual and auditory technologies. Besides, Martinsson's (2006) view that IPTV that brings together different media should be investigated in terms of bringing learning in society and real life learning experiences to the .participant supports this assumption. For IPTV, one of the communication technologies, to be used in distance education applications, economic and social-cultural characteristics of individuals, individual learning differences, learning needs and learning experiences should be taken into account. The alignment of these components that will affect learning with technology to be used is to be considered. In this context, the communication and learning theories should be grounded in terms of correct design of IPTV-based distance education programs. Therefore, the examination of theoretical foundations regarded as necessary for the use of IPTV in distance education is the purpose of this study.

IPTV

IPTV brings together telephone, the Internet and TV out of social communication technologies used widely in daily life and in distance education in the 21st century. Also, IPTV platform, with services that it embodies, facilitates the concurrent use of telephone, the Internet and TV by combining them in different ways. In short, IPTV platform offers a structure that can build a cooperative and social network by allowing individual an opportunity of video calling, instant messaging, real time interaction (multi-directional) through Internet media out of TV and instant feedback. In addition, through its features like Catch-up TV, Video on Demand (optional video), Music on demand (optional audio), and IPTV provide independent media and provide easy access to information by using these media. It allows the viewer to have an individual platform by providing the facility of creating their own broadcasting with Personal Video Recorder (PVR) and personalization features. Thanks to these features of IPTV, data and information that can be functionalized are transmitted to the user fast and in a quality manner with an auxiliary unit called set top box by using alternative cable technologies and compression techniques. In short, IPTV is broadcasting of encrypted, unencrypted TV channels

and stored video content to the last user over broadband Internet access technologies by transforming them into Internet Protocol (IP) packets (Taplin, 2004). In addition, voice, video and written data services can be given at the same time with the application of IPTV so-called *triple play,* a feature of IPTV. In addition to this, as well as data retrieval in IPTV, data entry, an essential element of 21st century's interactive communication, is also achieved. At this point, one of the biggest features of IPTV platform that separates it from computer that is the most common means of communication in the current era is freeing the individuals of additional equipments like mouse and keyboard essential for computers. While the content and time have been determined always by publishers and content creators at the point that communication technologies have reached until the 2000s; IPTV platform gives the user an opportunity to access information needed completely independent of time. All of these components can be achieved through personal menus and lists that can be created with personalization features. As is seen, each feature supports one another and it is inclined towards the most functional use of IPTV platform composed of combination of such devices as TV, computer and telephone channels. A high level of interaction is achieved by carrying out interaction qualifications of each communication channel and features that come together in IPTV. For these reasons, it is important to search its contributions to distance education which is IPTV's the most common way to access regular and systematic information with highest level of interaction and time and space-free facility.

Theoretical Foundations

In accordance with these definitions, the assumption of McQuail and Windahl (1997) that "all technologies will get closer one day" is seen to occur. However, how functional and effective interaction communication technologies provide is more important than their use in combination. It is possible to test the effectiveness of communication with Media Richness Theory (MRT) (Daft and Lengel, 1986). Daft and Lengel, with their definition in 1986, regards MRT communication tools as tools with different facilities that can resolve uncertainties, conciliate different presentation forms and facilitate understanding. Besides, MRT defends that the tool should be suitable for the work to be done. IPTV, the features of which were briefly mentioned above, can bring the power of communication almost equal to the level of face-to-face contact by request with various patterns of use. This feature supports the assumption that "face-to-face communications provides the richest media" (Daft and Lengel, 196). When handled in terms of learning, social constructivist learning theory (SCLT) (Gültekin, Yaşar, 1998), one of the theories used in distance education, is thought to enable learning by allowing IPTV's creativity in media where social culture is to be shared with interaction, cooperation and personalization features(Taşkın, 2007). Therefore, it is seen essential to investigate an IPTV-based distance education program likely to be designed within the framework of these theories.

Media Richness Theory

The ability of a medium or media to carry information is named as media richness. There are some criteria fort he richness of communication. In order to investigate IPTV that emerged in the 2000s, embodies many different communication media within the framework of media richness theory

(MRT), first of all, it is necessary to completely understand the evaluation of the aims and criteria of the theory according to different technologies. In this context, strengths and weaknesses, which may be revealed when IPTV platform and MRT are investigated together by explaining the aims and criteria of the theory, are to be assessed. The main purpose of this theory is decrease meaning ambiguities in communication, confusion arising from multiple-meanings and general uncertainty

The aims of MRT

- Ambiguities of Meaning in communication (Ambiguity): Interpretation of a word, symbol or mark with more than one meaning may cause ambiguities in the given message. Meaning ambiguity is dependent on the content. While a communicative element, word or sentence is meaningless in a context, the same element might take meanings in another context (Daft and Lengel, 1986). Daft and Lengel (1984) advocate the reduction of meaning ambiguities of the basic element necessary for sharing information the process of obtaining information and the reduction of multiple meaningfulness developing depending on uncertainties. The ambiguities may be eliminated when the person giving the message and the receiver interpret the content of the message in the same sense of meaning. For this, individuals should be provided with appropriate multi-channel selection and different components (Trevino, Daft and Lengel, 1987).
- Equivocality: Equivocality is the case in which various meanings might emerge due to the uncertainties of meaning in the message to be given. Transferred message may not produce the same effect on each individual. The level of knowledge may lead to derive different meanings from the same words. This strengthens the possibility of giving the wrong feedback to the wrong message taken and the possibility of changing the content. Daft and Lengel (1984) state that face-to-face interaction media is preferred to written media in order to reduce the risk of equivocality. This is because the understanding of the message or being aware of whether the message is transferred to the receiver or not is easier to understand with the increase of auxiliary communicative elements like gestures, facial expressions, tone of voice in the media. In short, information should be given in a way that the receiver can clearly get. Otherwise, since the information remains incomplete, the possibility of multiple meaningfulness increases and this leads to uncertainty.
- Uncertainty: In terms of communicating realistically and meaningfully, it is essential that the intended meaning should have the same meaning with the sent message. For this reason, the message should be told clearly. Galbraith (1977) assumes that addition of different information to the message, due to the differences stemming from the information that intended message embodies and style of expression during discourse, causes uncertainties. Since each individual's ways of understanding may be different due to their previous life experiences, the possibility of encountering uncertainties in communication increases. In addition, Duncan (1972) argues that the even the current environment may cause uncertainties. Benson and Harkavy (2000) report that uncertainties in communication can create a sense of isolation in participants. For example, according to the survey conducted by Benson and Harkavy (2000) uncertainties of person can be decreased through enriched media in online communication and individuals can feel themselves present in the media. To fulfill these objectives, it is necessary to adhere to certain criteria**.** These are having the

features of instant feedback, use of natural language, focusing on the person, voice, image, body language. When technological media are considered, in addition to these, band width of the tool or the quality of carrying multiple transports and its speed should be considered. According to experts, individuals always prefer the richest communication in order to understand each other in the most effective way. The more complicated the communication task is, the richer media becomes essential (Thurlow, Lengel, Tomic, 2004). However, the richness of the communication media may not be the same for each individual. Each individual should ensure the criteria that they need in communication according to their own media of use and personal characteristics. When these criteria, likely to be performed with simultaneous interaction, individuality, foundations of the social environment are considered, it assumed that features of IPTV mentioned previously can fulfill the principles of MRT by fulfilling all these criteria.

Features of MRT in the context of distance education

Being ascertainable from different angles according to the experiences of people, purposes of communication requires the theory to be investigated in the context of distance education. Kurubacak (2006) showed, as summarized in the table below, that it is necessary to ensure different requirements in addition to the basic features and criteria when MRT was examined in the context of distance education.

Table 1: Features of MRT in the context of distance education (Kurubacak: 2006)

Openness	**Unity**	**Context**	**Accuracy of Content**	**Diversity**	**Flexibility**	**Validity**
To understand the different cultural knowledge transfers in various social groups	To establish strong motivation to improve self-esteem and self-regard	To incorporate new acquisitions into prior information by taking cultural differences into account	To be aware of the relationship between power relations, cultural and social community relations	To think about learners' socio-cultural background, information and skills to assess the situation in previously unforeseen circumstances	To be respectful and accepting towards the different cultural traditions that are structurally dominant	To make careful controls to gain useful information in democratic conditions

To use a clear language that regulates online activities and affects behaviors	To take powerful decisions to transfer real-life experiences to experiences of learning	To deal with interactive management and credibility problems	To provide related and current information about learning	to terminate discriminations and prejudices in coop work	To discuss possible models of change and positive properties	To identify steps and obstacles of actualization
To create multiple opportunities for teachers and learners to gain different technologic experiences	To focus on technological skills in communicate to reveal interactive developments	To guide to remove main technological issues and barriers	To determine the basic technological needs and expectations of teachers and learners	To establish new approaches to use traditional technologies	To obtain synchronous and asynchronous and/or interactive communication models	To develop a plan of action that shows how teachers and learners communicate with each other

The usability of IPTV in distance education, in addition to the basic criteria and objectives of MRT, should be seen as a whole based on MRT's features, put by Kurubacak (2006), in the context of distance education.

Social Structuralist Learning Theory

Social structuralist learning theory (SSLT), reaching a large proportion of its current structure in the 19th century with the work of Piaget and Bruner, is a theory developed upon how human beings learn (Durmuş, 2001). SSLT regards learning as a social effort based on cooperation besides problem solving in real-life and taking original tasks. In SSLT, teaching, thinking by taking the basic skills into account, understanding, questioning and the application of knowledge are emphasized. In other words, the basic feature of SSLT is to emphasize the identification of learners' role. In this process, while the learner creates ideas and perceptions, he himself configures them instead of getting them passively from other sources. In other words, it may also be achieved by doing and experiencing (Gideon, Montenegro, Yılmaz, 2007). On the basis of SSLT, instead of transferring the others' knowledge to individuals, the view that people should construct their own information holds a place (Şaban, 2002). The teaching applications of SSLT indicate that the reflection of SSLT on the design of teaching and learning process is mostly upon the notions of learning and learner since, according to SSLT, learning is not a passive process of taking information but an active process of meaning formulation. SSLT is based on five criteria. These are individuality, creativity, social-cultural

phenomenon, participation and reality. The basics of SSLT can be briefly explained as follows (Olssen, 1990). Knowledge is constructed individually and socially (Individual and Socio-cultural). Knowledge is produced more than discovered (creativity). Reality is transitory rather than being exact and is limited rather than being perfect (realistic). Knowledge gives information about structures or frames that we gained through experiences instead of explaining the world participation.

Interactive communication teaching media that IPTV carried to the highest level, enabling the learners to construct knowledge and meaning, is really important in SSLT.

In this scope, in SCLT's learning media, such features appear at the fore front (Eggen, Kauchak, 1997):

- Complex learning media and realistic duties (Realism): Previous understandings of individuals related to various notions are presented in a complicated way and making notions more valid is achieved. In this aspect, real-life problems in SCLT are the common combinations of teaching applications. The main purpose of these teaching applications is to direct learners towards problems that awake interest for the subject.
- Social reconciliation and sharing the responsibility as a part of learning (Social culture and Cooperation): Teaching applications in SCLT emphasize the social side of learning and proposes to continue learning activities based on a cooperative approach.
- Multiple presentation of content and construction of knowledge (Creativity): In SCLT, it is expected that learners should construct the content by themselves instead of a pre-determined content. It is desired that learners should reach the knowledge, analyze and organize the obtained knowledge, and use it for the solutions of the problems. The learners are expected to conduct an investigation and research during the construction of the knowledge, use the obtained knowledge to solve the issues and present the outcomes.
- Learner-centered teaching (Individuality): The learners have the priority to determine the content, perform and evaluate the activities. The learners are given the opportunity of learning activities according to their own interests and abilities.

As a result, teaching applications in SCLT support rich and interactive learning media that require learners to reach the knowledge for the solutions of problems, analyze, organize and use it through cooperation-based activities within the framework of complex and real-life problems.

SCLT states that knowledge is shaped by being established on the individual's experiences.This shaping occur through activities, speeches, meetings. Therefore, in SCLT, learning is not a simple process in which knowledge is transferred from knower to learner but a process of learner's constructing his own individual meaning interacting with his friends, experts and knowledge.

The learner is responsible for his own learning and is the active person who chooses and processes relevant knowledge among the presented information (Fidan, 1985). The placement of activities that enable learners to have rich learning experiences and interact more with their environment is an important foresight of the theory.

Distance education that stresses individualized learning, regards constructivist learning as a functional theory thanks to all these reasons (Gültekin, Karadağ, Yılmaz, 2007). Besides this, communicative multimedia Technologies used in distance education strengthen learning according to

the basics of SCLT.

In this context, when the features of IPTV and the process of giving information as supported by SCLT, are offered to learners through media that embody rich educational experiences, the learners may have the chances of testing the findings of previously constructed findings in their minds, correcting the mistakes and perhaps, formulating new schemas different from the previous ones.

Personalization features of IPTV explained in previous sections and its individuals use, its features enabling cooperation, its capacity of bringing together different media and its similar services are thought be in line with the basic foundation of SCLT. Due to the all reasons clarified above, the usability of IPTV in distance education is in accordance with the foundations of SCLT.

Method

The study was designed as a case study based on qualitative research. It was searched in the context of Richness of Communication Media and Social Constructivist Learning Theories. The data were gathered through literature review. In the analysis of the data, descriptive analysis of qualitative data and analysis of induction were utilized.

The literature review was done in the world scale and, explanations and citations related to IPTV and theories were presented and significant findings were synthesized.

Findings and Results

In this study, the needs of a distance education program that can be prepared by IPTV are put forth for consideration to construct foundations for IPTV-based distance education programs within these theories by preparing a cross table that is composed of the foundations of MRT in the context of distance education which are openness, unity, context, accuracy of content, diversity, flexibility, validity and SCLT' foundations; individuality, creativity, social-culture, cooperation and participation, realism

Table 2: IPTV Cross-table (Çiftçi, 2011)

Communication / IPTV / Learning		**Media Richness Theory**						
	Foundations	**Openness**	**Unity**	**Context**	**Accuracy of content**	**Diversity**	**Flexibility**	**Validity**
Social Constructivist Learning theory	**Individuality**	To gain experience in online activities	To develop self-skills by developing motivation	To provide contextual transfer between different information	To determine the needs correctly	To assess unforeseen circumstances due to change of formation of knowledge for individual	To respond to stimulus effectively and healthily	To make self-control in acquiring useful information
	Creativity	To create multiple knowledge opportunities out of teachers and leaner's' experiences	To create knowledge by enriching the experiences	To organize the learning media in interactive environments	To be able to choose the necessary information	To reach knowledge with new approaches	To give task to the learner in creating and acquiring knowledge	To create a plan of action to achieve useful information
	Social culture	To transfer cultural information	To structure knowledge through technological skills	To unify information according to cultural differences	To reach knowledge by forming relations in the framework of power, culture and social structure	To develop social culture with past knowledge and skills in the acquisition of knowledge	To respect different dominant cultural traditions	To create democratic environments while checking the acquired knowledge

	Unity and participation	To acquire and share knowledge in different social groups	To bring together what is learned by improved interaction	To reach knowledge by removing technological issues and barriers	To identify common needs of the participants	To provide only rich learning experiences by ending the prejudices	To access to knowledge with synchronous and asynchronous interactive communication models	To share information by communicating in a planned way
	Reality	To use understandable language while acquiring knowledge	To transfer previous life experiences to learning experiences	To provide guidance for useful and meaningful information	To provide current and relevant information	To unify traditional technologies and new approaches	To discuss different models of change in communica-tion	To define the steps and barriers of actualization

Reaching the MRT's goals increases the quality of communication with ensuring of all these criteria. This affects the validity and reliability of the obtained information and decisions made through communicative channels in a positive way (EL-Shinnawy and Markus, 1997). Christophel (1990), in his research findings, supports the idea that rich communicative media increases the perception of social presence and perception of social presence, a foundation of SCLT, is highly related to learning outputs in the desired direction. If IPTV is used within the framework of MRT and SCLT in distance education, it plays an active role in developing online communication, decision making, application processes. Open and flexible online information communities both bring the activities of solving problems in real-life that continue life-long and critical thinking and enables different solutions and innovative points of view to appear. In the context of these foundations, the foundations of IPTV in the context of MRT and SCLT are put forth for consideration. In the future studies, it is considered that investigation of sources one by one and search of IPTV in the context of different theories might be useful.

References

Aarreniemi-Jokipelto, P. (2004). Interactive learning environment in digital tv: results and experiences. e-learning world conferance on e-learning in corporate, government, healthcare & higher education. Chicago 1602-1609.

Benson, L., ve Harkavy, I. (2000). Higher education's third revolution: The emergence of the democratic cosmopolitan civic university. Cityscape: A Journal of Policy Development and Research, 5 (1), 47–57.

Christophel, D. (1990). The relationship among teacher immediacy behaviors, student motivation, & learning. Communication Education , 323–340. structural design. Management Sci., 554–571.

Çiftçi, G. (2011) IPTV'nin Uzaktan Eğitimde Kullanılabilirliğine İlişkin bir Delphi Çalışması. Anadolu Üniversitesi Uzaktan Eğitim Ana Bilim Dalı Yüksek Lisans tezi.

Duncan, S. D. (1972). Toward a grammar for dyadatic conversation. The Turkish Online Journal of Educational Technology – TOJET, 4(2), 29-47.

Durmuş, S. (2001). Matematik eğitiminde oluşturmacı yaklaşımlar. Kuram ve Uygulamada Eğitim Bilimleri 1. Ankara. Anadolu Üniversitesi Yayınları. 91-107.

Eggen, P., ve Kauchak, D. (1997). Educational psychology: Windows on classroom. Third Edition. New Jersey: A Viacom Company. 108.

El-Shinnawy, M., ve Markus, M. L. (1997). The poverty of media richness theory: explaining people's choice of electronic mail etc. voice mail. International Journal of Human Computer Studies 46 (4), 443-467.

Daft, R. L. & Lengel, R.H. (1986). Organizational ınformation requirements, media richness &

Fidan, N. (1985). Okulda öğrenme ve öğretme. Ankara: Alkım Kitapçılık Yayınları. 79.

Galbraith, J. (1977). Organization design. NY. Addison-Wesley Reading, MA. 274.

Gültekin, M., Yaşar, Ş. (1998). Yapısalcı kuram ve öğrenme - öğretme süreci. Anadolu Üniversitesi Eğitim Fakültesi Dergisi, 8(1-2), 68-75.

Gültekin, M., Karadağ, R., ve Yılmaz F. (2007). Yapılandırmacılık ve öğretim uygulamalarına yansımaları. Anadolu Üniversitesi Sosyal Bilimler Dergisi, 7(2), 503-528.

Kurubacak, G. (2006). Critcal curriculum design for blended learning in higher education: The strategies, principles and challenges of interactive classroom management. I-manager's Journal of Educational Technology, 3(2), 20.

Martinsson, E. (2006). IPTV the future of television? Report – Computer Communication and Distributed Systems. Chalmers Unıversıty Of Technology. Gothenburg. 324.

McQuail, D. ve Windahl, S. (1997). Communication Models fort he Study of Mass Communication, Pearson Education Limited. New York. IOS Press. 87

Olssen, M. (1990). Radical constructivism and its failings: Anti-realism and individualism. British Journal of Educational Studies, 44(3), 275-295.

Şaban, A. (2002). Öğrenme öğretme süreci. Ankara. Nobel Yayınları. 89.

Taplin, J. (2004). The IP TV Revolution. Annenberg School for Communication University. California. 27-29.

Taşkın, C. (24 Kasım 2007). IPTV Mimarisi, Servisleri ve Dünyadaki Uygulamaları. Cebit Eurosia Bilişim Teknolojileri. İstanbul. 9-11.

Thurlow, C., Lengel, L. ve Tomic, A. (2004). Computer mediated communication: Social interaction and the Internet. London. Page. 98.

Timisi, N. (2003). Yeni iletişim teknolojileri ve demokrasi. Ankara. Dost Yayınları. 36.

Trevino, L.K., Lengel, R..K. ve Daft, R.L. (1987). Media symbolism, media richness and media choice in organizations. Communication research, 14(5), 553-574.

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Learning Spaces, Learning Labs, and MOOCs: merging the real and the virtual in connected learning.

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Abstract

Many traditional universities face the question whether to embrace MOOCs as an additional business model. Although many have an established income, from often subsidized higher education, with regular students on-campus, uncertainties on future public financing and both the interesting features of MOOCs as well as the possible competition from them are urging a rethink.

Very attractive are the learning analytics made possible in online course interaction, which yields data lacking in face-to-face courses. On the other hand, the massive student response to MOOCs shows a potential in terms of visibility and the possibility to recruit talented students.

At the same time, however, universities are reaping the benefits of an evolution that is almost as recent, where those universities that possess large real estate assets, have been investing in improving the physical learning environment for students. These so-called "Learning Spaces", or "Student Centres" offer high-tech equipment in flexible and multifunctional environments, which are highly "wired" and merge seamlessly with the virtual learning environments of the universities. In some cases these facilities are complemented by complete research labs where new learning interactivity is tested.

It is our conviction that universities can use this infrastructure as a complementary strength in the development of MOOCs that have a high degree of physical persistence, and maximize the interaction between presential and distance students, to the benefit of both students groups. It is, we will argue, one of the possible routes towards MOOCs that go beyond recorded lectures and lectures that go beyond unidirectional teaching. We will discuss some real examples and propose a Learning Lab Network.

Introduction

As argued elsewhere (Touzé and Truyen 2013), where part of the criticism on MOOCs is directed at the loss of social contact and poor interaction – where MOOCs are supposedly copying old-style university lectures, joining MOOC usage to existing learning infrastructure in colleges and universities can combine the best of both worlds. It is also a natural step from efforts already undertaken with the introduction of Open and Distance Learning to solve issues in Multi-Campus education (Truyen, Van Dorp and Janssen 2011). In this paper we give two "best practice" examples of Learning Centres that are integrating virtual, online Learning in Flipped Classroom conditions.

Agora Learning space

AGORA (http://agora.ghum.kuleuven.be) is a new learning center in the city center of Leuven where students can meet up, study together, work on papers, collaborate on group work projects, practice for presentations, view and edit multimedia, have a coffee, and much more. Keywords are comfortable, flexible, informal, multimedia, social, student centered and accessible. In short, AGORA is a learning hub where information, infrastructure, multimedia and people come together. The project is an initiative of the Humanities and Social Sciences Group and is dedicated to providing a fully-equipped learning center for all KU Leuven students. The university's overcrowded libraries clearly attest to the need for extra capacity, especially as the student population increases. With AGORA, KU Leuven wants to do more to meet this need than simply add another study hall. By offering interactive multimedia technology, flexible and extended opening hours and a comfortable, social learning environment, KU Leuven aims to provide a sustainable, structural answer to the needs of all current and future students of our university. The learning process can take many forms, from individual study to collaborative work on papers and presentations. To ensure that all learning types are accommodated, AGORA offers an extensive array of multimedia tools, including interactive displays, document cameras, video editing suites, wide-screen monitors, etc. By studying and working together in a social learning environment, students are better prepared to thrive in the workplace. The experiences of learning centers abroad clearly affirm that an informal, social learning environment stimulates and motivates students.

The KU Leuven Agora Learning space is a 2500 m2 infrastructure for students, where they can study at their own pace in an informal setting. The university made this investment as an answer to an relatively new phenomenon, where students choose increasingly to study at the libraries instead of in their student homes. Students value the social environment of their peers to keep up the discipline required for prolonged study.

Confronted with a growing percentage of students in the libraries – in the sense that those library visitors were not necessarily consulting the library holdings but were rather studying their courses – the council for the Humanities and Social sciences ordered a study in 2007 to add a dedicated learning space (Abraham & Truyen, 2008). This would free up the libraries for regular library users, such as researchers or thesis students. A delegation visited several learning grids in the central UK, like Sheffield and Warwick. At the same time, a requirements analysis was made, involving the

student community. One can see the life occupancy of the different libraries and learning centers on the site "Blokken in Leuven" (http://www.blokkeninleuven.be) . "Blokken" is the Dutch word for studying for exams.

To prepare a University policy, study visits were made to several existing learning spaces in the UK (a.o. Sheffield and Warwick) & the Netherlands (TU Delft, Avans). A report was presented to the university board, and finally a decision was made to convert the old institute of Pharmaceutics, a historic building, into a modern learning center. The fact that this building is protected heritage posed some challenges but also held some interesting opportunities to merge tradition and modernity, one of the central themes at KU Leuven.

While at the beginning it was conceived to provide a lot of computers, in then end the choice was made for a Bring Your Own Device concept. However, maximal connectivity and power outlets have been provisioned, and there is also a university ICT support center integrated.

The center as several types of rooms:

- A flexispace
- Silent study spaces
- TimeOut Zone
- Group work rooms

Flexispace

The flexispace is a social study area with flexible furniture that students can arrange as they like. It can also be rearranged for specific cyclic moments in the study calendar, e.g. to make more room for silent study during exam preparation periods. Large screens have been provided so that students can share the display of their laptops to work together.

Silent Study spaces

In the silent study spaces the students can study in silence. Talking is not allowed, nor is food. It requires a lot of advanced acclimatization and acoustic technology to make silent study spaces that allow for prolonged study. An extra challenge was that the old furniture in one of the rooms was protected as heritage, so some creative design solutions were needed. The result is an absolutely unique environment. For the students these are the most important facilities, it was for that reason, to be able to study together in silence, that they invaded the libraries in the first place.

TimeOut Zone

In the timeout zone students can enjoy drinks and cold food, there are also distribution machines (not only for food and drinks but also for small ICT gadgets) and comfortable seating.

Group work rooms

The group work rooms can be reserved by the students, to do group work. They feature large shared displays. There are two types available at Agora: stand Group work rooms where about 8 to 10 students can collaborate; and multimedia rooms where advanced video editing hard- and software is available, and also videoconferencing facilities. One of the rooms has been organized in such a way that students can easily practice presentations. Through the videoconferencing facilities, students can work together with students at other campuses of the University association.

Students can use a reservation tool to book group work or multimedia rooms. This student-centered infrastructure allows to offload teaching tasks to student activities, where the student takes the responsibility for his/her learning.

Flipped classroom and the importance of Open

Of course, the innovative student space leads to pressure on teaching: students expect teachers to make better use of the opportunities offered by the learning center. Plans are being made to add flexible classroom spaces to that end. The fact that students can work together in a high bandwidth environment with large screens, means they also want as much as possible course information online, including weblectures. This means professors feel the pressure to make their VLE courses, which are now mostly meant to support the classroom teaching (blended learning); more complete so that they become real ODL courses. This of course makes the step to opening this content up to a MOOC environment much smaller.

Students stress the need to be provided with open learning materials, that they can integrate in their own Personal Learning Environments and collaboratively edit in the Learning Space (Truyen and Verbeken 2012). They value open formats and availability of weblectures, knowledge clips and other interaction recordings so that they can *reuse*, *redistribute*, *revise* and *remix* them (Hilton, Wiley, et al. 2010). Learning spaces should offer the support to facilitate these activities. This also implies training students in the necessary ICT skills to do so (Truyen, Vanthienen and Poelmans 2011).

Learning Lab

The use of new technologies combined with the evolution in methodologies for knowledge and competence development has a profound impact on traditional pedagogies, both in college as well as in enterprises.

In the context of their collaboration, the Ecole Centrale de Lyon and the EMLYON Business School have responded to this challenge by creating the LearningLab – a laboratory dedicated to the research and experimentation into pedagogical innovation (http://www.learninglabeducation.com).

The LearningLab is a space for experiment, for formalisation and transfer of pedagogical innovation towards teachers and students, and it is also open to enterprises. Its objective is to invent, experiment and disseminate new practices by linking technology, methodology and work environment.

Learning together in new ways !

The LearningLab wants to be a place for technological experimentation and exploration of innovative educational methods, both in relation to their usage as well as their deployment.

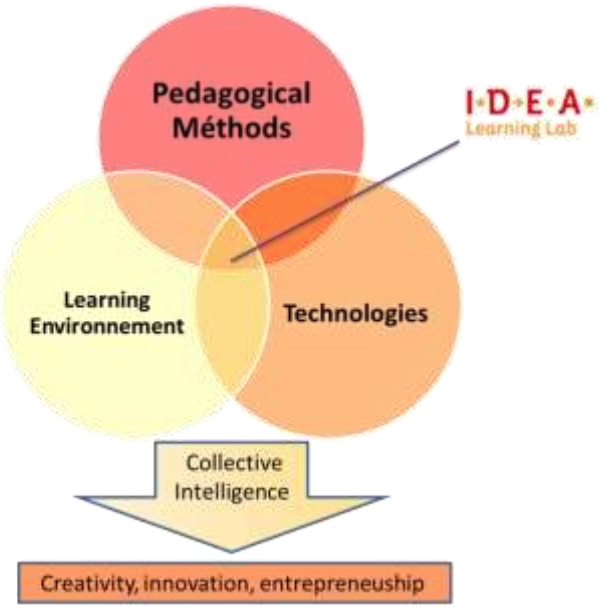
More precisely, this laboratory is interested in the study and practical implementation of collaborative intelligence and creativity. The basic idea is to study methods and tools that allow

people with different and complementary competences to conceive and co-create innovative solutions to solve multidisciplinary problems.

Experimentation place

The LearningLab wants to develop and disseminate pedagogical innovations in three domains:

- Innovative pedagogical methods and new learning supports
- Emerging technologies and their new usages
- The material and human preconditions favoring learning performance



In parallel, its vocation is to test in life conditions practices and usage scenarios linked to new modular learning frameworks open to creativity, such as haptic interfaces (tablets, haptic tables, TBI,

E-book readers etc.), group interactivity, collaboration tools, simulation softwares.

IDEFI funding and entreprise partnerships

The LearningLab is one of three pillars of the I.D.E.A. project framework (Innovation, Design, Entrepreneurship & Arts), common for the two schools and funded in the context of the IDEFI (Initiatives d'excellence en formations innovantes – Initiatives of Excellence in Innovative Training) call for proposals with a budget of 6,3 M€.

Partnerships have been forged with HP, Promethean, Steelcase, Gostai (Aldebaran Robotics), Arthesis diffusion, Marmonier, a.o.

A vision for the next 10 years

The LearningLab wants to be a reference in France, in Europe and beyond in the domain of pedagogical innovation in higher education, more specifically in contexts of creative efforts in multidisciplinary research groups.

It also wants to establish an international network of Learning Labs that share the same philosophy.

MOOCs @ college

When we look at what MOOCs could mean for traditional college, presential education, we can immediately see a link with current VLE's or online learning environments that are already mainstream in blended learning. Many universities have implemented a VLE and through the years added a lot of functionalities, such a s social software extensions, that give them MOOC like functionalities (in the case of Canvas e.g., or Blackboard Coursesites, the MOOC environment is in fact an extension of a VLE software system).

The question is then how far have these universities already gone in merging the real and the virtual in their Campus experience: how much from the real life teaching environment have they uploaded to the VLE? Note that there is an inner logic to do so: students like well documented rules and agreements; which means more and more procedural information is added to VLE course content, making explicit information communicated in class. This offers a good basis to make a step towards a complete online environment such as a MOOC.

Since universities made efforts to integrate their VLE's with their administrative environment, and eg automatically enroll students into the courses they take, giving access to legacy VLE's for non-registered students often proves very cumbersome. Moreover, the authentication systems are not fit to registering thousands of loosely verifiable accounts.

This means many universities that do already have very large VLE's running will still be interested to look for other solutions for their MOOCs, and join specific MOOC providers. This is where an opportunity arises to find more common ground. Joining registered, on-campus students with students unknown to the organization in a MOOC environment offers new challenges.

MOOC scenario's for expanding on traditional on-campus education:

- Running a MOOC and a college course in parallel: regular students also subscribe to the MOOC; the MOOC replaces the traditional VLE;

- Offering transition and/or preparatory courses through MOOCs: the MOOC replaces existing courses for students abroad that want to prepare and need to fill some gaps.
- Internationalizing a course through a MOOC: a network of academics produces collaboratively a MOOC, which is then followed by regular students at the different participating institutions
- Accepting MOOC accomplishment certificates for credits, so that students can opt to follow the MOOC instead of the existing classes
- MOOCs can of course offer added flexibility to work students
- Regular students could take up roles as teaching assistants or tutors in a MOOC; MOOCs offer yet another opportunity to diversify roles in a course
- A traditional university has several resources that can expand on the MOOC concept; such as infrastructure, lecture rooms, (digital) libraries etc.

When the same Online course is followed by online subscribers and students registered at a University in the context of their formal education, we get of course a very interesting scenario (Assante and Truyen 2011).

Making a hybrid environment that merges MOOC potential with existing infrastructure and real life interaction on Campus is certainly worthwhile exploring.

LACE

Literature and Change in Europe (LACE) is an example of a MOOC where we mix registered students at 7 partner universities with online MOOC subscribers (Kuppens, Truyen, and Baetens 2011). Building on a long experience with running an online course between the partners, supported by Erasmus staff exchange, we were able to setup a MOOC with relatively little effort. The MOOC runs in parallel with the academic semester. LACE will start in October 2013 on the Canvas Network (http://www.canvas.net).

While LACE content situates itself at the masters level for a rather specialized topic, we acknowledge that there is a wider interest from members of the general public. In this sense the MOOC helps to link up academia with a broader community. At the different campuses of participating universities, students can have RL meetings on the MOOCs in the learning space. How this can be opened up to non-university registered MOOC participants has yet to be explored.

References

Abraham, F. and Truyen, F. (2008). *Studielandschap Humane Wetenschappen: een werk- en leeromgeving voor de studenten in de binnenstad*, 101 pp. Leuven: Katholieke universiteit Leuven.

Assante, D. and Truyen, F. (2011). Analysis of distance and blended teaching Networked Curricula. *EADTU Annual Conference 2011 : Universities and regional development in an open knowledge society;*. EADTU Annual Conference. Eşkisehir / Turkey, 3-4 November 2011 (pp. 42-58). Heerlen: EADTU.

Brewe, E., Kramer, L. and Sawtelle, V. (2012). Investigating Student Communities with Network Analysis of Interactions in a Physics Learning Center. Physical Review Special Topics - Physics Education Research 8 (1):010101-1-010101-9.

Calderwood, B. J. (2009). Learning Center Issues, Then and Now: An Interview with Frank Christ. Journal of Developmental Education 32 (3):24-27.

Hilton, J., Wiley, D. Johnson, A., and Stein, J. (2010) The Four R's of Openness and ALMS Analysis: Frameworks for Open Educational Resources, Taylor & Francis < http://hdl.lib.byu.edu/1877/2133>

Kuppens, A., Truyen, F. and Baetens, J. (2011). LACE, physical and virtual networking for an international master in literature and culture. *EADTU Annual Conference 2011: Universities and regional development in an open knowledge society;*. Eadtu Annual Conference. Eşkisehir / Turkey, 3-4 November 2011 (pp. 145-156). Heerlen: EADTU.

McKeown, Karen D., and Foundation Heritage. (2012). Can Online Learning Reproduce the Full College Experience? Center for Policy Innovation Discussion Paper. Number 3. Heritage Foundation.

Schumann, David W., Peters, J. and Olsen, T. (2013). Cocreating Value in Teaching and Learning Centers. New Directions for Teaching and Learning (133):21-32.

Touzé, S. and Truyen, F. (2013). The Openly learn where no one has learned before: hybrid learning spaces as a model of future learning. *OPEN EDUCATION 2030. JRC-IPTS CALL FOR VISION PAPERS. PART III: HIGHER EDUCATION*, 42-45.

Trammell, Jack, and Bruce, J. (2008). Utilizing Multiple Interlocking Learning Communities to Form a Center for Teaching and Learning. Learning Assistance Review 13 (1):47-57.

Truschel, Jack, and Reedy, D.L. (2009). National Survey--What Is a Learning Center in the 21st Century? Learning Assistance Review 14 (1):9-22.

Truyen, F., Van Dorp, K., Janssen, B., Rivera, J., Griset, R. and Kuppens, A. (2011). Open Educational Resources in a Muli-Campus and Virtual Campus Environment. In Gómez Chova, L. (Ed.), Martí Belenguer, D. (Ed.), López Martínez, A. (Ed.), *EDULEARN11 Proceedings CD*. EduLearn. Barcelona, Spain, 4th-6th July 2011 (pp. 001248-001258). Barcelona, Spain: International Association of Technology, Education and Development (IATED).

Truyen, F., Van Petegem, W. and Verbeken, S. (2012). OpenCourseware KU Leuven. In Gómez Chova, L. (Ed.), López Martínez, A. (Ed.), Candel Torres, I. (Ed.), *ICERI2012 Proceedings*. ICERI. Madrid, 19th-21st, 2012 (art.nr. 492) (pp.4278-4281). Madrid: ICERI.

Truyen, F., Vanthienen, J. and Poelmans, S. (2011). Experiences and Recommendations on Required Student Knowledge and E-Skills. In: Liebowitz J., Frank M. (Eds.), *Knowledge Management and E-Learning*, Chapt. 11. Boca Raton:CRC Press Taylor & Francis Group, 179-193.

Truyen, F. and Verbeken, S. (2012). Student's Agency in Open Courseware: Perspectives of Students in Taking responsibility over Open Courseware. *Online Educa Berlin Book of Abstracts*. Online Educa Berlin. Berlin, 28-30 November 2012 (pp. 94-98). Berlin: ICWE GmbH.

Wilson, K.L., and Boldeman, S.U. (2012). Exploring ICT Integration as a Tool to Engage Young People at a Flexible Learning Centre. Journal of Science Education and Technology 21 (6):661-668.

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Enhancing Privacy Protection for Wireless and Mobile Learning

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Abstract

Wirelessly enabled learning offers distinctive benefits to teaching and learning because of portability, low cost, improved communication capabilities, a greater connectivity and availability. It is crucial that learners have trust in the system they utilize. Service quality, privacy and security protection help to achieve trust. Specific privacy issues that are emphasized in mobile and wireless institutional learning environments have to be faced for realizing the full potential of mobile technology in higher education. Recorded data allow to identify students and inform about their fields of study, enrolment status, degrees, received awards, expected graduation date, etc. Directory information can be disclosed without the student's consent, whereas sensitive personal information are not released without written consent obtained from the student.

It is worth-noting that the educational student's record may contain information on other individuals. We term as *multipersonal* any information that essentially involves more than one individual (who may not be aware of the information sharing). Multipersonal sensitive information can be categorized into different classes under different criteria. In case sensitive multipersonal data are not properly managed, several individuals' privacy may be compromised.

The paper addresses m-learning privacy threats related to multipersonal data that occur in student personalized records and that may be released with the consent of the student who is the information donor. A multipersonal privacy aware policy which avoids any information loss by suitably encoding data is proposed for privacy-enhanced m-learning environments.

Keywords: Privacy in m-learning, Multipersonal information, Multipersonal privacy preserving policy.

Introduction

Privacy has several meanings and does not always involve information. Here the focus is on information privacy, that is on the right of information owners to determine when, how and to what extent information about them is collected, stored, shared, processed, communicated to others and disseminated (Chen and Liu, 2009). Privacy is context dependent in various senses. It depends on the local law (e.g., the European regulations), on the application domain (here the educational one), on the privacy policy of educational institution (here the university) and on individual's (here student's) sensitivity. Although students may be prospective students, currently enrolled students, past students, alumni, continuing education students, here a student is a currently enrolled student, namely an individual for whom the university maintains education records and who is enrolled in attending credit bearing courses at the university.

Nowadays, e-learning is going to be extended into m-learning by handheld mobile devices which allow also access to data repositories and databases, through WAP (Wireless Access Protocols) browsers, from anywhere. The m-learning potential can be exploited in distance learning as well as in classroom learning. Mobile devices can be used to record data and to capture the learning process. Potentiality of m-learning is addressed for instance in (Benson, 2008).

The privacy issue is crucial for assuring quality in m-learning. As a matter of fact, personal information is requested by the university. Also sensitive personal data may be requested by a university for specific purposes. Sensitive data shall not be released to a third party without student's explicit consent, unless it is necessary. Directory information (e.g., student's name, address and telephone numbers, class level, major field, dates of attendance at the university, current enrollment status, MSU awards, degrees, honors received and participation in recognized activities) may appear in public documents and may be released to parties outside the university without the student's specific consent. Student records are often released for, e.g., various statistics, research purposes, classifiers and education. In some cases, the university knows in advance the kind of mining work that need to be performed on the released data, but in other cases it does not.

Private personal information, that can be used to uniquely identify, contact or locate a single student, are usually accessed only on a strict need-to-know basis, in order to avoid misuses by simply curious people or by criminals. Such an information is usually de-identified, i.e. maintained in a way that does not allow association with a specific student.

However, in pervasive and cloud computing environments, the student online control on personal data looses its potential effectiveness. For instance, this is likely if personal information is managed on servers located in a Country different from that where the student lives. Thus students who have not enough trust in the system's privacy protection capability might suppress some relevant information, which may have undesired drawbacks.

Contributions and structure of the paper: A privacy threat which stems from student sensitive private data that have been collected and stored as privacy protected data by the university, is singled out. Such a threat arises from the student's consent to record as plain text and to discover some sensitive personal data that actually are *multipersonal* data (as defined in the second section of

the paper). Some requisites for a privacy policy that is fair toward individuals involved by multipersonal sensitive information are pointed out.

The paper is structured into four sections besides Introduction and Conclusions. In the first section, personalized m-learning is discussed. In the second section, multipersonal data are singled out. In the third section, a policy which is adequate to maintain the privacy of multipersonal information in the m-learning context is proposed. In the fourth section, related work is mentioned.

Personalized m-learning

M-learning environments are definitely learner-centred. Personalization is a crucial aspect of m-learning because of diverse learning subjects, different cognitive abilities, different level of prerequisites and different learning styles.

Since privacy is not an all-or-nothing notion, it can be weak or strong. The fact that privacy is essentially personalized has been pointed out since (Xiao and Tao, 2006; Poovammal and Ponnavaikko, 2009). Actually, a universal protection level may result as insufficient for some parties and excessive for others. What will cause offence strongly depends on individual's sensibility or on institution's privacy policy.

Since personalization entails also diverse privacy sensibility, personalized records may be maintained at different privacy levels and it makes sense to have diverse privacy levels inside a same repository.

Here we suppose that raw data gathered from students are organized as microdata records grouped as row tables, with columns as attributes, as it is usual in databases or repositories or datasets. According to the university policy, data will typically be classified as sensitive if they are protected under law regulations or there are proprietary, ethical, or privacy considerations.

Since our aim here is clarifying the nature of some sensitive private attribute, Table1, Table2 and Table3 are filled in by a simplified user-friendly and intuitive manner. Among personal data that can be categorized as sensitive (religion, political opinion, trade union membership, sexual life, outcomes of criminal convictions and fee information with sponsorships details) we here focus on data consisting of information regarding ethnic origins and student’s physical or mental health diseases.

Table 1 is a raw data table where two sensitive attributes (Ethnicity and Health) have been displayed. We assume that John, Anne and Henry have given their consent to store their sensitive data as plain text.

Table 1: Table sketch with some personalized sensitive data.

MSU-PID	**Name**	**Birth Date**	**Ethnicity**	**Health**
210341	John	13/09/1995	indo-european	HIV positive
213146	Robert	13/09/1992	African	(no detail)
213147	Anne	13/09/1991	Asian	haemophilia
214148	Jane	13/09/1994	indo-european	(no detail)
212149	Henry	13/09/1990	african	epilepsy
211362	Walter	13/09/1993	indo-european	(no detail)

For the disclosure perspective, microdata undergo some anonymity process, as it is roughly exemplified in Table2.

Table 2: Table sketch with de-identified Name and generalized both MSU-PID and Birth Date.

MSU-PID	**Name**	**Birth Date**	**Ethnicity**	**Health**
210000	1	[1990-2000]	indo-european	HIV positive
213000	2	[1990-2000]	african	(no detail)

213000	3	[1990-2000]	asian	haemophilia
214000	4	[1990-2000]	indo-european	(no detail)
212000	5	[1990-2000]	african	epilepsy
211000	6	[1990-2000]	indo-european	(no detail)

Nowadays it is well-known that by linking data in de-identified tables with some external data (somehow available) may determine re-identification.

There are two disclosure types, namely identity disclosure (i.e., discovering that a certain individual is included in a target table or identifying an individual who is not in the table via some individuals in the table) and sensitive attribute disclosure (i.e., associating a sensitive attribute with individuals who are inside or outside the table). Authorized disclosures without the student's prior written consent occur if the university determines that there is a significant threat to the health or safety of a student or of other individuals. Thus we can assume that nowadays student educational records are kept confidential and are disclosed only with the permission of the student, or as otherwise allowed by law.

All of policy principles for privacy protection that have been formulated for privacy-compliant systems in order to protect and manage private information that reside in databases, data repositories, etc. rely on the informed consent principle as a fundamental principle. Various informed consent principle formulations depend on geographic locations and national laws. For the information collection phase, a concise formulation that is usually in privacy-aware information systems states:

Personal information that has been collected should have the informed consent of the information donor.

Analogous statement concerns personal information disclosure.

Nowadays, situations where sensitive personal information for which the consent has been denied and can nonetheless be released, are clear enough: they concern emergency situations or legal ones or such that the information collection and disclosure are justifiable as necessary because of a public interest.

However, there may be sensitive personal information for which a privacy-aware policy should overcome the gathered consent, otherwise the policy might be unfair towards individuals having a crucial relationship with the information donor. We are going to clarify this in the next section.

A privacy threat which stems from released consents

So far, personalized privacy drawbacks due to obtained consents have not yet received attention.

The university that complies with equal opportunities policies, does record and maintain for instance ethnic origin as well as physical or mental health or medical condition in order to identify specific needs so that suitable arrangements can be made for students with specific learning differences or with disabilities. However, some sensitive data that have been collected with the consent of the information donor, potentially allow a correlation with more than one identifiable individual (not necessarily in the same table) who may not know to be involved. For instance, an additional external knowledge about Anne's relatives, may allow to know that they have, more or less seriously, Anne's hereditary disease (haemophilia). Analogously, Anne's and Henry's ethnic origin are shared with their relatives who might be *de facto* discriminated by other students in some collaborative distance learning activities.

We term as *multipersonal* any information that involves more than one individual. An information which is not multipersonal is termed as *singlepersonal*.

Multipersonal sensitive attributes should be categorized by privacy protection policies, and noticed as multipersonal to the information owners. Moreover they should be protected in a way that does not depend on any consent of the information donors.

Now, on the one hand, if the university omits recording any multipersonal information (what might be considered the strongest privacy protection), dangerous consequences may occur for the information owner and for people inside and outside the university. The contrast between privacy protection and data utility has received much attention in the last years. An acceptable compromise between privacy protection and data utility is a context dependent crucial challenge. Whereas adopting the strongest security technology which is at disposal nowadays is never dangerous (although it may have a high cost), the strongest privacy solution might be dangerous in some contexts since it may determine that data become useless. An acceptable trade-off between releasing information while preserving privacy is a major issue (Fung et al., 2010; Foresti, 2011).

On the other hand, recording a multipersonal information once the student's consent has been gathered may compromise the privacy of the involved individuals. Also seeking information about the educational history of a student may reveal information that was not intended for disclosure about unexpected individuals.

However, if the consent of just one element of a group of individuals who are involved in a multipersonal attribute is not enough, collecting the consents of all of the group components is very cumbersome if not impossible.

A fair privacy

Protection against potential attacks assumes, more or less explicitly, an attacker model. The attacker model here assumed is *semi-honest*, that is an attacker who is weak for what concerns computation capabilities but with the possibility of gathering external knowledge. Thus the semi-honest attacker is supposed to not spend work and time to circumvent privacy protection mechanisms (in order to perform strong attacks). However, the semi-honest attacker might associate a sensitive attribute

value inside an observed table with individuals outside that table, by exploiting someway gathered external knowledge.

To support data-mining tasks and to protect sensitive personal information, some well known anonymity methods have been proposed (Foresti, 2011). More specifically, anonymity methods include microdata generalizations (e.g. *k-anonymity*, *l-diversity*, *t-closeness*) that essentially consist of grouping data into broader classes, and data perturbation, that essentially consists of adding noise (e.g., numerical rounding, attribute random swapping, partially suppressing records). Privacy-aware statistical databases add random noise to the data and information is hidden by aggregating data. Several well-known papers have been published on merits and drawbacks of those privacy protection methods. In (Brickell and Shmatikov, 2008) it is claimed, on the basis of some experimental results, that even a modest enhancing in privacy protection determines almost complete loss of data mining utility.

Thus privacy protection should be designed as adequate under both an attacker model and an acceptable information loss. But some informations (e.g. medical ones) have to be recovered without information loss. Therefore masking procedures are accepted if they are losslessly invertible.

Privacy policies regulate how an organization intends to manage, protect and distribute sensitive information. Privacy protection principles have been formulated to protect and manage private information that reside in databases, data repositories, etc. For what concerns multipersonal attributes, since it may be impossible or impractical obtaining a consent from all of the involved individuals, the informed consent principle should be revisited in order to be extended into a socially fair consent principle. In (Venturini, 2013a) a *fair consent* principle for collecting information states:

Personal information that has been collected should have the consent of the information donor and should not compromise privacy of whoever is potentially identifiable by the donor's consent.

In privacy-aware systems, even if multipersonal data can be accessed by authorized users only, m-learning environments with increasing ubiquitous and cloud computing and with collaborative learning activities, could allow individuals involved by multipersonal data to be identified. The consequences can be dramatic (think e.g., of bullying. and discriminations that have lead some students even to commit suicide).

To implement a fair privacy, once no information loss is acceptable about health and ethnic origin microdata, encoding them is a solution better than generalizing them.

Encoding via number theoretic encryption can assure high security, but it is not low-cost from the computational viewpoint and requires sophisticated key management protocols. It seems to be an overprotection against semi-honest attackers. Moreover, encryption performs no data compression (rather data expansion in some cases).

Data compression is required for attribute table recording and for transmitting through wired networks and, at a greater reason, through wireless ones. Combining number theoretic encryption algorithms and compression algorithms is quite computation and technology demanding.

For applications designed mainly to be implemented in limited resource devices, a lossless compression algorithm with a security key is less computation and technology demanding and at the

same time may be secure enough against a semi-honest attacker. Specifically, Arithmetic Coding (AC) since (Willen et al., 1988) is a method which performs lossless high compression. It has several variants so far and it is getting more and more interest for applications. Recently, AC with a security key has received much attention, as e.g. in (Zhou et al., 2008).

Here we limit us to briefly recall classical AC applied on an attribute value that is represented as a binary string $S = b_1 \ldots b_j \ldots b_N$, $N > 0$:

Encoding one bit at a time, starting from the left beginning of S, the current interval $[L_j, H_j)$, which is left closed and right open, is iteratively refined as follows once it has been initialized to the unit interval, namely [0,1). Specifically, with $[L_0, H_0) = [0,1)$,

for $j = 0, \ldots, N-1$, $[L_j, H_j)$ is segmented into two subintervals whose size is proportional to the estimated occurrence probability of b_j (for instance the frequency of b_j inside S).

Once and for all it is chosen which of the two obtained subintervals lies as the left subinterval.

For $j = N$ the iterative procedure stops and returns the output subinterval $[L_N, H_N)$, nested in all previously obtained intervals.

Number L_N is taken as the arithmetic code of S.

The exemplifying Figure 1 depicts approximately the performed segmentations for S = 00111, with 2/5 as the probability of 0 and 3/5 of 1. The subinterval for 0 lies on the left.

0[----------)1
0[**********)----------1
0[****)----------1
0--[***)----------1
0---[**)----------1
0----[*)----------1

Figure 1: Graphical outline of the segmentations performed by classical AC for encoding string 00111. Interval $[L_j, H_j)$ is graphitized by *.

Here we sketch a practical protection algorithm for multipersonal attributes which exploits a suitable AC with a security key.

Encoding multipersonal attribute values

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1. Translate the multipersonal attribute value into ASCII binary representation.
2. Encode the obtained binary value by an AC with a security key *k*, so obtaining a code number *c*.
3. Replace the multipersonal attribute value in the Table with *c.*
4. Associate key *k* with the record where *c* occurs.

Since the key changes for every record, equal attribute values in different records have different codes. Such a security key is shared by all users who have authorized access to the student's record. Moreover, all accesses to multipersonal attribute values have to be traced.

Table 3: Table sketch with anonymized names, generalized MSU-PID and Birth Date, Ethnicity AC secured codes (ec) and Health AC secured codes (hc).

MSU-PID	**Name**	**Birth Date**	**Ethnicity**	**Health**
210000	1	[1990-2000]	ec_1	hc_1
213000	2	[1990-2000]	ec_2	hc_2
213000	3	[1990-2000]	ec_3	hc_3
214000	4	[1990-2000]	ec_4	hc_4
212000	5	[1990-2000]	ec_5	hc_5

211000	6	[1990-2000]	ec_6	hc_6

Related work

Notions similar, but not identical, to the multipersonal one addressed in (Venturini, 2013a) and in this paper have received attention so far.

The multicarrier notion formulated in (Chen et al., 2007) is a kind of external knowledge that can be exploited to discover sensitive information.

In (Thomas et al., 2010) multi-party privacy risks which stem from information published on social networks are pointed out. Actually students usually public information about themselves and their friends on social networks. Conflicting privacy sensibility between friends will reveal information that at least one user intended to remain private. Student's private attributes can be inferred from simply being listed as someone’s friend or being a component in a group photo. It is pointed out in (Thomas et al., 2010) that personal data revealed by social networks have been used by local law enforcement for monitoring and implicating students. The multi-party notion in (Thomas et al., 2010) is such that the revealed attributes are not necessarily multi-party by their nature. The multipersonal attributes considered in this paper, as for instance ethnic origin and health disease, cannot be handled otherwise than as multipersonal.

The multi-owner privacy in (Chen and Liu, 2009) and in (Ren et al., 2011) as well as the multi-party privacy in, e.g., (Chen and Liu, 2009), is quite different since they cover privacy problems which arise when some parties jointly are actively involved in a computation task, usually on the web.

In (Venturini, 2013a) multipersonal attributes are termed as multi-carrier. The application domain there considered is the sanitary one.

Conclusions

The aim of this paper was emphasizing that the privacy threat that stems from granted consents on multipersonal sensitive information is

quite relevant in the m-learning setting where wireless networks (less secure than wired ones) are exploited and information is stored at different privacy levels.

If a system is fair privacy compliant, privacy assurance (that provides how much a party can trust a system as able to protect privacy) may be enhanced. The fair privacy policy as addressed in this paper from learning environments honours a fair consent principle and can be implemented by exploiting a secured binary AC.

Further work This work leaves room for developments at both ethics/law and technology settings.

Practical implementations, models and policy rules could be designed in detail to enforce multipersonal privacy.

It is evident that the multipersonal notion has an application range wider than the educational or sanitary setting. In (Venturini, 2013b) the multipersonal privacy is addressed at a general setting.

References

Benson, V. (2008). Unlocking the Potential of Wireless Learning, Learning and Teaching in Higher Education, Issue 2, 2007-2008.

Brickell, J. and Shmatikov, V. (2008). The Cost of Privacy: Destruction of Data-Mining Utility in Anonymized Data Publishing, in Proceedings of KDD'08.

Chen B. C., Lefevre K. and Ramakrishnan R. (2007). Privacy Skyline: Privacy with multidimensional adversal knowledge, in Proceedings of the 33rd International Conference on Very Large Data Bases (VLDB2007).

Chen, K. and Liu, L. (2009). Privacy-preserving Multiparty Collaborative Mining with Geometric Data Perturbation, IEEE Transactions on Parallel and Distributed Computing, (XX:XX), January 2009.

Foresti, S. (2011). Preserving Privacy in Data Outsourcing, Springer 2011.

Fung, B. C. M., Wang, K., Chen, R. and Yu, Ph. S. (2010). Privacy-preserving data publishing: A survey of recent developments, ACM Comput. Surv, (42:4), pp. 1-53.

Poovammal, E. and Ponnavaikko, M. (2009). Categorical Grading Based Personalized Privacy. Preservation Against Attacks, in Proceedings of the World Congress on Engineering, Vol.1, pp. 22-31.

Ren, Y., Cheng, E., Peng, Z., Huang, X. and Song, W. (2011). A privacy policy conflict detection method for multi-owner privacy data protection, Journal Electronic Commerce Research (11:1), pp. 22-31.

Thomas, K., Grier, C. and Nicol, D.M. (2010). unFriendly: Multi-Party Privacy Risks in Social Networks, in Proceedings of the 10th Privacy Enhancing Technologies Symposium (PETS 2010), Berlin, Germany, July 2010, pp. 236-252.

Venturini, I. (2013a). Revisiting the Informed Consent Principle for Data Release, in Proceedings of International Conference on Pervasive and Embedded Computing and Communication Systems (PECCS) 2013, Barcelona, Spain, February 2013, pp. 92-97.

Venturini, I. (2013b). Multipersonal Data, to be submitted for publication to a journal.

Xiao, X. and Tao, Y. (2006). Personalized Privacy Preservation, in Proceedings SIGMOD, 2006, Chicago, USA.

Willen, I. H., Neala R.M and Cleary, J.C. (1988). Arithmetic Coding for Data Compression, Communications of the ACM (30:6).

Zhou, J., Au, O. C., Fan, X., and Wong, P.H. (2008). Joint security and performance enhancement for secure arithmetic coding, in Proceedings of the 15th IEEE International Conference on Image Processing (ICIP2008), pp. 3120-3123.

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Pentalfa - Challenges in Creating OpenCourseWare at the Faculty of Medicine, Leuven University

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Abstract

Our paper elaborates on the experiences, challenges and thresholds in publishing Pentalfa as an Open Online Course. In 2012 KU Leuven (Belgium) started publishing OpenCourseWare. Despite the fact that this project is in a pilot phase, some conclusions can already be drawn from the experiences of publishing OCW.
By opening up its education KU Leuven tries to play the role it is expected to play in society, e.g. that of a knowledge producer and disseminator. This perspective has guided our choice of courses to include in the project: OCW KU Leuven stands for socially relevant content generating debates about important topics in society.
Pentalfa, the LifeLong Learning program of the Faculty of Medicine at KU Leuven, is a series of lectures given by experts (doctors, researchers, practitioners,…) in the various fields of the domain of Medicine. Every lecture is recorded and it goes without saying that speakers need to give permission to do so. For a number of reasons this issue is more difficult to tackle than we could foresee.
Another important issue is privacy of patients. It is obvious that it is not allowed to show to a broad public patients identifiable in the audiovisual materials that are recorded during consultations at a doctor's office. This however poses some challenges when making course materials hitherto confined to the immediate clinical situation available through OCW, and requires very careful editing.
The paper presented describes the way we try to deal with these issues and we conclude by formulating some 'lessons learned'.

Keywords: OCW, OpenCourseWare, Pentalfa

Introduction

In 2012 the University of Leuven (KU Leuven, Belgium) started publishing OpenCourseWare, defined by the OpenCourseWare Consortium as "a free and open digital publication of high quality colleges and university-level materials. These materials are organized as courses, and often include course planning materials and evaluation tools as well as thematic content. OpenCourseWare are free and openly licensed, accessible to anyone, anytime via the internet" (OpenCourseWare Consortium, 2012). Despite the fact that OCW KU Leuven is still in a pilot phase we can already draw some conclusions from our experiences during the past 1.5 year of opening up our education. In the first part of this paper we will elaborate on the current situation of OCW KU Leuven and on the choices we made when developing our OpenCourseWare. The second part of the paper focuses on what Pentalfa is and on the role it takes in the flemish continued education for physicians and doctors. In a

final part we will come to our experiences in the attempts to publish the Pentalfa series openly.

OCW KU Leuven: What, Why And How?

At the time of writing five fully functional open courses are online on the OCW KU Leuven website: three in English and two in Dutch. They are meant as part of the open course portfolio which will be one of the results of the educational project that OpenCourseWare KU Leuven currently is. During the time period of the project we allow ourselves to experiment with the use and production of open courses. Hence we will have some experience with open courses once they will be structurally embedded in the education that KU Leuven has to offer.

Content and structure of the open courses

Every course is built following more or less the same structure, starting with a homepage containing a description of the most important information of the course, i.e. the content. More detailed information about the course can be found on the page that follows the homepage. The content of the course is elaborated more, as well as the learning outcome and required and/or recommended prior knowledge. The next page in the course website is the course specific study guide. Further in this article a more comprehensive paragraph can be found on the use and development of course specific study guides. After the informing part of the course wherein the student can focus on his expectations about the course, the actual content of the course is presented. We chose to divide every open course into modules. By doing so, we offer students the possibility to take only a part instead of the entire course: one can run through the module of his interest without being obliged to take the whole course.

The modules of the open courses consist of the Open Educational Resources (OERs) that are aiming to teach the student the content of the course. These resources could be almost anything: videos, web lectures (fully recorded lectures using KU Leuven's video streaming system named Videolab), texts, audio, hyperlinks… This content is offered by the professors and teachers of the regular course as taught at KU Leuven's 'regular' students.

When a student ran through every module of a course, there is a great chance that he wants to know whether he meets the learning outcome. Therefore some courses are provided with a self-evaluating test. It depends on the type of the course and on the wishes of the course's author what the evaluation looks like and whether there is one, but in general we try to offer the students several closed questions in the form of true/false, yes/no, multiple choice,… After a student completes the test, he can compare the answers he gave with the correct answer, ideally complemented with an explanation on why this is the correct answer, or with an insight on the solution strategy he could have followed.

The pedagogical role that OpenCourseWare plays in KU Leuven's education

OpenCourseWare aims at several target groups (see below) and the 'regular' KU Leuven students are one of them. Although the open courses are not an exact copy of the 'regular' courses (e.g. the level of the learning outcome or the number of modules may differ between the two versions), we notice in this initial phase of the project that professors refer their students to the open education resources. For example, one professor uses the web lectures and course text to flip his classroom. The concept of the flipped classroom can be described as the inversion of the places where certain learning activities take place (Baker, 2000). In traditional education the content is offered within the classroom, and the processing of the knowledge, the (ideally deep level) learning, to be done by the student after he acquired the content, takes place outside the classroom. The flipped classroom reverses this process: acquiring the content is done outside the walls of the classroom, mostly by using technological resources, and in the classroom social and deep level learning: students can interact with each other on the learning content that was offered prior to the lesson.

As stated above the open courses are offered apart from the regular courses at university. The learning management system that is used for the 'regular' courses is Blackboard. Within this closed learning environment there are a lot of copyrighted materials and where the privacy of people (whether they are students, faculty members, patients, etc…) is protected by the fact that the environment is closed: you only get a login when you work at university or when you are subscribed officially as a student.

Accreditation

Globally there are several ways in which OCW is offered. We at KU Leuven want to offer free courses that can be taken without any registration or enrollment whatsoever in order to make the barriers to take a course as low as possible. A direct consequence of this is that we cannot offer any accreditation or certification when a student fulfills an open course. We therefore assume that the intrinsic learning motivation of a student must be sufficiently high to complete a course entirely.

Open licensing

One of the issues we are currently dealing with is the license we want to put on the OERs offered in the courses. An open course would not be an open course complete if it consisted only of copyrighted materials. Therefore we already decided on the use of a Creative Commons License. Creative Commons (CC) is a non-profit organization that enables the sharing and use of creativity and knowledge through offering free legal tools (Creative Commons, n.d.). Their aim is to replace the 'all rights reserved' by a form of 'some rights reserved'. The tool that CC offers, is a simple and standardized way to give content users permission to share and use creative work (e.g. education), on conditions of the content provider.

The least restrictive CC License is the 'CC-BY' License, where content users are allowed to distribute, remix, tweak, and build upon the content, even commercially, as long as they credit the content provider for the original creation (Creative Commons, n.d.). From an idealistic point of view this is the license we should use. However we are fully aware that it is a big challenge to convince professors and teachers of the idealistic arguments. It is neither so surprising nor inconceivable that they are hesitant about offering their research and education under such a permissive license.

The most restrictive license is the CC BY-NC-ND License where content providers are only allowing others to download their content and share it with others as long as they credit the provider, but where users can't change the content in any way or use it commercially (Creative Commons, n.d.). Since we are still investigating what the legal consequences of the different possible Creative Commons Licenses are, and since we didn't yet decide on the license to use, it's this most restrictive one that is currently the license we put on the website. Indeed, a transition to a less restrictive license is legally possible, whereas the opposite is not allowed (Creative Commons, n.d.).

As stated above we have not decided yet what license we should use. More specifically the use of KU Leuven's OERs in a commercial context, and the question whether or not users are required to share the OERs under the same license as the one we used, are points of discussion.

Target groups

We already mentioned one way in which we want to address OCW to the daytime KU Leuven students, namely in the concept of the flipped classroom (see above). Another way is our hope that KU Leuven's students (and moreover students of other universities, worldwide) will use our OpenCourseWare complementary to their own courses. This could be of great value if the concerned

course is a so-called 'stumble course': a difficult course with which many students struggle. Also if the lessons of a professor or teacher are not of good quality, it is a possibility to take an open course complementary to the one they take at university, in order to be empowered: a student can become independent from his teachers. A last potential scenario is that OCW can be used to increase or to replace student mobility. The relationship between OCW and (virtual) student mobility is elaborated more in the next paragraph where there is a section about the aim to internationalize by using OCW.
In this paragraph we want to describe other important target groups besides students who are studying at universities. In general, OpenCourseWare aims at a broad public, at a wider audience than only its students, hence to anyone potentially interested in either the content offered, or in KU Leuven's education.

One specific target group are the potential students of KU Leuven, who are at this point in a decision making process of what study they will start in the future. In order to get a clearer view on what it feels like to take classes at university, they can run through the academic educational resources. This could take away their doubts about university or on the contrary it could make them make a better decision based on the orientation by using or looking at OCW.

Moreover we try to describe the target groups separately for every open course. For example, an open course on lung disease could be particularly interesting for self-help groups or associations of patients with lung diseases. By communicating about the existence of OCW KU Leuven in the community of the specific target groups, we could be able to develop networks of knowledge, in which every potential stakeholder could deliver knowledge and content in order to extend the knowledge building within this knowledge network.

Why opening up KU Leuven's education?

There are several reasons why KU Leuven started with OpenCourseWare. First there is the exposure that KU Leuven wants to get from OpenCourseWare. This exposure can be seen on two levels. On the level of the institute, we want to be present in an academic world. KU Leuven indeed has a lot of expertise amongst its employees and not to make use of this expertise would be a missed opportunity since KU Leuven wants to stand for knowledge and research of high quality. Also the exposure on an individual level is an aim. It is not so much the very specialized knowledge that KU Leuven wants to show in the open courses (this expertise is publicized in the peer-reviewed journals), but it is more the basic insights, aimed at a wider audience, that are at stake.

A second reason for OCW is the impact on the Higher Education Institutes in Flanders (and beyond). It is known that e.g. in university colleges in Flanders teachers are using the contents and educational resources they received when they were students themselves. This content can be outdated by up to 20 years. By opening up the courses taught at KU Leuven, teachers and other stakeholders can make use of this state-of-the-art knowledge. After all, academic education is paid by society, so it should give something back to society.

A third motive is internationalization. Especially in the European Lifelong Learning project where KU Leuven is part of there is a strong emphasis on Student Mobility. This project seeks to investigate several scenarios and ways in which OpenCourseWare can be used to enhance student mobility. In this paper we present you the in our opinion two most important scenarios. On one hand an open course can be used to bridge the possible knowledge gap between the level of competency of a foreign student and the level the student should have acquired before going to the university abroad. It is possible that one or more courses were not part of his curriculum before going abroad. In order to cover this gap one could take an open course independently prior to his international study adventure. On the other hand, not all students are in the possibility to study abroad for several months. There might be issues when it comes to finances, health, family issues, etc… These students

could take an open course at a university abroad, and thus have some insights in the contents that are taught at other universities.

A forth reason is the potential quality control one could achieve by opening up his education. Feedback from stakeholders or from other experts within a knowledge domain reaches a professor much faster when his course is open. When this feedback reaches a professor, also his own regular students at university can benefit from that. Besides the feedback for the professor, there is also the fact that open courses setup in a very innovative and creative way will draw automatically more attention from the stakeholders and the network, so it could be a stimulant for professors to come up with fancy open courses. Striking contents or lectures are shared more, so this could affect the exposure we have elaborated in the first motive.

The fifth and final important reason to start with OpenCourseWare is networking. To us, it's very important to explicit the stakeholders of an open course. By stakeholders, we mean these people and organizations that have no formal connections to the university or its faculty, but who do have a bond with the knowledge domain of the course. It goes without saying that this could affect the promotion of the Lifelong Learning idea. Stakeholders will be in the possibility to professionalize themselves through the open courses. A good example of this professionalization is Pentalfa, a learning program aiming at Flemish physicians who are required by the government to follow accredited professionalization sessions.

In several other countries there is the important motive of widening participation to start with OpenCourseWare. In some countries, OpenCourseWare is indeed a way to make knowledge accessible for everyone. Since higher education in Flanders is already quite accessible and democratic, this was not a motive of any importance for us. Just to compare, the registration fee for one course at the Open University UK is higher than the fee that Flemish students pay to enroll at university for one academic year.

Guiding students in their learning process: the use of Study Guides

In the concept of OpenCourseWare as it is conceived at KU Leuven, course takers should be able to run through a learning process fully independently; which means that content providers should provide open course students with all the resources they need in order to fulfill a course. It is obvious that on the one hand these are the resources concerning learning content: course texts, web lectures, videos, audio, test, exercises, slides used in colleges, links to other OERs, etc…

However, offering content is not enough. An accumulation of OERs is not necessarily a course. Developing courseware requires that these OERs are offered in a didactically thoughtful sequence and that the student receives information about which steps he can take to tackle his learning process as efficiently and effectively as possible. Only then a student will in the end become a self-regulated learner.

Since we at KU Leuven decided that we don’t allow our OpenCourseWare students to be in contact with their peer students nor with faculty members and authors of the course, did we develop study guides. There are two kinds of study guides that we offered to students: the general study guide and the course specific study guides.

From the homepage of OCW KU Leuven there is a link to the **general study guide** in which we provide students with a step by step guide on how to approach an open course in general. We help them to choose the right course, we show them how to use the study materials in the courses, technically as well as didactically, and finally we provide them with information about study methods. This means that we link to the existing documents that university's Service for Student

Support developed for its own students, and that we give advice upon the use of certain software to e.g. annotate PDF files on a mobile device of to make digital mind maps. A study guide thus is more than an ECTS form, since we really want to guide students in their study (what's in a name?) and we advise them how to study the proposed contents. This general study guide is complemented by an extensive Frequently Asked Questions section. Professors are being contacted frequently by students with questions about their course, so we can first of all try to setup the course in such a way that the question doesn't arise, and if it does, we'll provide an answer to it.

Given the fact that every open course has its own specificity when it comes to the way in which students give meaning to and constitute their learning process, we wanted to complement the general study guide with **course specific study guides**. In this study guides we provide the student with a more detailed insight in the content of a course and in the learning outcome that he should be able to achieve when having finished the course. This learning outcome is formulated as learning goals and competencies to be reached. The next chapters in the course specific study guides are the description of the evaluation (if there is one) and finally some hints that the authors/professors of the open course want to give concerning the learning process. Professors often have a very clear view on what they want to achieve with the students in their courses. And they often can give very valuable advice on how to reach this goal. It is this kind of advice that we want to elaborate in the description of the learning process, which is the last part in the course specific study guide.

In the future we will present the study guide in the form of videos, knowledge clips and screenshots. We feel that video is the future when it comes to providing advice, and we certainly believe that in this matter we can collaborate with the existing Service for Study Support at KU Leuven.

Pentalfa at KU Leuven: What and How?

Foundation of Pentalfa

The field of medical sciences is subject to rapid evolutions which makes Lifelong Learning required for everybody working in this domain. The KU Leuven Faculty of Medecine offered seminars for continuing education to its alumni, but increasing workload for physicians and the dramatic rise of problems with traffic formed a threat for attending the seminars. Other forms of education had to be investigated and in 1998 Pentalfa was initiated to replace the face-to-face seminars (Himpens, 2002). Supported by technological developments in the field of videocommunication, Pentalfa opted to offer the seminars virtually and to make use of distance education techniques to ensure facilitate permanent education (Himpens, 2002). Not only commuting problems are avoided through the use of communication technologies, but Pentalfa is also available on a larger scale, since more physicians are able to attend the seminars (Pentalfa, 2013).

Organization of Pentalfa

In weekly sessions during the academic year, a multipoint videoconference is organized dealing with different medical topics, and with alternating sets of experts and audiences (Himpens, 2002). Every seminar offers the floor to several speakers who are all experts in the topic of that particular seminar. This ensures that the most recent research can be presented to the audience. The speakers do their presentations in a room especially equipped to support the videocommunication, situated in UZ Leuven, the hospital that is linked to Leuven University (BE). The presentation is streamed simultanuously to five other large hospitals spread in the Flemish region. These hospitals were selected based on their infrastructure, the level of interest and willingness to participate, and the suitability as a venue from the point of view of technical infrastructure and location. The latter enabled Pentalfa to provide a service to a widely dispersed geographic audience within Flanders (Himpens, 2002).

Pentalfa as OpenCourseWare

As stated above one of KU Leuven's key roles is to spread knowledge and developments within the research domains it is active on in society. The same principle holds for OpenCourseWare: in the selection of courses to be published, we prefer courses that are suitable for a wide audience and preferably with a socially relevant subject (e.g. health, environmental studies, education,…). In our opinion Pentalfa and the contents it deals with is a socially relevant subject that offers state of the art knowledge for a domain in which many stakeholders are involved. Think of all the patient associations who are very much interested in the scientific evolutions pertaining to the diseases and health issues their members are suffering from. Merely because of this reason we are eager to have Pentalfa in our list of Open Courses: we simply believe that this Course would serve a wide audience.

Challenges faced in transforming Pentalfa into an Open Course

As stated in the abstract and introduction of this paper, due to a range of reasons (of which some are specific to Medical Sciences) OCW KU Leuven is facing several issues and limitations in its attempts to publish Pentalfa as OpenCourseWare.

Most of the issues are related to copyright, for instance a large part of the speakers use graphs, images or videos in their presentation of which the source is not identified and the licence not cleared. This is not a problem as such in a closed educational environment, but becomes an issue when those recordings become public when posted online.

A second problem is that in the domain of Medical Sciences the majority of research leads to the development of medications, drugs and products that will be patented for the first several years of their production. That means that research results are not always meant to be published, let alone with an open licence. This is not only an issue when the research results in patented products but also when the findings of the research are not yet published in the domain-specific journals and publications. Accordingly, an open publication of the research is not preferred by the speakers.

A third consideration concerns cases where speakers use video or audio recordings to support their story. Indeed the items to be researched often relate to a patient who is an individual who understandably does not always want to be recognized in the context of his health problems or disorders. However, since the audience in the Pentalfa seminars are all physicians, who are used to dealing with privacy issues and with the deontology of secrecy about patients' identities, most speakers don't edit their recordings in order to make the patients unrecognizable. The consensus amongst the speakers and participants, who are all physicians, is that they will not communicate openly about the content of the recordings they saw or heard in the seminars. It goes without saying that this is rather irreconcilable with the open publication of the presentations.

The particularity of the Pentalfa situation makes it indeed rather difficult to openly publish the seminars, especially since most speakers don't have the time (or sometimes willingness) to keep the described issues in mind when presenting, nor are they capable of, for instance, edit their recordings.

Initiatives taken to tackle these issues

Together with the people of the Pentalfa team, we tried to tackle the issues described above in several ways.

First of all we contacted ICRI[101], the Interdisciplinary Centre for Law & ICT at KU Leuven, which is a research centre at the Faculty of Law of KU Leuven, dedicated to advance and promote legal knowledge about the information society through research and teaching of the highest quality. (ICRI, 2013). Prof. Jos Dumortier, director of ICRI, advised us to compose a consent form with two aims: first of all it is necessary to inform speakers about the fact that their presentations will be recorded and to notify them that the recordings will be published online openly. In the document we explain what 'openly' means and we inform them about what will happen with the materials they will offer. A second aim is to let speakers take responsibility for the content and resources they offer, for instance when they decide to use other researcher's resources and do not take copyright into account. The same applies to patient's rights: here too it is the speaker who is accountable for what is being recorded.

The first experiences with the consent form are positive. In the spring of 2013 the document was presented for feedback to a group of doctors who found that speakers are not enough protected when they are given the responsibility for e.g. infringements and they asked to delete the corresponding article. Another suggestion they did was to give speakers the opportunity to omit certain slides from the recordings, so that they still could use them in the closed environment of the Pentalfa seminars. The document has been reformulated according to this feedback and since then only two speakers out of more than 20 did not want to sign the form. We can assume that the document will be used more often from September 2013 on.

Pentalfa and Creative Commons

Since at KU Leuven we have the ambition to publish our OpenCourseWare under a Creative Commons License, we looked into the possibility to do so with the Pentalfa materials. The answer is negative. Pentalfa owns the copyrights on the recordings of the seminars and therefore we should be able to publish the recordings under a CC License. However, since the content presented in the seminar is not owned by the people of Pentalfa, but by the speakers themselves and since, given the nature of what is presented at Pentalfa, they are (for obvious reasons) not willing to publish their content under this license, neither can we.

State of the art

At the time of writing we are still trying to publish Pentalfa as OpenCourseWare for about a year. We made some progress in this process but we are far from the actual publication of the recordings. The Pentalfa staff developed charters and documents to be signed by the speakers in order to inform them about the consequences of copyright infringements and or privacy issues. However, since in some cases it is hard to find speakers for the Pentalfa seminars, the unwillingness to be recorded and to take the copyright and patient privacy issues into account, makes it even harder.

Conclusion

Despite the fact that Pentalfa is high on the wishlist of OCW KU Leuven, given its social relevance and the fact that it is a seminar series which is highly rated in the domain of Medical Sciences, it is a major challenge to publish the presentations as OpenCourseWare. At the same time, several of the difficulties we face are issues that can be generalized as tresholds when trying to publish a course openly, regardless of the domain. We will keep trying to overcome the described issues to be able to publish Pentalfa as OpenCourseWare.

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101 http://www.law.kuleuven.be/icri/

Acknowledgement

We would like to thank Prof. Dr. Jos Dumortier for his advice concerning the publication of OCW Pentalfa and for his support in the development of the consent form. Our thanks also goes to Prof. Vincent Thijs and Bram Willems, both part of the Pentalfa team who are willing to cooperate with OCW KU Leuven.

References

Baker, J. (2000). The "classroom flip" : using web course management tools to become the guide by the side. *11th International Conference on College Teaching and Learning.* Jacksonville, FL, USA.

Creative Commons. (n.d.). *About the Licenses - Creative Commons*. Retrieved December 2, 2012, from http://creativecommons.org/licenses

Creative Commons. (n.d.). *About - Creative Commons*. Retrieved December 2, 2012, from http://creativecommons.org/about

Creative Commons. (n.d.). *Frequently Asked Questions - CC Wiki*. Retrieved December 2, 2012, from http://wiki.creativecommons.org/Frequently_Asked_Quesions

Himpens, B. (2002). Postgraduate Continuing Medical Education via Videoconferencing at the KU Leuven in Belgium: an Evaluation of Pentalfa. In A. Kallenberg, & M. van de Ven, *The New Educational Benefits of ICT in Higher Education* (pp. 30-38). Rotterdam: Erasmus Plus BV.

ICRI. (2013, July 15). *Interdisciplinary Centre for Law and ICT (ICRI)*. Retrieved September 25, 2013, from ICRI: http://www.law.kuleuven.be/icri/about_eng.php

ICTO-adviesraad. (2009). *Nota open leermaterialen: Openheid en auteurschap in de integrale leeromgeving.* KU Leuven. Leuven: Onderwijsraad.

OCW KU Leuven. (n.d.). *Study Guide - OCW KU Leuven*. Retrieved April 28, 2013, from OCW KU Leuven: http://ocw.kuleuven.be/all-courses/OCW_F0UO1AN/studyguide

OpenCourseWare Consortium. (2012, 12 12). *OCW Consortium - What is OpenCourseWare?* Retrieved from OCW Consortium: http://ocwconsortium.org/en/aboutus/whatisocw

Pentalfa. (2013, June 19). *Geschiedenis - Faculteit Geneeskunde KU Leuven*. Retrieved September 24, 2013, from Pentalfa: https://med.kuleuven.be/nl/permanente-vorming/pentalfa/over-pentalfa/geschiedenis-1

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"LLL: Long Live Learning?"

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Abstract

Although life long learning has been featuring on the educational agenda for years most European countries are a long way from realizing the 15% participation target of the European Commission. By setting up a Centre for working and studying in 2008 the University of Antwerp (Belgium) aimed at moving the idea of life long learning forward.

"Centrum WeST", the Centre for Working and STudying, operates directly under the Department of Education and provides information and guidance to students who combine a full or part time job with their study programme. In close co-operation with the Open University (The Netherlands) the Centre promotes and supports blended course and curriculum development in all faculties in order to meet the requirements of working students. Both faculty members and administrative staff should be aware of life long learners' need for flexibility and respect their specific learning profile (see dissertation by Ann Huybrechts, Institution of Educational and Information Sciences, University of Antwerp, 2012). In order to guarantee an open educational market to working students the institutional strategy needs to be based on innovation and change. Therefore the University of Antwerp focuses on a successful transition to technology based teaching and learning through its electronic platform (Blackboard), which is also used in the evaluation process.

By providing a flexible and open institutional model the university can play a crucial part in a society that gives priority to upgrading the skills and knowledge of its citizens within the European framework of life long learning.

Keywords:
opening up education, participation in life long learning, working students, institutional strategy

Introduction

Although lifelong learning has been featuring on the educational agenda for years most European countries are a long way from realizing the 15% participation target of the European Commission. By setting up a Centre for Working and STudying (Centrum WeST) in 2008 the University of Antwerp (Belgium) aimed at moving the idea of lifelong learning forward.

FRAMEWORK

- The European Agenda for LLL

In its policy documents for 2020 the European Commission highlights seven flagship initiatives, as shown in the table below.

Smart Growth	Sustainable Growth	Inclusive Growth
Innovation ***« Innovation Union »***	Climate, energy and mobility ***« Resource efficient Europe »***	Employment and skills ***« Agenda for new skills and jobs"***
Education and employment ***« Youth on the move »***	Competitiveness ***« An industrial policy for the globalisation era »***	Fighting poverty ***« European platform against poverty »***
Digital society ***« A digital agenda for Europe »***		

Table 1 : Martina Ní Cheallaigh, European Commission, Brussels, 6 May 2013

Under the heading of "*INCLUSIVE GROWTH: An Agenda for New Skills and Jobs"*, the Commission calls on Member States to ensure that European citizens acquire the skills needed for further learning and future jobs. Not only vocational training and higher education but also adult education plays an important role in reaching this goal. In fact the European Commission has been quite ambitious in setting the Agenda for ET 2020.

PRIORITY	BENCH MARK 2020
Early school leaving	**10%**
Adult participation in learning	**15%**

Table2 : Martina Ní Cheallaigh, European Commission, Brussels, 6 May 2013

The following elements are crucial factors in this European vision of adult learning for 2020:

- access to high quality learning any time in life for personal, social and economic ends
- adequate resourcing
- focus on learners and learning outcomes supported by guidance and validation
- learning locally with a significant role for social partners, civil society and local authorities
- mutual learning & solidarity between generations.

These goals make clear that the European Agenda for LLL requires a balanced distribution of education and training resources throughout the life cycle on the basis of objective needs and common responsibilities within a framework of strong public commitment, particularly to second-chance students. This can only be reached by intensifying cooperation with all stakeholders, both on local and national level, in order to improve quality and efficiency of lifelong learning programmes.

WAKE-UP CALL

- Making LLL a reality

Looking at the current state of affairs we are apparently not making any progress towards the benchmark for 2020, resulting in a huge skills mismatch on the labour market.

PRIORITY	BENCHMARK	EU AVERAGE 2006	EU AVERAGE 2011
Early school leaving	**10%**	**15,5%**	**13,5%**
Adult participation in learning	**15%**	**9,5%**	**8,9%**

Table 3 : Martina Ní Cheallaigh, European Commission, Brussels, 6 May 2013

Educational attainment	Skills supply in 2011	Forecasted skills demand 2020
High	26.8%	35%
Medium	46.6%	50%
Low	26.6%	15%

Table 4 : Martina Ní Cheallaigh, European Commission, Brussels, 6 May 2013

In order to reach the European ET targets for 2020 it is the urgent responibility of each Member State to evaluate the current situation on a national level and to respond promptly and adequately to this wake-up call.

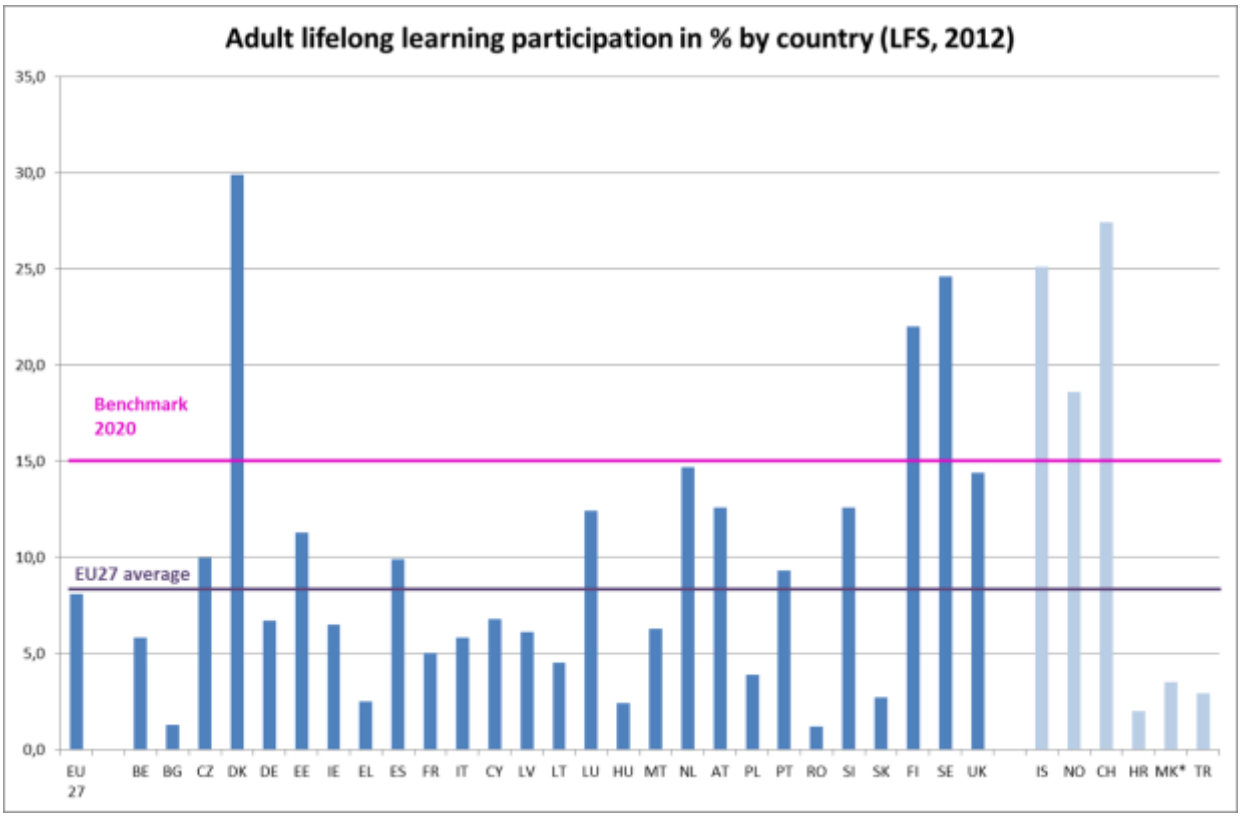

Table 5 : Martina Ní Cheallaigh, European Commission, Brussels, 6 May 2013

In order to make lifelong learning a reality in 2020 some national and European priority areas should get a more prominent position on the Agenda:

- improving the quality and efficiency of continuous education and training
- promoting equity, social cohesion and active citizenship through adult learning
- enhancing the creativity and innovation of adults and their learning environments
- improving the knowledge base on adult learning and monitoring the adult learning sector.

CONTRIBUTION TO THE AGENDA

Institutional level: University of Antwerp (Flanders, Belgium)

- Policy declaration

In its policy declaration for the academic period 2009-2013 and renewed for 2013-2016 the University of Antwerp defined some explicit targets on lifelong learning:

- The number of working students should increase from 700 to 1000 (i.e. from 3 to 5% of the student population)
- Faculties should adapt more study programmes for the benefit of working students
- Faculties should develop more short post-academic programmes (20-60 ECTS)

- Faculties should integrate more courses of the Open University (The Netherlands) in their study programmes, by recognizing the credits (ECTS) or by setting up joint programmes
- The national authorities should (financially) reward the university's efforts for working students.

- Core values

The University of Antwerp distinguishes four interrelated core values in its vision on education, which apply to lifelong learning as well:

- *Nexus education - research.* Academic education is rooted in scientific research. University students need to acquire essential knowledge and skills to fulfil their part in society.
- *Competence-oriented education.* Students develop competences as an integrated whole of knowledge, skills and behaviours. Thanks to these competences the university graduates are able to act effectively and efficiently on an academic level in a professional environment.
- *Student-centred and activating education.* Students are seen as active and independent partners who manage their own learning. The educational programme should stimulate and support that attitude. It has an eye for specific talents and a genuine respect for different educational, professional, social, cultural or religious backgrounds and individual ambitions.
- *Internationally oriented education.* The university wants to foster an open and global vision in its students by international exchange and joint programmes. Students get the opportunity to prepare themselves for participation in scientific research at an international level.

- Action plan for degree-oriented lifelong learning: executed by Centrum WeST

In 2006 Antwerp University started two educational innovation projects concerning working students (in the faculties of Law and Social Sciences). The main purpose was to offer an alternative for the traditional "evening programmes". Both projects expired after one year but the University of Antwerp wanted to continue its efforts for the specific needs of the working students and launched Centrum WeST, a centre for working and studying, in September 2008.
"Centrum WeST", the Centre for Working and STudying, operates directly under the Department of Education, as it provides information and guidance to students who combine a full or part time job with a degree-oriented study programme.

Centrum WeST, the Centre for Working and Studying, covers four main goals:

1) widening access to higher education

The target group of the centre are students who combine their study with a regular job. Since they also have a third aspect to consider, their family life, the combination is not obvious at all. So the aim of the centre is to increase and sustain the motivation for lifelong learning, particularly among economically disadvantaged or low-qualified groups, by offering information and guidance to working students.

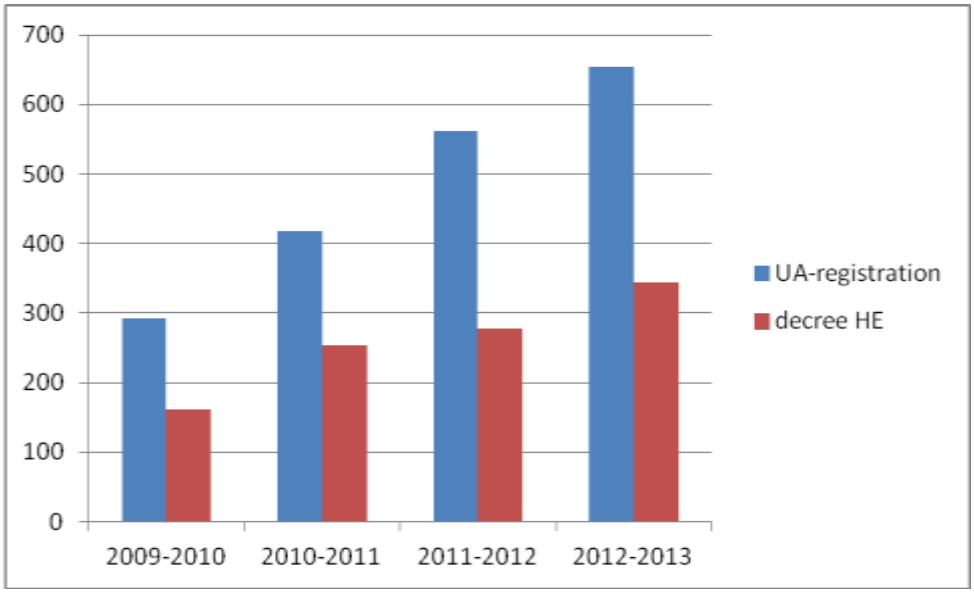

Table 6: registration of working students (UA-definition vs Finance Decree HE)

Over the years the Centre generated a continuous growth in its number of registered working students. However, the Finance Decree (HE, Flemish government, 2008) only offers extra financial support for working students who fit into a limited definition: i.e. working students who access higher education without a master's degree. Nevertheless the University of Antwerp decided to target all students who want to combine work and study in order to promote lifelong learning on a wider scale.

2) coaching and supporting working students

Besides informing working students through various channels (e.g. brochures, website, newsletter, email, personal appointments), Centrum WeST also supports them in their study. Working students often have not studied for a long period of time and going (back) to university might be a new environment they are not familiar with. Problems may arise with planning the study load, IT skills, reading and writing academic texts, etc. Therefore Centrum WeST organizes -in cooperation with other departments and services- evening sessions and workshops to learn or refresh skills that are required for an academic study. The centre also offers networking activities and lectures on lifelong learning related topics.

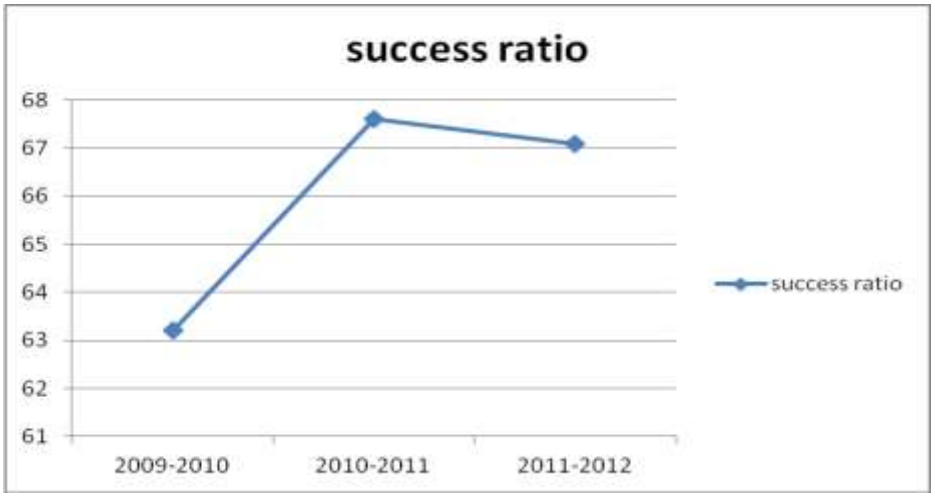

Table 7: success ratio (% acquired ECTS) of working students

3) development of courses in blended learning in collaboration with the teaching staff

In order to guarantee an open educational market to working students the institutional strategy needs to be based on innovation and change. Therefore the University of Antwerp focuses on a successful transition to technology based teaching and learning through its electronic platform (Blackboard), which is also used in the evaluation process.
This system of blended learning is an interesting approach for the working students since the amount of lectures and working sessions can be strongly reduced and the study material is developed for distant learning and adapted for self study. In close co-operation with the Open University (The Netherlands) the Centre promotes and supports blended course and curriculum development in all faculties in order to meet the requirements of working students.

4) Promoting the interests of lifelong learners

Centrum WeST tries to make sure that the interests of the working students are taken into account, both through internal collaboration with different university departments and services and external contacts with all stakeholders. Both faculty members and administrative staff should be aware of life long learners' need for flexibility and respect their specific learning profile (see dissertation by Ann Huybrechts, Institution of Educational and Information Sciences, University of Antwerp, 2012).

Reaching this goal of providing effective continuing education and training for working students requires rethinking and redirecting traditional educational systems towards stimulating open and flexible learning paths that accomodate different types of learners in a supportive mutual learning environment .
Embedding concepts of widening access and lifelong learning in their institutional strategies is definitely a fundamental task for the universities. However, it is also a common goal for society as a whole to stimulate a culture of lifelong learning which should develop incentives for working students and curriculum design fit for purpose. There is also an urgent need for debate on how lifelong learning programmes that will benefit individuals, employers and society as a whole can be funded fairly and adequately. In times of economic crisis and budget restrictions the key challenge is to find ways to open up the current educational services to a more diversified student group and to ensure further learning opportunities throughout a lifelong career.

- European level: *towards more flexibility in higher education*

In the twenty-first century European universities are faced with complex social and economic challenges that are generated mainly by the effects of globalisation, demographic changes and technological innovations. The resulting need for constant adaptation can only be met by universities who engage their students in lifelong learning to deal with local developments within a wider European perspective. The national strategies should be developed within a European dialogue among universities which are willing to contribute to a culture of lifelong learning that meets diversified learner needs.
In recent years working students have become a specific target group, both for the national governments (e.g the decree on the financing of Flemish higher education) and for the universities themselves. The changes in the landscape of higher education in recent years have created more possibilities for this target group. So European universities have adopted a very flexible system for full-time and part-time study that entails some essential LLL characteristics:

- recognition procedures for prior learning (both formal and informal)
    - Students can make use of recognition procedures for formal and non-formal prior learning. By way of these procedures students can be exempted from one or more courses of their degree programme.

- bridging programmes for access to master degrees
    - Universities can offer so-called "bridging programmes" for bachelors graduated at vocationally oriented institutions who want to supplement their study with a master's degree.

- flexible study progress
    - Flexible study progress. Students can compose quite freely study programmes ranging from 3 to 66 ECTS per academic year. Students can obtain academic degrees at their own pace.

Unfortunately this degree of flexibility offered by the educational institutions does still not correspond with the reality on the work floor, where the demand for lifelong learning (79%) apparantly is not met equally by the opportunities offered (41%).

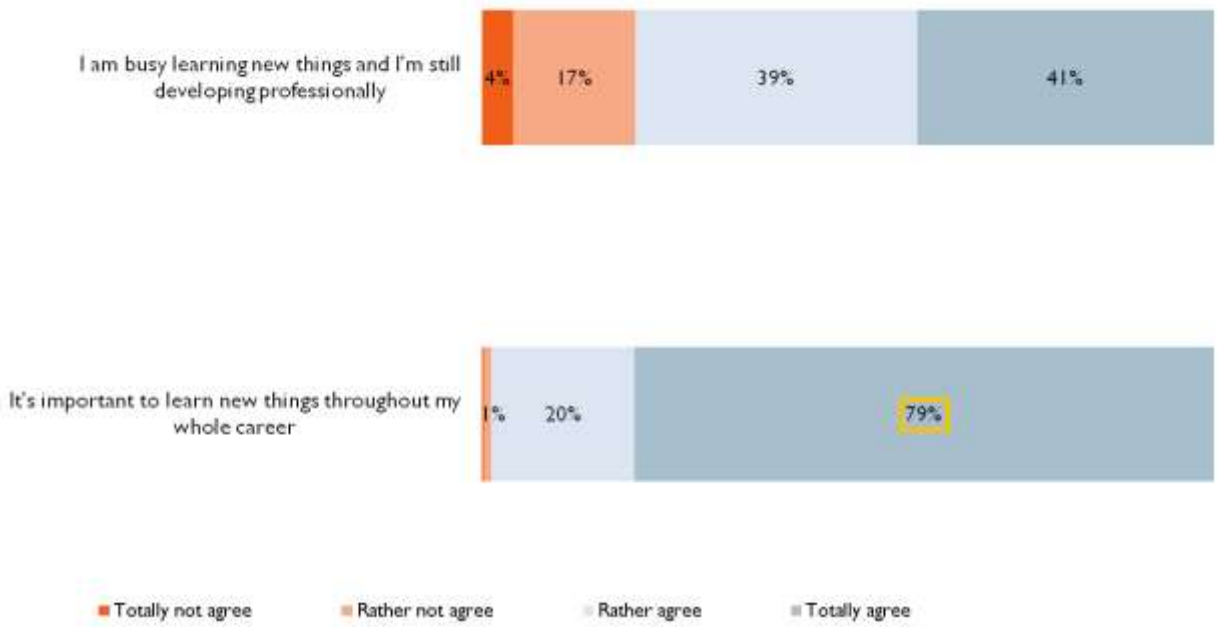

Table 9: Lifelong Learning in the Human Age, Experis Survey, 2012

Flexible learning paths which are clearly designed from a learner-centered perspective succesfully enter the element of STUDY into equation of the WORK-LIFE balance. Governments should also remove specific legal obstacles that discourage many potential learners from taking advantage of lifelong learning opportunities. This means taking action on matters such as social security rights, precariousness of employment rights, lack of financial support for lifelong learning and loss of pension contributions during periods of study.

LONG TERM ENGAGEMENT

The SIRUS-project (Shaping Inclusive and Responsive University Strategies) highlighted the need for "The Engaged University" which respects the agreements of the EUA Charter on LLL, as drafted in 2008. The University of Antwerp fully agreed to signing this EUA Charter because it considers lifelong learning an intrinsic characteristic of degree-oriented learning at its university In fact, all its lifelong learning actions can be traced back to one phrase in the long-term strategic goals the University of Antwerp, as defined in its mission statement in 2003:

The University of Antwerp wants to offer everybody with the appropriate competences the opportunity to acquire scientific knowledge, attitudes and skills to realise his or her role in society. In the light of the need for life-long learning, the Universiteit Antwerpen organises an educational offer in initial, advanced and continuing studies, accessible for specific target groups of all generations.

An institution with a culture of inclusiveness is driven by a strategy that balances academic values and individual development. By adopting an institutional strategy in which the concept of lifelong learning plays an important role universities can fulfill their commitment to serve society.

Conclusion

The lifelong learning agenda is a time-consuming process of encouraging institutions to move from an activity-based approach to an inclusive strategy for different types of learners. By providing an open and flexible institutional model universities can play a crucial part in a society that gives priority to upgrading the skills and knowledge of its citizens within the European framework of life long learning.

References

Council conclusions of 12 May 2009 on a strategic framework for European cooperation in education and training (ET 2020)

European Universities Association (2008). European Universities' Charter on Lifelong Learning

European Commission (Indicators and benchmarks 2010/2011). Progress towards the common European objectives in education and training.

Experis Survey (2012). Lifelong Learning in the Human Age

Financing of Flemish Higher Education (Flemish Government Decree 14/03/2008)

Huybrechts, A. (diss. Institution of Educational and Information Sciences, University of Antwerp, 2012). Werken én studeren: een haalbare kaart

Ní Cheallaigh, M. (presentation, European Commission, Brussels, May 2013)

Smidt, H & Sursock, A. (2011). Engaging in Lifelong Learning: Shaping Inclusive and Responsive University Strategies (SIRUS)

University of Antwerp (2010). Institutional LLL Strategy (esp. combining working and studying)

Vanthournout, G. (2011). Patterns in student learning: exploring a person-oriented and a longitudinal research-perspective.