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e-skills, soft skills & social skills - students' competences on a digital age

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Abstract. The demands on today's digital society raise the necessity of students to acquire different skills and competences - a new kind of literacy. Besides digital skills, there is also the need of being in possess of social and soft skills. Learning, due to the advent of social Web and collaborative virtual environments, has a lot to do with socialization. This article aims to know if and how these competences and access to digital and virtual tools can change students learning processes, allowing them to be more participative in constructing their knowledge.

Keywords: e-skills, soft skills, social skills, web 2.0, virtual environments, higher education, digital literacy.

1 Introduction

Social and collaborative web are making changes in the way students learn, especially in a distance learning format. In a digital society students use simultaneously diverse types of media in their daily lives, therefore to them traditional teaching is poorly stimulating. Education is in need of a change, becoming more personalized, reflexive, social connected, involving and permitting instant gratification to embrace both *native and digital immigrants* (Prensky, 2001).

Social Web, virtual environments and Web 2.0 tools, by nature, are spaces that allow a closer contact between users, enhancing cooperation, collaboration and socialization among them. Students daily use it, but to actually learn and retain knowledge available on the web there is the need of acquire digital skills (e-skills), social (soft) skills and be digitally literate.

This article aims to know if and how these competences and access to digital and virtual tools can change students learning processes, allowing them to be more participative in constructing their knowledge. To achieve this goal a literature review will be presented along with examples for further implementation.

2   Learning in a digital and connected age - skills and competences

Students need to acquire certain skills and competences, specific of a digital and connected society in order to *"effectively benefit from e-government, e-learning and e-health services, and participate actively in the knowledge society as co-creators, and not simply consumers, as highlighted by the European e-skills strategy"* (McCormack, 2010). To only possess hard skills (that comes with experience and formal education) may not be enough to land someone a job. Besides e-skills and e-literacy competences, soft and social skills are also a demand. These skills and competences can be practiced and enhanced in virtual environments - which are by its nature social and collaborative spaces. Students have access to virtual worlds with role-play and simulations, social networks and a wide range of web 2.0 tools, which allow them to practice and develop some of the skills and competences. In an e-learning format, which normally means to study at a distance of 'brick and mortar' tertiary institutions, e-skills are a demand. And in spite of what one might think to learn at a distance is not by itself a synonymous of being isolated from the world; on the contrary, to be able to socialize and communicate is crucial, so that the student can maintain motivated, and also so that he can take advantage of collaborative tools to create and share knowledge. Therefore the acquisition of soft and social skills are mandatory.

2.1   e-Literacy or digital literacy

E-literacy or digital literacy, more than one skill is a group of competences that allows an individual to acquire knowledge through digital processes. It refers *"to the awarenesses, skills, understandings, and reflective approaches necessary for an individual to operate comfortably in information-rich and IT-enabled environments"* (Martin & Ashworth, 2004).

To better understand digital literacy, first is important to understand the literacy concept - the ability to comprehend what we read, to give meaning, understand written language. Not having any relation to the fact of one being educated or not.

So being digital literate does not refers only to the capability to use a computer or an email, but to the capability to gather, understand, interpret and share information available in all digital media. Being digital literate gives us the ability to communicate and work more efficiently, because it involves understanding how all digital devices work and how they can be used to interact with society. Digital literacy is "*A person's ability to perform tasks effectively in a digital environment (...) Literacy includes the ability to read and interpret media, to reproduce data and images through digital manipulation, and to evaluate and apply new knowledge gained from digital environments*" (Jones-Kavalier & Flannigan, 2006).

According to the *California ICT Digital Literacy Assessments and Curriculum Framework*, to be digitally literate involves: (i) to have access to information and know how to collect it in digital environments, (ii) to manage and organize information for future application, (iii) to evaluate, integrate, interpret and compare

information from multiple sources, (iv) to create and generate knowledge by adapting, applying and authoring information, (v) and to communicate information to various audiences and through use of an appropriate medium.

Being in the possess of the above mentioned competences, a person will be able to learn, work and interact effectively in the digital networked society, and also have the life-long ability to locate, evaluate, use and create information - Information Literacy.

2.2 e-Skills

In a digital society the demand for e-skills has been growing fast. These are "*crucial to boost competitiveness, productivity and innovation as well as the professionalism and unplayability of the workforce*" (McCormack, 2010).

There is more to e-skills than the basic ICT skills. Actually we can find three major types of e-skills: (i) ICT practitioner skills; (ii) ICT user skills; and (iii) ICT business skills.

ICT practitioner skills are those required to make research, design and develop, manage and maintain ICT systems. Most of the times to do this its required profound knowledge of ICT systems, hence one must have some level of academic formation.

ICT user skills is the most common of all. It relates to the capabilities that allow an individual to use the ICT systems and devices, giving the user the confident and critical use of ICT to support their work, leisure, learning and communication. ICT user skills also cover the use of common software tools. E-Business skills relate to the capabilities one needs to exploit opportunities provided by ICT, notably the Internet, to enhance the efficiency and effectiveness of an organization performance on different grounds; this type of skill includes also the capability to explore possibilities for new ways of conducting business processes and/or to establish new businesses.

According with Lenvin, so that students acquire the needed e-skills, some action is needed. Therefore "*Tertiary education is the right place to start, because it is the right context to think of generating not only the brains that Europe needs, but also the minds that it deserves*" (cited in McCormack, 2010).

Students with e-skills are capable of critical thinking, multitasking and collaborating in team work. As McCormack (2010) says, our society needs "*e-skilled people to provide the infrastructure and e-skilled people to use it. An e-skilled society is thus a precursor to a knowledge-based society*".

2.3 Soft skills & social skills

Besides hard skills students also need to acquire soft skills. Soft skills are personality traits, qualities and also social skills which every student possesses although in varying degrees - it is related with emotional intelligence. On the other hand social skills are the set of skills that allow students to communicate, relate and socialize with others. Socialization is a key factor for learning - and that means connecting, communicating, interacting and establishing relationships. According with Schultz (2008), the most important soft skills are related with:

- communication skills (proficiency in spoken and written language as well as to know what to say and how to say it in different occasions);
- critical and structured thinking along with analytical skills (problem solving capability);
- and creativity (ability of "*thinking out of the box*", often needed to find innovative approaches to problem solving).

In most Tertiary curricula students graduate with a high level of knowledge in a certain field - hard skills. But nowadays most companies also look for soft and social skills. Soft skills are what shapes our personality, enable social competences, for they complement the technical skills required to do a job, and so are equally as important as to have technical and scientific knowledge.

3 Social and collaborative environments in e-Learning

Since the appearance of email, in the 1990, ICT has evolved, today several formal learning management platforms are available to all, and with it the opportunity of accessing learning at a distance though online platforms, it has broken geographic and economic barriers for many, allowing a growth on lifelong learning as well. However even though these resources exist it does not mean that actual learning takes place for everyone. Certain skills are required to these learning experiences reach the high quality necessary, for the student as well as for the teacher, to this type of experience. In fact most say the teacher plays a decisive role in rising the platform to its full potential. As Thorpe (2005) says: "*the promise of the new media is just that – a promise or potential that can only be realised through skilled and creative design and teaching, on the part of both the local tutor and the course team. (...) lack of success in use of ICT may result as much from cultural differences in how people expect to learn, as from any feature of the new media themselves*".

In addition to e-learning formal platforms, today's digital and connected society, access to information and therefore to knowledge seems to be easier, as students have access to a wide variety of resources allowing formal, informal, non-formal and natural learning contexts, without leaving their homes. With the advent of Social and collaborative environments, students became more active and participative - they not only access to contents but also create and share them, becoming reactive.

Communication has evolved, the new media allows now live conferencing, video sharing, social networking, collaborative tools, allowing the student to create, work collaboratively and communicate in a more direct way with their peers and their teachers. Instead of merely searching for information, applications such as bookmarking, feeds, tweeter and pinboards, digital portfolios, etc., along with the possibility of creating your own personal webpage, today's Web gives students also the chance to create a PLE - A Personal Learning Environment. As Attwell (2007) mentioned, a PLE "*recognizes that learning is continuing and seeks to provide tools to support that learning*". In a PLE the individual is responsible for the management of their own learning environment and for the selection of tools and contexts where learning will take place.

But for better understand how social and collaborative web can contribute to enhance e-learning first it's necessary to understand their individual characteristics.

Web 2.0 (or social Web) can be defined as the collaborative web - with an emphasis to online collaboration and sharing among users. As O´Reilly (2005) said, Web 2.0 is the "*collective intelligence of everyone who uses the web to upload, download, add comments, provide feedback, add tags and actively engage in the creation of new knowledge*". Users are no longer only passive receptors of knowledge, they are active participators, by creating, sharing and commenting content contribute to mass collaboration or collective intelligence (Lévy, 1994) and for wisdom of crowds (Surowiecki, 2005). For this to happen some principles must be implied (Tapscott & Williams, 2008):

- Openness - by opening door to external ideas and agents, schools will outperform those who keep relying solely on their internal resources and capabilities;
- Peering - peer-to-peer collaboration, in some tasks, might be more productive and knowledge generator than traditional hierarchical management;
- Sharing - schools have to share part of their intellectual property so they can actively collaborate and generate new intellectual property plus improve their position in the global economy;
- Acting Globally - globalization is nowadays a key concept, schools must act globally and in collaboration to stay at the top.

Tertiary education can have a significant gain and take benefits by integrating Web 2.0 and 3.0 tools into their traditional structures and procedures. Being by nature, globalized and collaborative these tools can benefit students and teachers when including online tools as a complement to face-to-face strategy.

Web 3.0 (or semantic Web) is related with immersive 3D virtual worlds where users connect, communicate and interact in real-time through their avatars (Hayes, 2006). Users learn and share in an immersive way - learning in 1st person as opposed to 3rd. Some authors (Downes, 2010; Kop, 2010; Siemens, 2010; Wheeler, 2010) refer also to the eXtended Web (or Web x.0). Web x.0 seems to be directly connected with collective intelligence and the wisdom of crowds allowing anyone to learn at anytime and anyplace and in a personalized way. These new potentialities require the above mentioned skills, specifically related with (Wheeler, 2011): (i) social networking; (ii) privacy maintenance and identity management; (iii) creating, organising, reusing and repurposing content;(iv) filtering and selecting information; and (v) self broadcasting.

Therefore, and according with Morrison (2011), graduates must be able to: (i) Function in a global economy for job success in the 21st century; (ii) Work effectively with people from different cultural backgrounds; (iii) Work as a team member; (iv) Use information technology tools effectively; (v) Function creatively and innovatively; (vi) Access, analyze, process, and communicate information; and (vii) Engage in continuous, independent learning.

4 Conclusion

In a interconnected society access to information, content creation and knowledge sharing are at a distance of a click. Access to learning contexts is equally easy. e-Learning is a reality for a foreseeable future. Social Web and collaborative virtual environments are already making changes in the way students learn. In fact, "*socialization is a key factor for collaborative and social learning - and that means connecting, communicating, interacting and establishing relationships*" (Loureiro, Bettencourt & Santos, 2011). To know how, where, when and with whom to socialize is becoming a vital skill, as well as to know where, what and how to look for and share information. To do this students also have to be in the possess of digital skills, in order to face the networked society they live into. To be connected, collaborative, have digital literacy and critical thinking is mandatory . Almost everything we do nowadays requires computer mediation. Nevertheless, the ability for conflict resolution and negotiation, to communicate and express ideas, for creative problem solving and strategic thinking are also very important - interpersonal or soft skills (emotional intelligence). It is common to say that "*hard skills will get you an interview but you need soft skills to get and keep the job*" (Smith, 2011). At this moment, and due to society's demands, the sentence can be rephrased into: hard skills will get you an interview but you need e-skills and soft skills to get (and keep) the job. e-Learning, through the use of social web and collaborative virtual environments, can be used to develop and enhance these competences on students, especially at tertiary education. Many learning contexts of role-playing and simulation can be created for students to experience a wide range of situations and therefor apply them to real life contexts.

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