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# E-Learning Practices Revised: A Compiling Analysis on 38 Countries

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## 1. Introduction

*“New technology makes access possible to a vast range of digital resources. The environment makes some activities possible and constraints others but it does not change the fundamental processes of human learning”*

*(David Boud, 2001:15)*

At the dawn of the 21st century, with the pressure on governments of many developing countries to expand the use of Information Communication Technologies (ICTs) by international business and civic organizations like the World Bank, and as result to reduce the “digital divide”, Higher Education Institutions (HEIs) are confronted with the unrelenting difficulty to put into place learning technologies (aka e-learning) in spite of limited funding possibilities and risks posed to educational quality. One can observe the existence of a strong technological and economic push for HEIs to adopt e-learning strategies in many regions of the globe. This is driven, partly, by the requirement of industry for lifelong learning and the influence of a process of global change. Simultaneously, there is a localised attempt to raise awareness among HEIs of the pedagogical issues that underpin good teaching and learning practice, stimulated by the creation of accreditation programs and related topics. These significant drivers of change are often experienced by these HEIs as discordant if not harassing mandates.

Understanding the *momentum* behind the rising focus on educational technologies requires some understanding of the national governments’ view of globalization and the assumptions that have been made regarding the relationship between globalization, new technologies, knowledge and development. From a global perspective, now it is a time when authorities start realizing the need to develop effective strategies and anticipate the rising chorus of demands posed by a knowledge-based world, and to take steps which will ease the pressures for access while upholding the national interest of achieving a good quality higher education and responsible stewardship of local and global resources. HEIs in the current paradigm can be regarded as a knowledge server providing knowledge services - that is creating, preserving, transmitting or applying knowledge - in whatever forms is

needed by contemporary society (Duderstadt, 1999: 6). Furthermore, built upon government and market pressures, the correlation between education and quality of learning, the shift from teacher-centered to student-centered learning, the move towards lifelong, asynchronous, interactive and collaborative forms of learning, HEIs in developing countries need to be more ready than ever so as to enter this “age of knowledge” imbued by a “culture of learning”.

It can be argued that “globalization” has been consolidated by the extraordinary intrusion of new technologies, especially the Internet. Herein, e-Learning has developed greatly as the method of first choice for distance education and we are seeing a convergence between distance and conventional face-to-face education -due to moves by conventional education providers. Governments and corporations look at universities and colleges for innovative uses of new information technologies in teaching and administration, while also expecting that educational institutions will make their students sufficiently technology-literate to participate in a global economy. Policymakers, international organizations, higher education institutions and researchers in the field of education agree that ICT have the potential to stimulate international collaboration, to create flexible learning paths and to open the borders of the university. Most Western countries as well as other nations are increasingly embracing e-learning in education and training, both within their classrooms and in distance education. Arguably the most important consequence of new digital applications for higher education is that they make major innovation in education possible.

Given this background, the present chapter offers an overview of the current state of e-learning in HE from 38 country-based case-studies around the world (Demiray et al., 2010). Due to its relative extension, the original study was distributed in two volumes. The first volume consisted of the country cases of Armenia, Algeria, Belarus, Bulgaria, Egypt, Estonia, Finland, Greece, Jordan, Hungary, Iraq, Iran, Israel, Kazakhstan, Kyrgyzstan, Latvia, Lebanon and Lithuania, and in the second volume the case studies of Macedonia, Moldova, Morocco Norway, Oman, Palestine, Poland, Romania, Russia, Saudi Arabia, Serbia, Slovakia, Slovenia, Sweden, Syria, Tajikistan, Tunisia, Turkey, Ukraine, United Arab Emirates and Uzbekistan were reviewed making an extensive use of eLearning with their general education system and especially in their distance education applications and methods and media.

Herein, this contribution departs from the social dimension of education embedded in the so-called globalization process while providing statistics on the rates of technological penetration in the above-mentioned revised countries. Thereafter, our study continues towards the technological dimension of education considering not only e-learning and mobile or m-learning in isolation but also blended or mixed-mode learning, both in classroom environments and in distance education. To sum up, and based on these 38 case studies, this chapter outlines different clusters in e-learning development and it concludes with an indication about where we are heading on a worldwide basis.

## **2. Globalization and e-learning: *The social dimension of education in a knowledge-based society***

*“There is no greater context for educational change than that of globalization, nor no grander way of conceptualizing what educational change is about”*

*(Hargreaves, 1998: 322)*

In response to the need for education reform in most of the so-called “developing” countries, local governments have called for the reform of education to meet the needs of a twenty-first century which is affected by a globalisation process and knowledge-based requirements. As governments, supra-organisations and civil society devote increasing attention to ways in which globalization can be an efficient tool for more equitable international relations, we come naturally to the question of how HEIs can, with different levels of development, turn the information technology revolution into an instrument that alleviates the digital illiteracy while embracing what Castells (1996) defined as the “network society”.

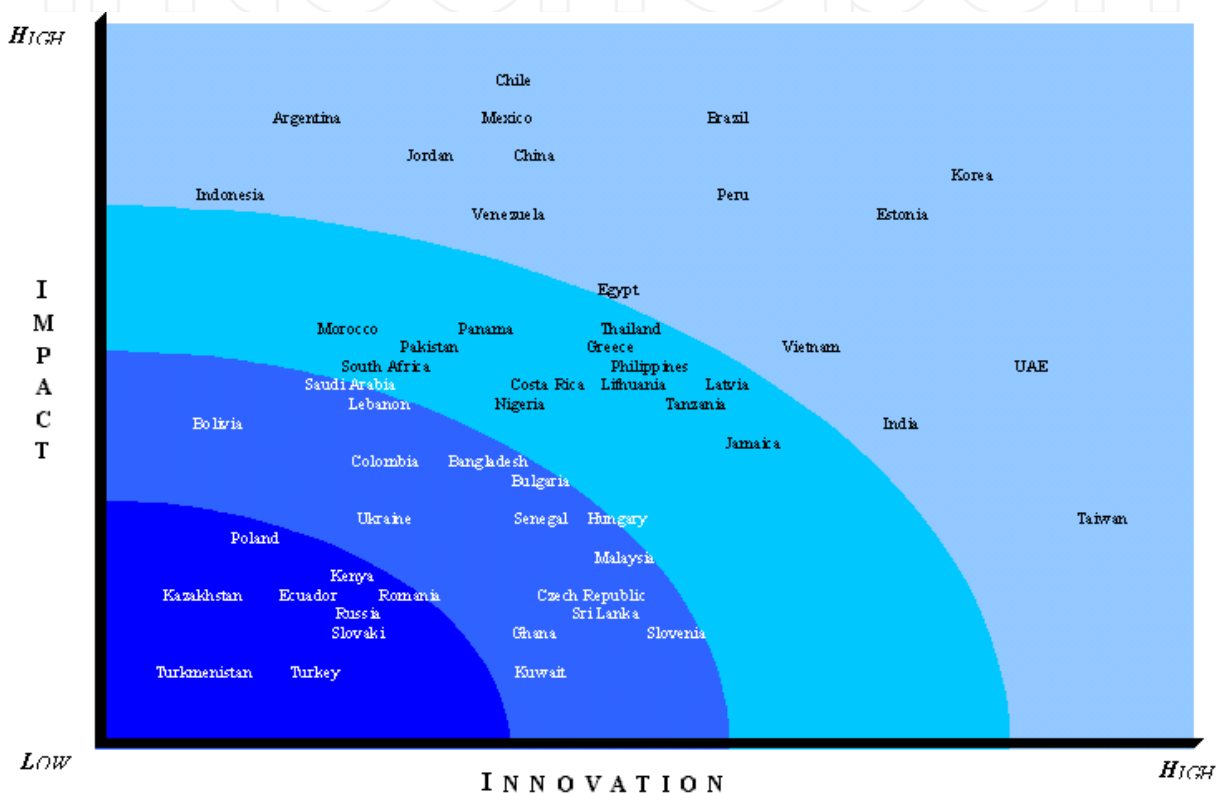
In most countries around the world, a new social and economic paradigm has restructured the traditional dimensions of time and space within which we live, work and interact. The industrial revolution of the 19<sup>th</sup> century and the scientific revolution of the 20<sup>th</sup> century have prepared the necessary conditions for the rise of what we now today as a knowledge-based economy and society. This concept is directly intertwined with the appearance of the information society. This is a metaphor that has been used as a reaction to the evolution of globalisation in the international context, enhanced by the development of ICTs and the social and technological changes produced by these new technologies. These changes have influenced social theorists in understanding contemporary times very much in terms of the information society, rather than postmodern (Lyotard, 1984) or risk societies (Beck, 1992).

Over the last decades, from policy-makers such as Al Gore to sociologists like Anthony Giddens or management scientists like Peter Drucker, the claim has been made that we are living in an age in which society is organised around information and knowledge (Sampler, 1998). It is argued that information has been the starting point of new industrial and production processes (Castells, 1996:60-65). The shift to the informational age has been sustained by accelerated technological innovations during the second half of the twentieth century, mostly in the areas of computing systems and telecommunications. Manufacturing organizations, for example, have adopted an information-based strategy that incorporates information technology (IT) to maintain and deliver information required for knowing what, when, and how to make economical products. Correspondingly, information-based processes, placed within the larger context of the “new economy”, are better understood as a development of the “informational age”, global in reach, sustained by social and financial networks, and enabled by ICTs. Information then is viewed as a resource to improve commercial and industrial competitiveness and productivity: using information within and between organisations to improve systems and processes, management techniques and foster innovation (Moore, 1998). Ultimately the objective has been to shift from labour-intensive to knowledge-intensive operations (Grantham & Tsekouras, 2004).

The exchange of knowledge and information between societies – primarily through trade, the displacement of persons and later the transmission of written information – has played a major role in the process of producing, with fewer inputs, more goods and services of better quality (Sagasti, 2001). It is generally accepted that advantages in technological competences lead to a better performance in innovation, international competitiveness and trade (Archibugi and Michie, 1998) and many pieces of evidence that attest the importance of technological change as a source of economic growth (Rosenberg, 1972; Freeman & Soete, 1997; Brian Arthur, 2009). The accent herein is on the emergence of the “new economy” and its effects in terms of growth, trade and investment across all the sectors making use of the new ICTs. While information has been considered an important source for the advancement of humanity and of individuals, the difference today is that information is now viewed as a

basic raw material and consumed at an enormous scale in socio-economic processes, and thus having important competitive value.

Already in 2001 McConnell International established a map based on the impact and innovation of all sustainable programs, reforms, and policies leading to an increase of connectivity, e-leadership, information security, human capital, and e-business climate. Their studies showed which countries were moving towards a knowledge-based society with actions that have the potential to make a real difference in their ability to participate in the digital economy. Today's country leaders in impact and innovation are the places where business opportunities are more likely to develop in the short-term.



Source: McConnell Intl, 2001

Fig. 1. Impact and innovation in developing countries.

With the growth of the World Wide Web (WWW) and the explosion of the Internet into popular culture, many lecturers and academic departments have started to exploit the potential of these technologies and sophisticated network infrastructures are provided to enhance teaching and learning. The Internet standards allow anyone to access web-based content – at any time, from any location. Increasing numbers of teaching staff are beginning to put their lecture notes and reading lists on the web for students to browse and they are starting to communicate with students via e-mail. Some HEIs facilitate the publication of course outlines on departmental websites. Many international donors are providing the tools – and financial means – to support university libraries that have web-interfaces for searching, checking availability and reserving books. These simple innovations are only the beginning and it is not surprising that sooner or later they will acquire state-of-the-art technology (e.g. conferencing software used in to create online discussion groups amongst

students) that enhances the learning process. Thus, the emergence of ICTs is coupled with innovation in education and new forms of teaching and learning in the sense that helps these countries to make the transition from teaching-centered to student-centered models of education. The role of technology in education is ingrained in literature (e.g. Masood, 2004; Roblyer, 2005; Musawi, 2011).

The philosophy of eLearning focuses on the individual learner although it recognizes that most learning is social. In the past training has organized itself much for the convenience and needs of instructors, institutions, and bureaucracies. Now eLearning is the convergence learning and networks, the Internet. New university systems are being developed to new global needs (Utsumi-Varis-Knight-Method-Pelton, 2001). The experience and critical function of the traditional universities is central in the efforts to create new eLearning environments. There are an increasing number of university networks of this kind all over the world, and the use of computers in the learning process, access to the Internet by students as a vehicle for self-directed learning, educational broadcasting and video-conferencing are all being stepped by (Dias, 1998: 370). Dias also reminds that higher education has to aim at quality and that internal and external evaluation methods should be more generally applied, thereby enabling it to be accountable to society. Higher education institutions are expected to train citizens capable of thinking clearly and critically, analyzing problems, making choices and shouldering their responsibilities. Thus the ethical role of universities is becoming every day more prominent.

Higher education cannot, however, be visualized any longer in purely national or regional terms. Future graduates have to be in a position to take up the complex challenges of globalization and rise to the opportunities of the international labor market. The equitable transfer of knowledge and the mobility of students, teachers and researchers, and with also the mobility of learning environments with the eLearning applications are crucial to the future of peace in the world. History shows that revolutionary changes do not take off without widespread adoption of common standards. For electricity, this was the standardization of voltage and plugs; for railways, the standard gauge of the tracks; and for the Internet, the common standards of TCP/IP, HTTP, and HTML. Common standards for metadata, learning objects, and learning architecture are mandatory for similar success of the knowledge economy. The work to create such standards for learning objects and related standards has been going on around the world for the past few years (<http://www.learnativity.com/standards/htm> retrieved on, 10 July 2009).

Learning technology standards are critical because they will help us to answer the following issue clusters:

- How will we mix and match content from multiple sources?
- How do we develop interchangeable content that can be reused, assembled, and disassembled quickly and easily?
- How do we ensure that we are not trapped by a vendor's proprietary learning technology?
- How do we ensure that our learning technology investments are wise and risk adverse?

Whether it is the creation of content libraries, or learning management systems, accredited standards will reduce the risk of making large investments in learning technologies because systems will be able to work together like never before. Accredited standards assure that the investment in time and intellectual capital can move from one system to the next.

Our study on 38 case studies contains massive and impressive evidence of the progress of global e-learning. The emerging of life-long learning and new professional and vocational

competencies as well as the globalization of society and the rise of a knowledge-based economy have raised expectations upon higher education institutions and related services to the society. Governments and corporations look to universities and colleges for innovative uses of new information technologies in teaching and administration, while also expecting that educational institutions will make their students sufficiently technology-literate to participate in a global economy. The vision of the new global learning emphasizes more than before the role of market forces in shaping the institution, the need to respond to users' needs, and the need to deliver knowledge continuously through distance learning and lifelong learning. However, the vast majority of universities are as well as the public and private organizations they work with are unprepared to reorganize themselves to address these new demands. Government support, programs of international organizations and initiatives of private companies are the channels through which e-learning is promoted in the country.

Countries	Government support	Programs of international organizations	Initiatives of private companies	Internet penetration rate in 2007 (%)
Algeria	+	+	+	9.5
Armenia	+	-	-	6.0
Belarus	+	-	-	29.0
Bulgaria	+	+	+	33.6
Egypt, Arab Rep.	+	+	-	14.8
Estonia	+	+	+	66.2
Finland	+	+	+	80.7
Greece	+	+	+	35.6
Hungary	+	+	+	53.2
Iran, Islamic Rep.	-	-	+	18.3
Iraq	+	+	-	0.9
Israel	+	+	+	46.5
Jordan	-	+	+	20.9
Kazakhstan	+	+	-	4.0
Kyrgyz Republic	+	+	+	14.3
Latvia	-	+	+	59.0
Lebanon	+	+	+	18.7
Lithuania	+	+	+	49.6
Macedonia	-	+	-	36.3
Moldova	-	-	-	20.5
Morocco	+	+	+	21.1
Norway	+	+	+	87.1
Oman	+	+	+	16.7
Palestine	+	+	+	14.8
Poland	+	+	+	48.6

Countries	Government support	Programs of international organizations	Initiatives of private companies	Internet penetration rate in 2007 (%)
Romania	+	+	+	28.2
Russian Federation	+	+	+	24.6
Saudi Arabia	+	-	+	26.3
Serbia	+	+	+	44.2
Slovak Republic	+	+	+	61.8
Slovenia	+	+	+	56.5
Sweden	+	+	+	82.1
Syrian Arab Republic	+	+	-	17.3
Tajikistan	+	+	-	7.2
Tunisia	+	+	-	16.8
Turkey	+	+	+	28.6
Ukraine	+	+	-	13.8
United Arab Emirates	+	+	+	51.8
Uzbekistan	+	+	-	7.5

Table 1. How and why ICT is working its way into learning in the various countries, its potential, and how its integration and broader use may be promoted.

A true revolution in e-learning requires high-speed access and high internet penetration rates to the World Wide Web, and the flexibility to offer a variety of media. The new services are profoundly changing the professional research and educational work when it is possible to retrieve and save articles and other materials, search all kinds of information from images and animation to texts, and receive e-mail alerts and have access to sources not conceivable before. The development of communication and information technologies makes it possible for distance teaching institutions to strengthen their position in the educational landscape. They also pave the way for lifelong education for all and at the same time are spreading the traditional universities, more and more of which use distance teaching methods in their activities, thereby making the distinction between the two types of institutions virtually meaningless. Therefore, the basic question for universities is – and has always been - what kind of people we want to have as our leaders-capable of taking responsibility of the future, environment and development.

The penetration rate on the graph underneath shows the potential of the country to further develop e-learning activities.

Other studies (Gong et al., 2007; Lee-Kelly and James, 2005) suggest that the increase in the internet penetration rate is also influenced by non-income factors such as culture and the attitude of the government towards new technologies.

Regarding the cultural and legal environment of the countries analysed figure 3 shows another three components of the overall readiness index. The category of Social and Cultural environment, with 15% weight in the overall score, is the average of educational level, internet literacy, innovation growth and entrepreneurship skills. In other words, it demonstrates the readiness level and ability of the local population to meet the requirement



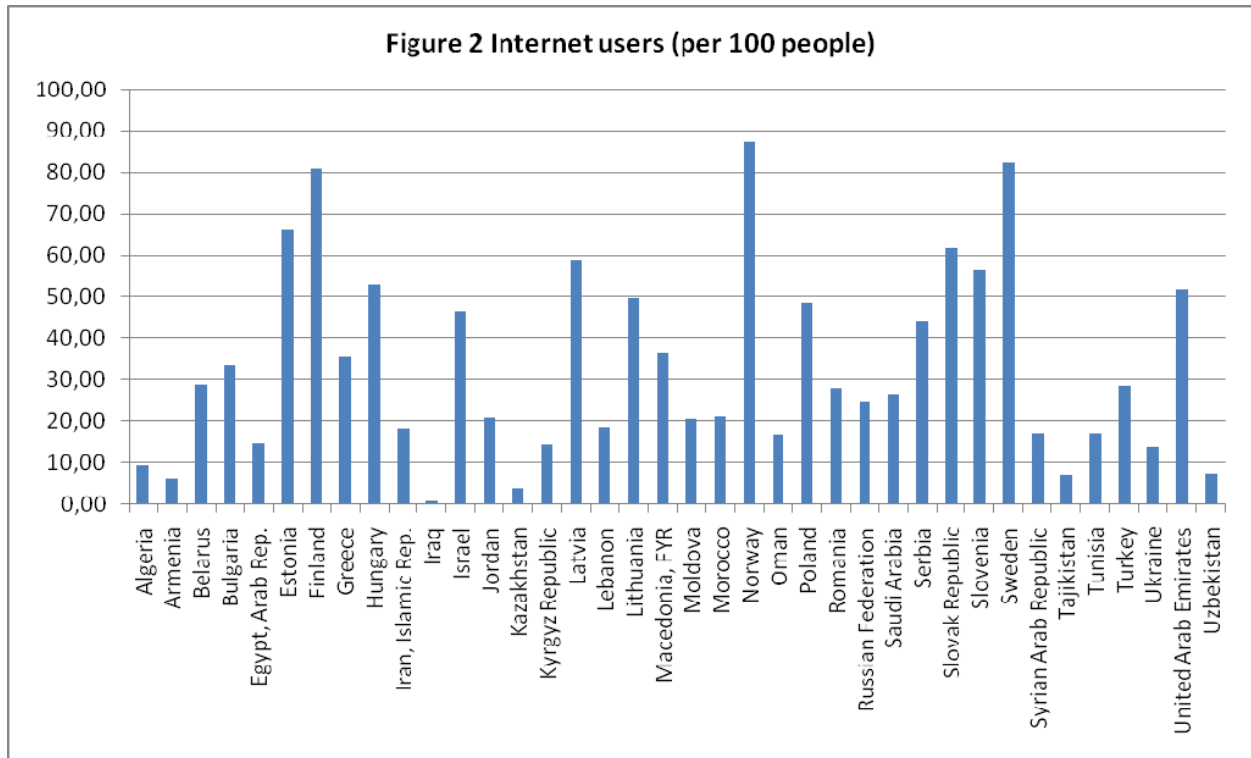


Fig. 2. Internet penetration and usage rates (internet users) among 38 countries in study of Demiray et al. Data available for 2007.

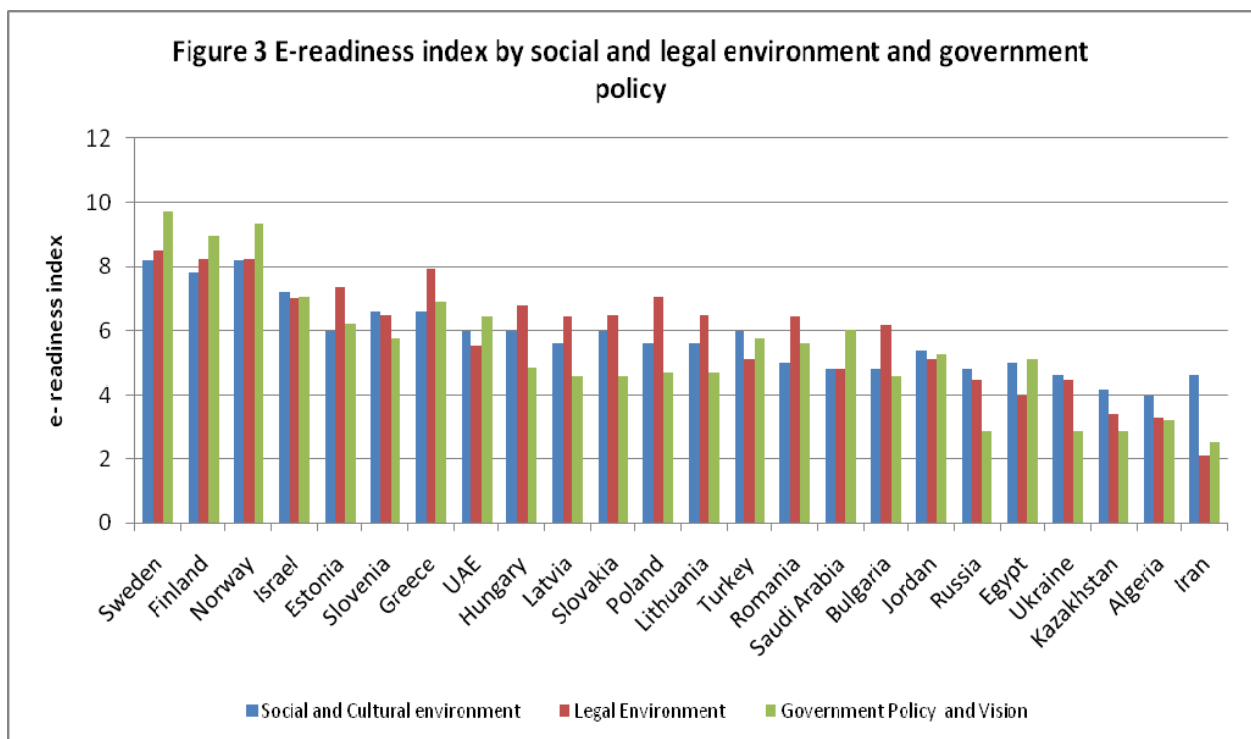


Fig. 3.

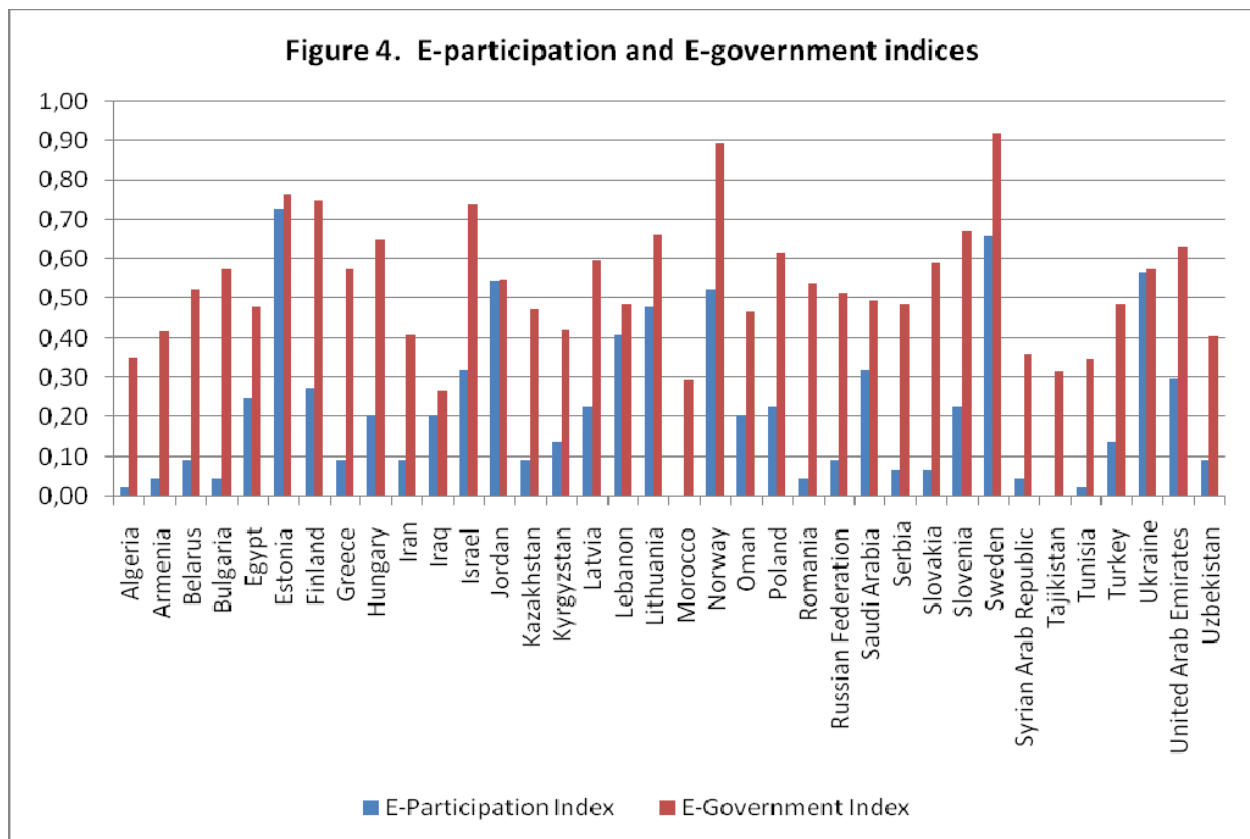
of to the new IT environment. Legal Environment category, which accounts for 10% of the overall score, shows the degree of censorship and the coverage for internet laws. Government Policy and Vision (15%) shows the level of commitment of the local governments to enhance the supply of e-government services.

Here the examples of Iran and Egypt can demonstrate different attitude to e-development in the countries with similar social and cultural background. Both countries have a similar level of IT literacy of the population given by social and cultural environment variable. While these countries are Islamic nations, their government visions of e-development differ significantly. For example, the government policy and legal environment in Egypt are more conducive for the development of e-technologies and e-learning than in Iran. The importance of the government policy regarding e-development can also be seen in the example of the front-runners such as Sweden, Finland and Norway. They all have significantly higher scores of the government policy and vision compared to other countries. Integrated efforts from leaders in academic, educational, and technological fields get the most out of institutional and national, regional or local government coordination and support. This could take forms of committees to share ideas, exchange experiences, set plans and strategies, and make decisions on using technology for academic and administrative purposes.

UNeGovDD (The United Nations E-Government Development Database) provides two fundamental measures of internet development across the nations. The first index is E-Participation index. It captures the willingness of citizens to use internet services to communicate with the public agencies and the sum of the state programs aimed at promoting the participation of people in the governance activities. High e-participation index implies that citizens are actively participating in the public and social areas through IT resources. In particular, e-participation assesses the level of access of the citizens to e-information, the development of e-consultation services and growth of the number of participants. The second is E-Government index. It is the weighted average of three indices: Human Capital index, Online Services index and Infrastructure index. Human capital index measures the overall literacy rate, which includes adult literacy rate and the combined primary, secondary and gross enrolment ratio. Online Services index shows the level of the online transactions and communications that people engage in. Infrastructure index comprises the ratios such as the internet penetration rate, the number of computers per 1000 persons, etc.

Figure 4 demonstrates that the availability of facilities do not always ensure the high participation ratio of citizens. For example, Estonia and Finland have similar e-government indices: 0.76 and 0.75 respectively (Table 8). However, the participation ratio in Estonia is 0.73 against only 0.27 in Finland. The participation of citizens is determined by their political activeness and the e-government facilities serve to increase the efficiency of participation.

It can be argued that the development of e-learning is related to a country's progression from survival values to those of self-actualisation – in terms of Maslow's hierarchy of needs. This parallels the shift from early-industrial society to the post-industrial society, and is clearly partly related to economic development. Nations need a critical level of economic and social development before they can afford to integrate new technologies in daily life, but it is also true that leaders need to be motivated to build the infrastructure needed for e-learning. The following table presents the most common constraints observed in the 38 countries of our study.



Source: UNeGovDD (2008)

Fig. 4.

Constraints on e-learning development	Countries
High costs	Algeria, Iran, Kazakhstan, Moldova, Morocco, Serbia, Slovak Republic, Tunisia, Ukraine
Weak state support, lack of investment, outdated technologies, an insignificant implication on the education system	Armenia, Belarus, Hungary, Iran, Kyrgyz Republic, Lebanon, Macedonia, Moldova, Serbia, Slovak Republic, Syrian Arab Republic, Tajikistan, Ukraine, Uzbekistan
Lack of adequate training for teachers	Algeria, Armenia, Bulgaria, Egypt, Hungary, Jordan, Kazakhstan, Kyrgyz Republic, Latvia, Lebanon, Macedonia, Moldova, Serbia, Syrian Arab Republic, Tajikistan, Tunisia, Uzbekistan
Strict state control over IT sector	Belarus, Syrian Arab Republic
Poor reputation of e-learning amongst prospective employers	All countries, except for Estonia, Finland, Israel, Lithuania, Norway, Poland, Romania, Sweden
Lack of the quality assurance in e-learning institutions	All countries, except for Estonia, Finland, Israel, Lithuania, Norway, Poland, Romania, Sweden
Lack of adequate government legislation	All countries, except for Estonia, Finland, Israel, Lithuania, Norway, Poland, Romania, Sweden

Table 2. Constrains on e-learning development.

Another factor to be considered in the development of e-learning in particular and ICT in general is related to intercultural competence. With the steep rise of multiculturalism, there is an increasing need for people to be able to deal effectively and competently with the diversity of race, culture and ethnicity. In general terms, one's ability to deal effectively and appropriately with diversity is referred to as intercultural competence – also defined as multicultural competence or cross-cultural competence. Traditionally speaking intercultural competence or competence in general is often divided into three main components:

- Knowledge: also known as cognitive factors
- Motivation: also known as attitude
- Skills: also known as competence in social relations and communication behavior

Becoming inter-culturally competent demands a wide range of culture-general knowledge from peoples' behavioral repertoires and people are also required to apply that knowledge to the culture that they interact with. People also have to be emotionally and skillfully responsive with various ranges of choices in order to act competently depending on the limitations of any given situation. They also have to have extensive intercultural interaction experiences and have the know-how of adjusting to different patterns of thinking and behaving. There is a process of internationalization of curriculum in universities that should lead to develop inter-cultural skills.

It is evident that the common global challenges are leading to an intensified regional and international cooperation also in the field of skills. Good example of this is the growing emphasis on skills and competencies in the common policy of the European Union. Another example is the intensified global cooperation within the framework of skills competitions. International skills competitions offer an excellent tool for the analysis of the common future needs of industry and societies all over the world, for the determination of the key skills needed in different trades, for cooperation between skills and working life and for improving the quality of for skills by transferring good practices and new innovations and by giving a possibility to international benchmarking.

There are other majors' threats for development of working-life skills that are not bound to any continent or historical tradition but globally equip students with skills that enable them to build up their own future and life in global and multicultural environment. Some educational institutes are already expanding out of the geographical orders to global actors on the field when utilizing e-learning and possibilities of ICT. Learning community and tutors may be distributed in various countries and cultures. The trend is also towards examinations and qualifications of skills that are internationally recognized.

### **3. Education and new technologies: Where 38 countries stand today**

Today's learning and education technology is developing with overwhelmingly speed. It is also changing the way faculty teaches and students learn. It becomes a critical complement to the educational experience, opening more opportunities for the learner than can be encompassed by physical campuses. Just recently eLearning technology applications are changing its structure by integrating new discussion technologies such as mLearning, IPTV (tLearning) and uLearning. Consequently, Yang & Yuen (2010) indicate that learning is dramatically and continuously influenced by information and communication technology (ICT). There is no doubt that ICTs keeps bringing excitement in to learning and communication. Multimedia on the internet, telecommunications, wireless applications,

mobile devices, social network software, Web 2.0 etc are radically redefining the way people obtain information and the way to learn (Yang & Yuen 2010, xxiv).

E-Learning has developed greatly as the method of first choice for distance education and we are seeing a convergence between distance and conventional face-to-face education -due to moves by conventional education providers. Conventional universities and schools throughout the world are pro-actively adopting distance learning technologies not only to reach the unreached providing wider openness and access but notably as augmentation for their current on-campus students. The use of computers in education can be classified into four types; -computer-assisted instruction (CAI), computer-managed instruction (CMI), computer-based multimedia (CBM), and computer-mediated communication (CMC). The fourth CMC involves computer-to-computer transactions including email, is sometimes referred to as online learning, and is commonly referred to as 'e-learning' (Kawachi, 2005; Kawachi 2008a).

Under e-learning, educational interactivity can be among the institution(s), tutor(s), and student(s), for both academic purposes as storage, delivery and retrieval of content, and non-academic purposes as administration and counseling support. Library resources support services are the most common CMI use of computers. Asynchronous emailing appears to be the most common CMC use. In highly developed centers of excellence such as in Hong Kong, Japan, or Korea, synchronous text-chat is common, and this occasionally becomes multimedia with the addition of digital graphics and even video transmissions along with plain text. In rural developing countries, computers have widely entered into classrooms in the past few years, though as recently as two years ago, for example in India, schools were despondent with their computers in the room and no educational interactivity taking place.

One reason why more educationally effective use cannot be made of these computers in the classrooms is the lack of regional infrastructure- such as no internet provision and inadequate or unreliable connectivity (regarding telephonic transmission rate or very low

Extent and nature of e-learning and blended learning provision	Countries
All educational institutions provide e-learning and blended learning facilities	Estonia, Finland, Lithuania, Norway, Oman, Poland, Romania, Saudi Arabia, Sweden
e-learning and blended learning are limited to a few universities (private or public)	Algeria, Armenia, Bulgaria, Egypt, Greece, Hungary, Iran, Iraq, Israel, Jordan, Kazakhstan, Kyrgyz Republic, Latvia, Lebanon, Macedonia, Moldova, Morocco, Palestine, Russia, Serbia, Slovak Republic, Slovenia, Syrian Arab Republic, Tunisia, Turkey, Ukraine, United Arab Emirates
There are no distance learning practices	Belarus, Tajikistan, Uzbekistan
Pure form of e-learning is available *	Estonia, Finland, Lithuania, Norway, Palestine, Poland, Romania, Saudi Arabia, Sweden

\*- there is no requirement to attend classes, but students may be required to take the final exam face to face.

Table 3. The extent and nature of e-learning and blended learning provision.

bandwidth) -preventing the use of multimedia and e-learning. These difficulties in connectivity and infrastructure- seen in many of the countries reviewed in this book - could be circumvented by the use of CD-hybrids.

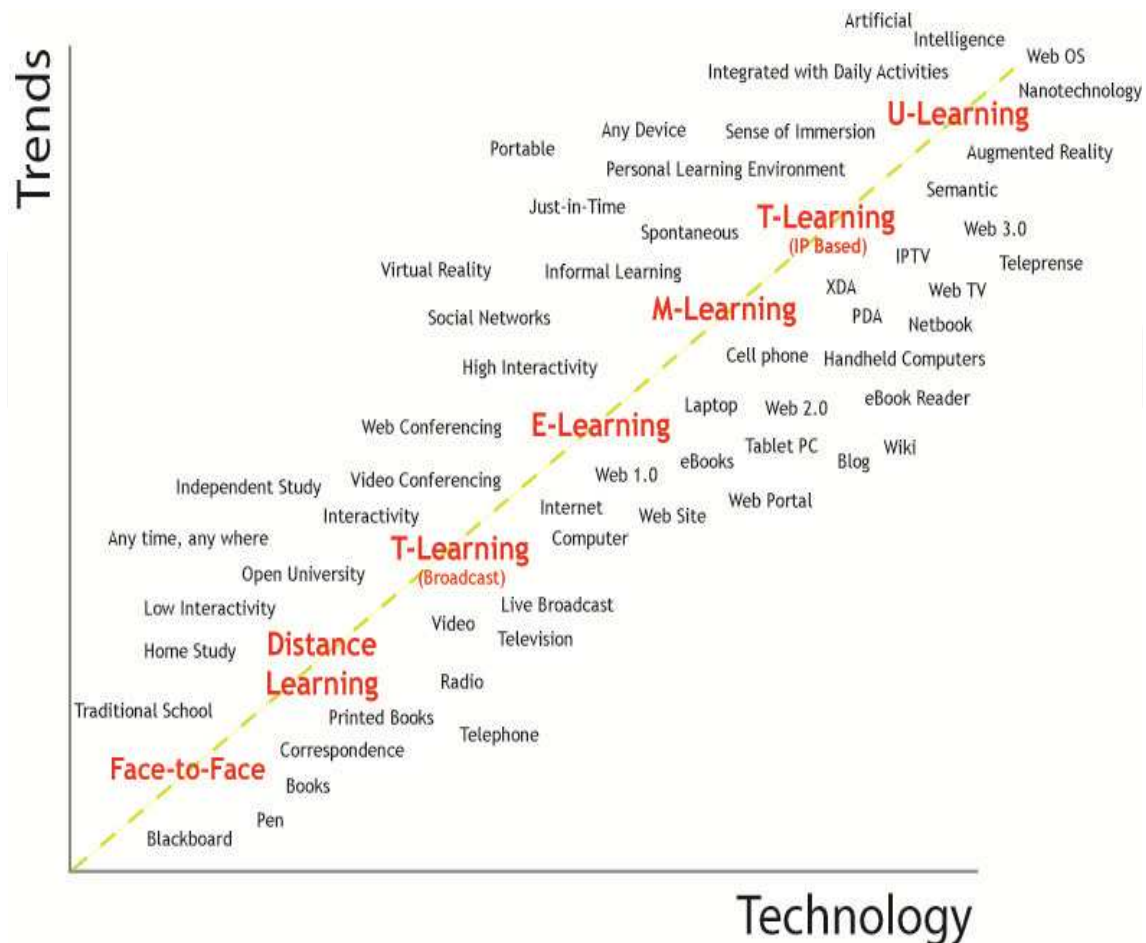
E-Learning is generally taken to mean learning that has utilized electronic means of information and knowledge management in a wide sense, and social constructivist learning through computer-mediated communications in a virtual space in a narrow sense. E-learning is a relatively new term, and derives from the development of alliances and consortia consisting of corporate businesses and education providers emerging at around 1995 (Jegade, 2001, p.75). This development has occurred through the internet and has brought internationalization through sharing of knowledge. It has also brought globalization and different cultures into juxtaposition, and into superimposition. Now conventional face-to-face institutions are opting to utilize e-learning and open learning values in the classroom.

The developed chart below, show us the latest trends of technology. Herein, education institutions are likely to adopt their education or material producing strategies according to newest technologies indicated in chart 1 underneath.

Policymakers, international organizations, higher education institutions and researchers in the field of education agree that ICTs have the potential to stimulate international collaboration, to create flexible learning paths and to open the borders of the university. Throughout the last decade, numerous initiatives have been set up to experiment with the establishment of ICT-enhanced activities, under various frameworks and to varying degrees of success. The higher education area is a very complex world with a diverse list of providers; these include traditional universities, distance education providers, public and private institutions, associations and consortia. (Schreurs, 2010:7). Through an extensive study of 38 countries all over the world (mainly from Europe, Russia and former soviet republics, Middle East and North Africa) we could perceive the different levels of development and key factors for the success or failure of elearning and other technologies for education.

On top of the scale we could find three Nordic countries – Finland, Norway and Sweden. Although Sir John Daniel (in Demiray 2010: lii) notes that ‘the vast majority of universities, as well as the public and private organizations they work with are unprepared to reorganize themselves to address these new demands’, this observation certainly does not apply to the three countries above mentioned. For the middle group of countries, in which we include Bulgaria, Egypt, Greece, Jordan, Kuwait, Latvia, Lebanon, Macedonia, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Ukraine and the United Arab Emirates, the example of Serbia will serve to illustrate a point for contention. If among the 38 countries studied, the three Nordic countries are the state-of-the-art for eLearning, Serbia must qualify as the member of the class making the most rapid progress. Indeed, Serbia’s situation points up the obvious correlation between eLearning development and economic growth. After a difficult period of turbulence following the break-up of former Yugoslavia and the Balkan wars of the 1990s, Serbia is now the fastest growing economy in its region and has the most rapid growth in Internet use (25% annually since 2000) in Europe.

Figure 5 demonstrate that there is an upward trend in the link between growth and internet penetration rates (both usage rates and fixed broadband). The statistical calculations show that as income increases by \$1000, the share of internet users increases nearly by 2 % and the share of fixed broadband connections by 1 %. Subsequently, the internet penetration rates are higher in the high-income countries. Norway, Finland, Sweden are the front-runners in



Learning Trends vs Technology © Özlem Ozan & Yasin Özarslan, 2009

Source: Yamamoto, G. T., Ozan, O & Demiray, U. (2010).

Fig. 5.

our sample, followed by the Central and Eastern European nations. However, income level is not the only determinant of the internet development. For example, the United Arab Emirates, while having income level similar to the countries in the Western Europe, nevertheless, has achieved a moderate success in the internet growth.

Not only Western countries but also non-Western nations are increasingly embracing e-learning in education and training, both within their classrooms and in distance education. E-transformation has been much slower in the education systems of the Eastern Europe, Nordic, Turkic, Middle East, Arab and North African countries. It is therefore considered timely to conduct an inquiry into the ways and extent of e-learning in these countries, the factors driving and constraining such developments, and how progress might be further encouraged. Searching the literature, it is possible to find reports, accounts, research findings and conference presentations on e-learning in these countries but many of these are in languages other than English.

As with the case of the Nordic countries, Serbia sees the development of eLearning in the perspectives of lifelong learning and the empowerment all citizens, although neither perspective seems as deeply embedded in national policies as in Finland. Serbia has, however, articulated policies for integrating ICT into research and development as well as into open and distance learning. On the other hand, it has not been as proactive as Finland

in creating new virtual networked initiatives, leaving it to institutions to expand eLearning within government policy. Unfortunately, satisfying the associated procedural requirements can be quite cumbersome, with the result that prestigious academic units such as the Faculty of Economics at the University of Belgrade appear to be more successful at navigating through their courses than newer start-ups. Even if a sound policy framework is in place, there is a need for real government support in making Serbia a knowledge society, contributing with different measures to a widespread pace of Internet penetration through all layers of society.

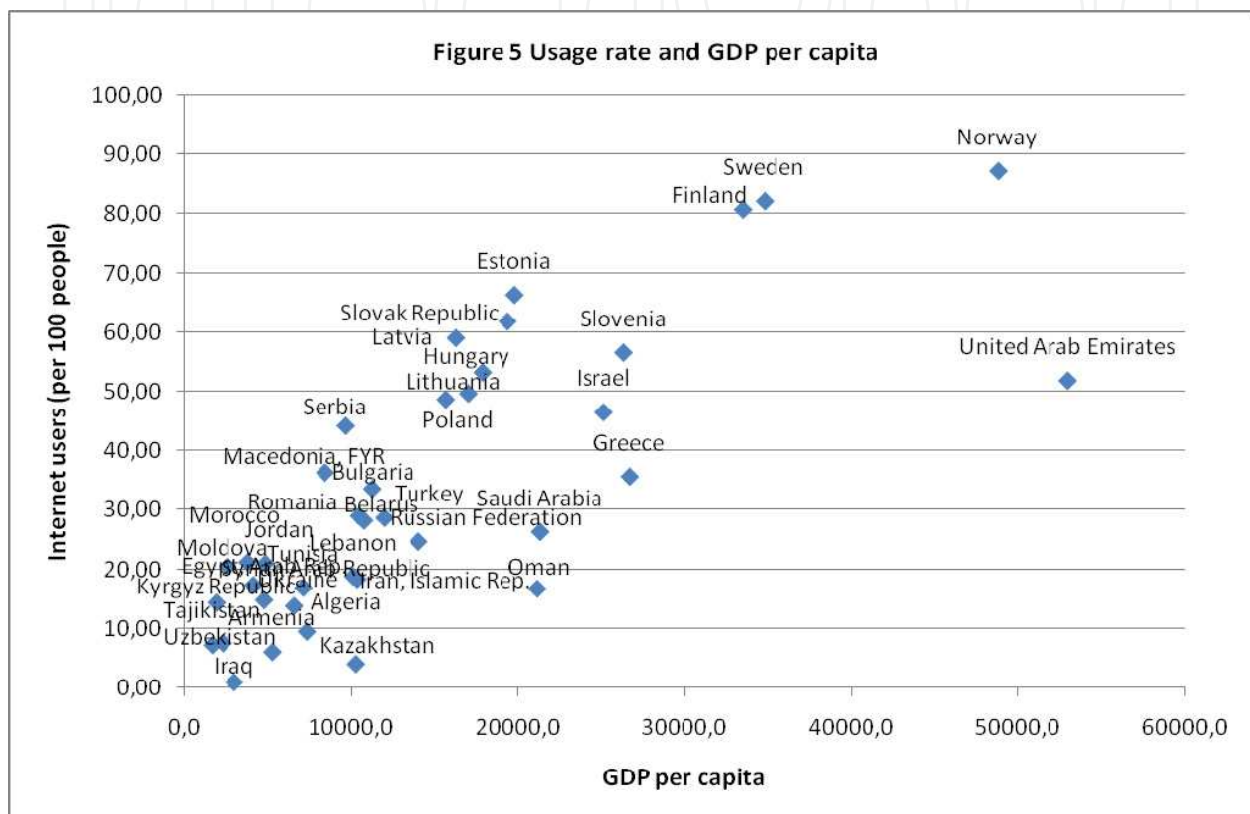


Fig. 6.

It is hard to be as optimistic about the last group of countries reviewed in our study in which we have placed Algeria, Belarus, Iran, Iraq, Kazakhstan, Kyrgyzstan, Moldova, Morocco, Oman, Saudi Arabia, Syria, Tajikistan, Tunisia and Uzbekistan. Taking Tajikistan as an extreme example of countries where the use of ICTs in general and of eLearning in particular, remains more in the domain of aspiration than reality at the present time. Although the government of Tajikistan has made various declarations of intention about ICTs in education, most of the measures to implement them have been *ad hoc*, 'chaotic and unsustainable'. Tajikistan suffers from a direct lack of capacity in all areas. It was the poorest of the republics of the former Soviet Union and had the least developed telecommunications infrastructure.

Since the five-year civil war that followed the break-up of the Soviet Union ended in 1998, economic growth has been rapid, but from a very low base. Individual telephone ownership is only 38 per 1,000 and not more than 1% of the populations are Internet users. The authors of the Tajikistan review suggest that eLearning will only develop with the help of



international donors, but even for that to happen the country will need major reforms. There is very little capacity in government, even if there were the will, to plan and implement these reforms and endemic corruption discourages local initiatives. The need for Distance education is understood, but so far this consists mostly of cross-border programmes from Russia that contribute nothing to local institutional capacity building.

The illustrations that were given of the state of eLearning in these three exemplar countries demonstrate two points. First, the state of development of education varies greatly even between neighboring countries. Second, looking at education systems through the development of eLearning, as our study does, is a powerful way of assessing their readiness for change and development - in short their fitness for purpose in a global 21st century.

#### **4. Future steps in e-learning practices in the World**

Hitherto, our study on 38 countries examined how and why ICT is working its way into learning in the various countries, its potential, and how its integration and broader use may be promoted. It took into account factors that could constraint e-learning development, government initiatives that promote ICT literacy and the use of e-learning in education and training, extent and nature of e-learning and blended learning provision, some of the cultural and pedagogical implications of e-learning and policy-making and organizational dimensions of e-learning.

A useful instrument to analyse the level of technological development of every country is the e-readiness index which was originated by the intent to provide a unified framework to evaluate breadth and depth of the so-called 'digital divide' between more and less developed or developing countries. Chart 2 shows that Western European region has the advanced scores across all e-readiness indexes. Central and Eastern Europe has a better performance than North Africa and Middle East and Central Asia. North Africa and Middle East have more progress with the online services, participation and infrastructure indices compared to the countries of the Central Asia. On the other hand, the Central Asia region has a higher score of human capital, which measures the educational background but a very low score in terms of infrastructure, e-government and e-participation.

Many countries including most reviewed generally hold onto an apprentice model and experiential learning through a cooperative process. Even with e-learning technology, the apprentice model is still employed. Internationalization through e-learning has brought the two processes of collaborative learning and cooperative learning into the same forum. In many of these countries, the social economics has meant a student who is busy e-learning is more isolated from his or her surrounding culture, than a student for example in London where the surroundings may be all high technology, conducive, motivating, encouraging and accepting of a person engaging e-learning. In rural developing countries, it is easy to imagine that the student is not only physically alone but psychologically and emotionally as well -without social infrastructure supporting e-learning. Thus, computers and multimedia are not simply instruments for the student but provide a total environment for learning.

E-Learning offers many opportunities for individuals and institutions all over the world. The reader is referred to Kawachi (2005) for comparative review of e-learning in Bangladesh, (mainland) China, Hong Kong (China), India, Indonesia, Iran, Japan, Korea, Malaysia, Pakistan, the Philippines, Singapore, Sri Lanka, Thailand, and Vietnam. Individuals can access to education they need almost anytime and anywhere they are ready to. Institutions are able to provide more cost-effective training to their employees. E-learning

context is very important. It is common to find educators who perceive e-learning as internet-only education that encourages a static and content-focused series of text pages on screen. Others envisage the shallow and random online messages that are typical of a social real-time chat session, and wonder how that type of communication could add any value to academic discourse. Some may have experienced e-learning done poorly, and extrapolate their experience into a negative impression of all e-learning.

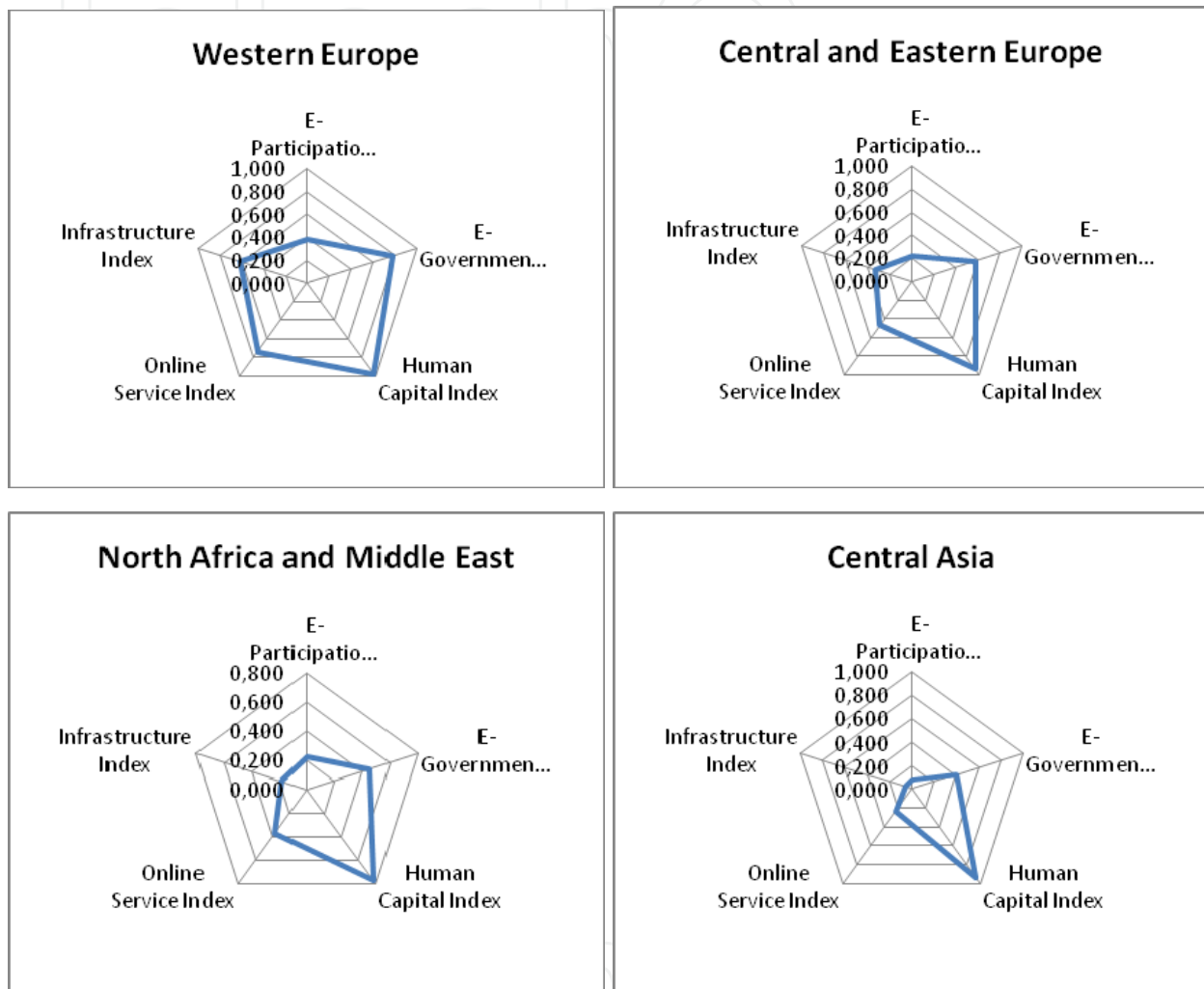


Chart 2. Regional average of the participation index, e-government index and its components.

The invention of the World Wide Web in the early 1990s introduced the ability Access resources from anywhere in the world through Universal Resource Locators (URLs). But the Web was a step backwards in terms of animation and interactivity because of the slowness of computers, modems and the network at the time it was introduced. It is only now that the capabilities of networked computers are catching up to the level necessary to produce the quality of e-learning that was possible using CD-ROMs. (Woodill, 2007, p. 9)

The new learning landscape is a multichannel learning environment that can be seen as a “complex adaptive system”. For the most part, this environment is “self organizing” and because of that it is difficult to exactly predict how it is all going to turn out in the next

decades. But, there is no question that a major shift is taking place -a turn from instructor centric curricula towards learner centric searching for relevant resources of learning as need. The shift is from instructor controlled classroom learning and instructor controlled e-learning to a mix of approaches that includes instructor control when appropriate (for specific certifications, for example) along with many different channels of resources and requirements from which learners can choose and explore. Emerging e-learning will not be simply mixed with “face-to-face” learning to form blended learning. Rather, all learning will be multichannel learning. The “e” in e-learning will gradually disappear, as electronic support for learning by any means becomes invisible and taken-for-granted (Norman, 1999, quoted from Woodill, p. 16).

As general conclusion, e-learning continues to evolve with new delivery methods -to PDA or mobile phone (called mLearning) and via blogs, wikis, podcasts, and easier-to-use tools both in developed and the so-called developing countries to a higher or lesser extent. There is also a trend seen in the transition from training to learning that leverages the power of the Internet to go beyond eLearning through knowledge management, competency management, and performance support and to HR processes like performance management, talent management, succession planning, and hiring. Web 2.0 (and e-learning 2.0) technologies are driven by collaboration. This is the next phase of eLearning in the world (Clarey, 2007: 29).

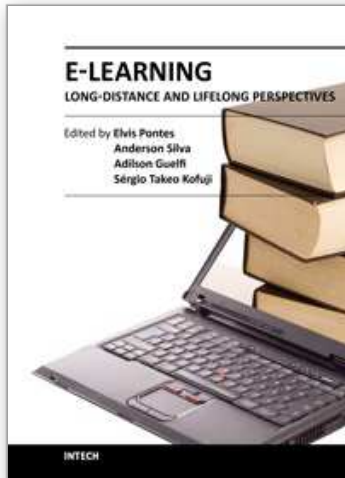
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## **E-Learning - Long-Distance and Lifelong Perspectives**

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E-learning enables students to pace their studies according to their needs, making learning accessible to (1) people who do not have enough free time for studying - they can program their lessons according to their available schedule; (2) those far from a school (geographical issues), or the ones unable to attend classes due to some physical or medical restriction. Therefore, cultural, geographical and physical obstructions can be removed, making it possible for students to select their path and time for the learning course. Students are then allowed to choose the main objectives they are suitable to fulfill. This book regards E-learning challenges, opening a way to understand and discuss questions related to long-distance and lifelong learning, E-learning for people with special needs and, lastly, presenting case study about the relationship between the quality of interaction and the quality of learning achieved in experiences of E-learning formation.

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