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Creating an Online Dimension for University Rankings

PROJECT DELIVERABLE: IO1.A1

The State of Art of Online Education - Report

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Universitat Oberta de Catalunya
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Istituto Tecnologie Didattiche

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INTRODUCTION

I. Towards a definition of online higher education

From the mid-1990s the University system has undergone through a huge change in its format, faculty and structure led by the rising demand for higher education, globalization and mobility and the creation of the knowledge society (Siemens, Gasevic & Dawson, 2015). The recent advancements in Information Technology have been leading to a diversification and radical transformation of the education offer provision and its ways of delivery. The rising of **e-learning** marked the turning point in the development of new pathways in the education industry and higher education institutions.

The Open University (UK) offered the first fully online course in 1981, marking the beginning of a new model of education (Harasim, 2000). Later, in 1994, the Open University of Catalonia (UOC) was created as the first entirely online university. However, researchers and education experts face difficulties and disagree on the conceptualization and definition of terms like *distance learning, e-learning*, *blended* or *hybrid learning* as they are quite often interchanged. Hence, it is important to clarify and explain the different terms and concepts involved: **distance education, blended learning, open education, e-learning** and **online education**.

Distance education started in the 18th century in the US and UK and undergone towards an important growth during the XIX century in Europe proposing itself as the first alternative to traditional education (Romeu, 2011). It is a *method of education* (Bates, 2005) that entails a student-professor non-contiguous communication (Holmberg, 1995) and in which teaching and learning activities are separated by time and space and are done throughout new technologies. The Open University (OOUK) in 1969 and of the Spanish University of Distance Education (UNED) in 1972 represent the turning point of this new type of education (OECD Report, 2015).
Since then, distance education has been evolving taking track of the innovation trends and new technologies. From telephone, radio and television (first generation), passing by audiocassettes and videocassettes (second generation) to computers and CD-ROMs (third generation). Finally, the internet revolution with the high-bandwidth marked the beginning of the fourth and current generation dominated by information technologies and digital tools.

Blended learning refers to the practices that combine (or blend) traditional face-to-face classroom instruction with distance learning and IT tools and must be considered as a way to do distance education (Siemens, Gasevic & Dawson, 2015).

The concept of **e-learning** refers to the use of the information and communications technology (ICT) to enhance and/or support learning in tertiary education. It also refers to both wholly online provision and campus-based or other distance-based provision supplemented with ICT in some way (OECD Report, 2005). E-learning is described as a form of distance learning, making use of particular IT tools and platforms (Tait, 2001), that have been transforming education from instructor-centred to student-centred (Siemens, Gasevic & Dawson, 2015). Sangrà et al. (2011) propose an

inclusive definition of the concept of e-learning, fully accepted by the scientific community, and intended as a way of teaching and learning that can represent the whole education system in which it is applied, using the media and technological tools to ease the access, evolution and improve the quality of education and training.

Online learning or online education is described as a form[1] or the newer version of distance education where a particular medium technology, mediates the learning process, increasing connectivity, flexibility and ability to promote interaction (Moore, Dickinson-Deane & Gaylen, 2011). Teaching is delivered fully online, completely using the Internet, and students and instructors are not required to be available at the same time and place (Siemens, Gasevic & Dawson, 2015), even if a student might not be studying entirely online. Garrett (2013) describes it as Internet-based postsecondary teaching and learning, where the student and teacher, geographically separated, are connected online. Whilst, Siemens (2015) defines online learning as a form of distance education where technology mediates the learning process, teaching is delivered completely using the Internet, and students and instructors are not required to be available at the same time and place. It does not include more traditional distance education instruction methods, such as print-based correspondence education, broadcast television or radio, videoconferencing in its traditional form, videocassettes/DVDs and stand-alone educational software programs.

On the other hand, in the last decade, there has been an increasing interest in open education, intended as a goal or *education policy* (Bates, 2005) driven by the incorporation of ICT and the creation of Open Educational Resources (OER) (OECD Report, 2015). Indeed, universities opening up content and/or data removing learning barriers have been one of the most important developments in higher education Castaño Muñoz et al., (2016). At the same time, following this movement, more and more universities are actively engaging in the modernization process of education and training systems (Gaebel, Kupriyanova, Morais & Colucci, 2014).

In this context, it becomes necessary to mention the growth of Massive Open Online Courses (MOOCs). In line with what stated by Bates (2015) in 2008, the University of Manitoba in Canada offered the first MOOC with just over 2,000 enrolments, which linked webinar presentations and/or blog posts by experts to participants' blogs and tweets. The courses were open to anyone and had no formal assessment. In 2012, two Stanford University professors launched a lecture-capture based on MOOCs on artificial intelligence, attracting more than 100,000 students. From that moment, MOOCs have expanded rapidly around the world.
Although the format of MOOCs is generally diverse from a university to another, they have the following common characteristics:

- They are open to anyone to enrol and simple enrolment (just an e-mail address)
- They involve very large numbers (from 1,000 to 100,000)
- They are free access to video-recorded lectures, often from the most elite universities in the USA (Harvard, MIT and Stanford University in particular).

[1] http://www.termcat.cat/ca/Diccionaris_En_Linia/226/Fitxes/

- They provide computer-based assessment, usually using multiple-choice questions and immediate feedback, combined sometimes with peer assessment
- Not a wide range of commitment from learners: up to 50% never do more than register, 25% never take more than the first assignment, and less than 10% per cent complete the final assessment.

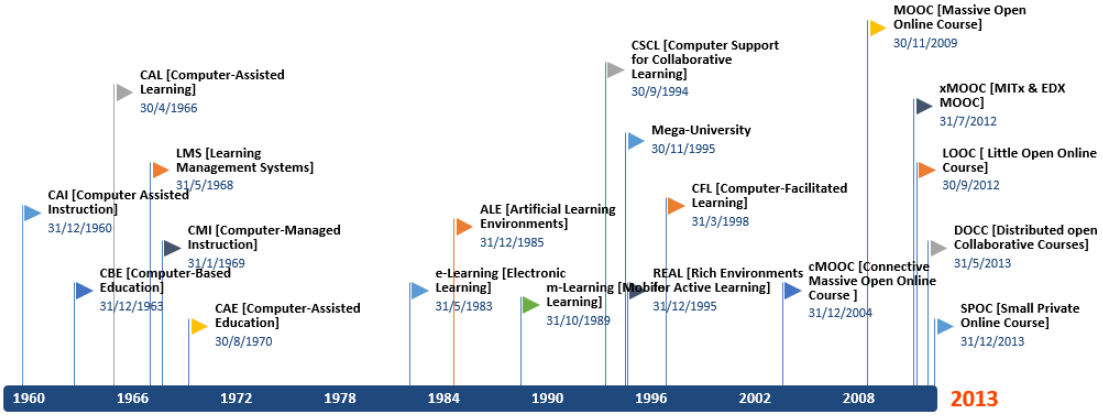


Fig. 1. Timeline of E-learning related concepts (Aparicio, 2016).

As on can see, there are a lot of different names to lot of similar but different models of education provision. It is not the aim of this project to do an exhaustive definition of each of them, especially because in the meantime probably other names will appear. But it is true that we are going to focus just on one of them. This is the choice of the project.

Although in this document we have respected the names that the different authors used when they wrote their papers, it is the main aim of this project to focus on online education institutions providing sets of accredited programmes that lead to an official recognition in their countries. We do not focus on specific programs of courses, but in a general provision of online education. In addition, for the purpose of the project we are distinguishing between online learning and online education. Do not find any contradiction. Similarly what happened in the discussion between distance teaching and distance learning some years ago (Keegan, 1986), we decide to use the term **online education** as a necessary synthesis between online learning and online teaching.

II. Online education expansion and main challenges

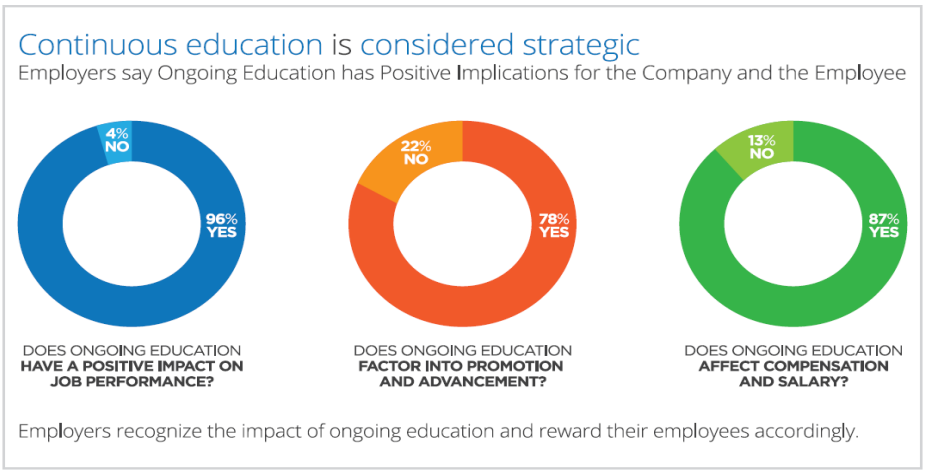
Online education has been globally growing driven by the emergence of new technologies, widespread adoption of Internet and increasing demand for skilled work force for a digital economy. Since the 1990s, international organizations like the World Bank, UNESCO and the European Commission have remarked the role of online and distance education to extend educational opportunities for disadvantaged population (Kumar et al., 2017). This new education delivery under the umbrella of distance education model led to the creation of institutions dedicated to

online teaching and meantime, transformed structurally the traditional higher education model and strategy.

The ICT in higher education developed a different kind of teaching and learning characterised mainly by flexibility in time and space and widen access to quality higher education for all those who due to factors like unemployment, family commitment, economic income, distance and time could not take part to the learning process.

The global development of online education can be attributed to the following factors:

- **The urgency to join the knowledge society**. As societies started to develop the knowledge-based information economy model, e-learning quickly became a key factor of both social development and economic competitiveness (Kahiigi et al., 2008). Furthermore, as online education is one of the aspect of the lifelong learning trend, which now is seen as a fundamental step towards a new career field or a job transition or promotion (Best Colleges Report, 2017).
- **The opportunities offered by information technologies to meet students' needs.** ICT become the central pillar of higher education, allowing more people to access at lower costs; widening students' chances to achieve digital literacy and providing a better organization and management of Higher Education Institutions (OECD Report, 2015).
- **Expected lower costs.** As reported in the BestColleges report (2017), costs are still the main concern for students. Hence, the lower costs of online education are a good choice when dealing with funding sources and financial aid. However, other specialists warn about the fact that quality online education is not sure to be cheaper (Hülsmann, 2004; Bates & Sangrà, 2011).
- **The growing demand for skilled people in the labour market.** Lifelong learning is fundamental to take track of all the rapid changes of the labour market. In order to fill the gaps between the current demand and the future working positions strictly related to ICT, online learning and teaching play a key role as reported by the University of Oxford Report (2015). Moreover, according to the DOCEBO Report (2014) results e-learning is a way to achieve quality results in terms of workforce productivity and business strategy as showed by the perceptions in the graphics below:



Source: Lifelong Education and Labor Market Needs, An EvoLLLution Research Report, 2012

Fig. 2 Lifelong Education and Labour Market Needs (An EvoLLLution Research Report, 2012)

- **Collaborative research opportunities.** Digital technologies and open access give on the one hand, researches better chances and tools to deal with data collection, analysis and dissemination; on the other hand, students can take advantage of a wider range of education resources that are online, open and shareable, through MOOCs or online platforms like Moodle.

Hence, in general terms, we can notice that online education is a global trend. However, due to the specificities of every country and geographic area in terms of access to technology, policies development and average level of population education, the e-learning evolution and impact can be differently measured and analysed. For instance, the following chapters will seek to provide a more in depth overview about the phenomenon in all the regions, highlighting the main drivers, challenges, barriers and best practices.

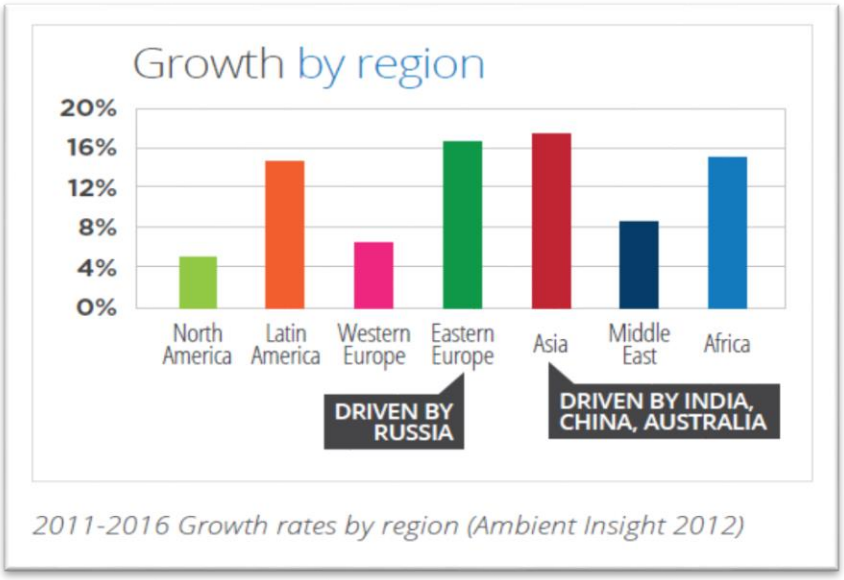


Fig.3 2011-2012 Growth rates by region (Ambien Insight, 2012)

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THE STATE OF ART OF ONLINE EDUCATION

I. Europe

a. Online Education in the region

During the last decade, the spread of the Internet and ICT has drastically transformed not only the education system but also the way people communicate and learn, industries operate and governments act towards their citizens (EC Report Better e-learning for Europe, 2001). At the beginning of the years 2000s the European Union, due to its deep interest in widening participation and access, started to promote distance education and the use of ICT (IDEAL Report 3, 2015). E-learning has been playing a key role in pursuing not only the EU's policy objectives it has been demonstrating the willingness of the European countries to be in line with the global trends in pursuing the Sustainable Development Goals. This made the EU countries the most competitive and dynamic knowledge-driven economy in the world (Cedefop Report, 2001). In fact, as reported in the IBIS Report (2013) of the $4.1tn trillion spent on education and training, approximately 25% is in Europe, which currently is 2nd largest market after North America.

The strong interest towards e-learning and ICT led the European Union to re-orientate indeed its government policy and launch the e-learning initiative which supported the spread of e-learning and sought to incorporate it in the European employment strategy (Cedefop Report, 2001). Meanwhile, the eEurope 2002 and eEurope 2005 Action Plans adopted by European Councils in Stockholm and Barcelona respectively in 2001 and 2002 have remarked the importance and implementation of ICT to create the European knowledge society (EC Report Better e-learning for Europe, 2001).

To fulfil this goal, the EU Member States committed to support a full Internet coverage and multimedia resources usage in all their education and training institutions providing a complete training on ICT and digital literacy to teaching staff. Currently, the results of the European University Association Survey show that basically all the higher education institutions (slightly more than half, 53%) in Europe started to incorporate e-learning in their conventional teaching or launch online degree courses (Gaebel, Kupriyanova, Morais & Colucci, 2014).

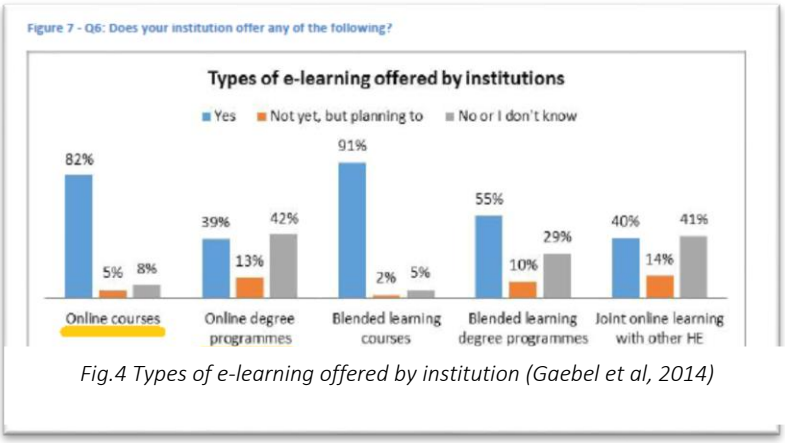

Fig.4 Types of e-learning offered by institution (Gaebel et al, 2014)

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Figure 6 – Q5: Does your institution use e-learning?

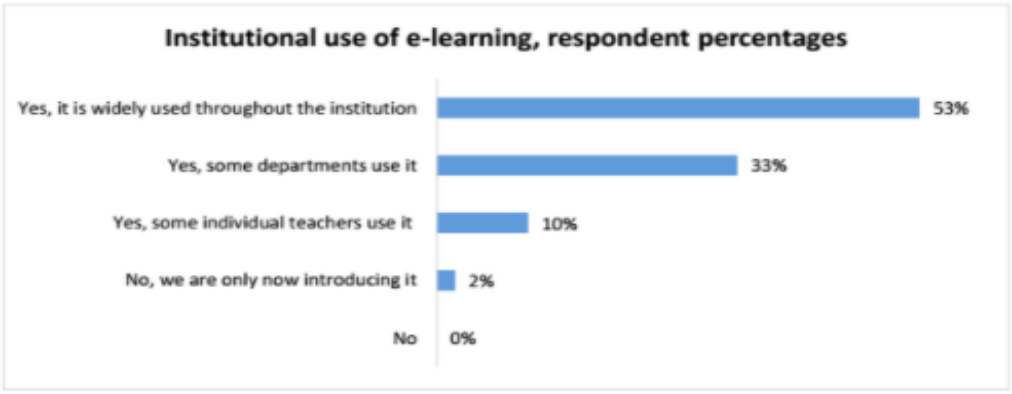


Fig.5 Institutional use of e-learning, respondent percentages (Gaebel et al, 2014)

In fact, as showed in the graphic, all higher education institutions of the sample have started to embrace e-learning and that they are re planning to expand the online programme provision (Gaebel, Kupriyanova, Morais & Colucci, 2014).

In Europe, online teaching and learning is also a growing phenomenon (50%). However, the traditional face-to-face education is still the preferred model of European employees (87%). Whilst, blended education, which combines face-to-face and digital teaching, is also increasing notably (46% currently versus 36% en 2015), as reported in *Beyond Knowledge*[2].

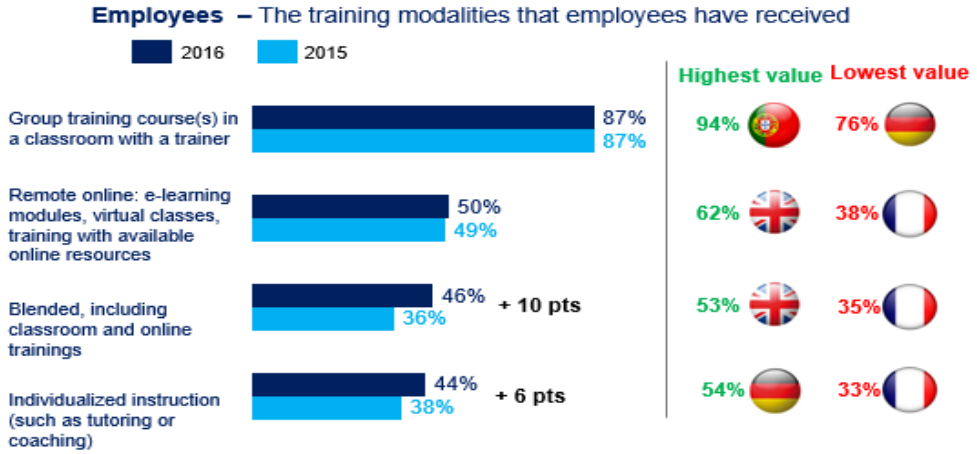


Fig.6 . The training modalities that employees have received (Barómetro del Observatorio Cegos).

In addition, the current trend involves traditional face-to-face education decrease in favour of e-learning, which is, according to the Report Training for Employment 2014-2016 Key findings (Fundación Tripartita para el Empleo), the second most used methodology in business training

[2] Barómetro del Observatorio Cegos, "Formación y desarrollo en Europa", 2016 available at: https://www.cegos.es/soluciones/estudios/614-barometro-del-observatorio-cegos-2016

(43,5%). In fact, European traditional universities have taken major steps to adapt their pedagogic model and institutional strategy to the ICT, improving the use of facilities to better integrate them (Barajas & Gannaway, 2007).

b. Drivers of development

In Europe, it is possible to identify several emerging factors responsible for the development of distance education and, particularly, of e-learning.

- Supporting traditional higher education institutions to implement strategies of distance education to complement their face-to-face provision.
- The need to innovate the training and education system through the promotion of the use of ICT in education, which allows lower costs, higher flexibility and wider access.
- The increasing acknowledgement of the quality of the degrees awarded by distance education institutions and online/virtual universities.
- The international competition challenges European countries to keep improving and assuring quality.
- The acknowledgement that e-learning as new mode of teaching and learning can reach the most remote regions, allowing the most excluded social groups to have access to quality programs (Sangrà, 2001).

As stated by Sursock (2015) in her report Trends in Europe, it is clear that e-learning will offer greater flexibility and learning opportunities to students and will improve classroom effectiveness. Other objectives, which focused more narrowly on specific target groups, such as international and adult students, received a very low value because respondents could select only one objective (Sursock, 2015). These results may indicate that there is still scope for developments that would enable institutions to reach a greater diversity of learners in the future.

***Figure 18:** What is your institution's most important objective regarding the development of e-learning in the future? (Q44)*

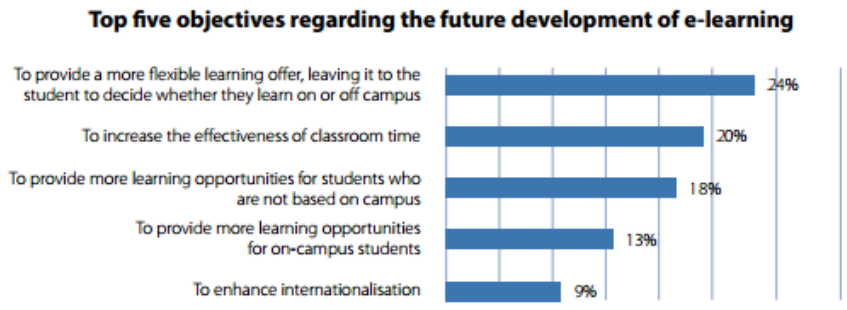


Fig.7 Top five objectives regarding the future development of e-learning (Sursock, 2015)

c. Barriers to Online Education adoption

Europe is

currently the second biggest implementer of online learning in the world. However, there are some critical factors avoiding a fully harmonic implementation in the region.

- **Heterogeneity in culture and language**: Europe is composed by countries with different languages and educational culture. Online programs, in order to reach the highest number of students are taught in English. In a region where language does make the difference and the gap between those countries with English as a native language and those with English as second or third language, the rate of implementation of e-learning is affected.
- **Different education systems**, which reflect the different socio-economic characteristics of the education system, the national features in terms of policies and structure. In fact, as reported by the IDEAL Report (2015) countries like Finland, Germany, Hungary and UK, even though they show some specificities[3], still do not have a specific national policy on distance education in higher education implemented.
- **Classification of organizations and providers** involved in higher education in general varies across the region (Cedefop Report, 2001).
- **Shortage of quantitative information and analysis** on the impact and growth rate of e-learning, despite its central importance in government policy and significant interest in the scale of the actual and potential market. This is mainly because studies and research carried out on e-learning are done at the national level focusing on the specific patterns of the country. This, so far has been one of the main barriers to have a comprehensive perspective on the e-learning in Europe.

d. Outstanding Online education initiatives

To highlight the most outstanding initiatives of e-learning in the region, we will take into consideration the study carried out by the UNESCO's International Institute of Educational Planning (D'Antoni, 2002), which analysed 10 cases of virtual universities. Among them, the **Open University of Catalonia** (UOC, Spain) and the **Université Virtuelle en Pays de la Loire** (France), were mentioned.

At the same time, in Europe, besides the support and promotion the European Commission gave to the development of the *e-Learning Action Plan* program (2001), several universities in different countries have reacted developing interesting projects under this umbrella. Herein, it is important to shed the light on the official acknowledgment by law of the Italian government of the Italian **Università Telematiche**, the creation of the **Estonian e-University**, the top priorities established by Germany and especially Austria in terms of the use of ICT in higher education (Dittler et al., 2005). Another research made by Sangrà (2004), remarked the degree of incorporation of electronic offers in Spanish universities.

[3] UK has laws that indirectly influence distance education; whilst in Hungary there is no laws mentioning e-learning (IDEAL Report; 2015:39)

According the results of the study conducted by Sursock (2015), information and communication technology (ICT) has been highly important for 62% of respondents, notably in Greece (75%), Hungary (71%), the Russian Federation (79%), Slovakia and Spain (67%), Turkey (81%), Ukraine (100%) and the United Kingdom (67%). Despite these similar quantitative results need to be interpreted in the specific context of each country, it is clear that ICT will become even more important (+16% points) in the mid-term as indicated by 78% of the respondents. Institutions were also asked if they had a strategy or policy regarding e-learning as showed in the graphic below).

Fig.8 Top five objectives regarding the future development of e-learning (Sursock, 2015)

The results that can be extracted are: 44% answered positively while 27% of institutions are still in the process of developing one. A minority of them (13%) have a decentralised approach to this area and about 7% do not have a strategy. The reasons provided in the open space included the observations that e-learning is part of the overall institutional strategy or a component of the learning and teaching strategy.

II. Africa & Middle East

a. Online Education in the region

There are significant regional developments in the Middle East and African countries and education is one of most important driving forces, following the urgency of implementing the Sustainable Development Goals (Olcott, 2010). In this context, as part of education reforms, many developing countries governments remarked the importance of e-learning and ICT to enlarge the pool of students and benefit universities (Tarus, Gichoya & Muumbo, 2015).

In African countries, distance education has been used to widening access to basic education; and to maintain the education system, throughout the professors training. On the other hand, due to the lack of technological developments and a scarce IT infrastructure and connectivity, the ICT and online education still appears limited. Indeed, according to statistics gathered in the DOCEBO analysis (2014), the Internet penetration in Africa has reached only 15.6%. National governments are the only local actors in promoting the development of ICT and international stakeholders and providers started just recently to act in the regional arena (ELA Report, 2015; DOCEBO Analysis, 2014). Among the interesting initiatives and good practices, the two benchmarks, that will be deepened later in the report, are definitely the **University of South Africa (UNISA**) which is the oldest and largest open distance learning institution in Africa; and the **African Virtual University (AVU)** an international initiative financed by the World Bank offering programs to all the African students throughout a combination of internet tools and interactive videos. Although several universities are currently providing some online programmes in Nigeria, Cameroon, Egypt, Jordan, Tunis … and almost every country has a distance teaching university, confident data is not easily available.

The Middle East has been one of the latest regions of the world to adopt e-learning due to the lack of coverage and access to the Internet. Furthermore, the huge diversities in current social, economic and political situation across the region did not allow a homogenous development (Abdalla Yousif, 2009). Indeed, besides the case of Israel, which has been the pioneer for its extensive use of technology in education, exemplified by the **Open University of Israel**, and the **Arab Open University (AOU, Kuwait)** a sustainable development and educational non-profit project with 8 branches[4], the other experiences are at their very beginning or not very significant. In the last few years, the Middle Eastern E-Learning market has been growing rapidly as for the political willingness of Governments, Private Institutions and Corporations to be aligned to the global figures on education and computer literacy. On the other hand, the urgent demand of access to higher education has brought international stakeholders and suppliers in the regional arena. According the statistics reported in the DOCEBO analysis (2014) Oman is the top performer in the Middle East with the highest growth rate in the region at 19.6%, followed by Lebanon (16.0%), Turkey (12.9%), Kuwait (12.6%) and Qatar (11.3%).

[4] http://www.arabou.edu.kw/index.php/about/vision-mission-history-2

b. Drivers of development

Education has been promoted in the region through higher education programs and research done in English. Considerable progress has been achieved in gender equality with an improvement in opportunity for women to join higher education programs, thanks to the integration of ICT and distance education programs. As a matter of fact, the example of the **Zayed University** in Dubai is a good one to show the huge impact that e-learning and learning management systems can have on population, especially on female students, who for customs and social values are not allowed to stay in the university campus after working hours (Mirza & Al-Abdulkareem, 2011). According to the type of e-learning provision and adoption, these authors determine three main models: virtual, hybrid and traditional university model.

The virtual university model, like the one of Hamdan bin Mohammed Smart University or the **Mediterranean Virtual University (MVU)** a cooperative e-learning initiative active until 2006[5], was fully online, offering degrees, diplomas and masters mainly in business and sciences. Despite, it apparently seems not active anymore; this initiative is a clear sign of commitment and willingness of building partnerships thanks to the new model brought by online education
The hybrid model, still not hugely widespread, matches the University physical facilities with the online course management system and it is represented by the pioneering Arab Open University (AOU) in Kuwait that currently counts more than 28000 students[6]. The latest model is the majoritarian of the traditional face-to-face university, in which e-learning is deployed to support the learning management system (Mirza & Al-Abdulkareem, 2011).

The global regionalism of higher education is about education yet is embedded in economics, politics, cultural and societal norms of the region. Building regional capacity is not about Western or Eastern supremacy, it is about setting regional agendas that can be achieved locally and with the collaboration of foreign knowledge, expertise, programs, research, and technology transfer (Olcott, 2010). Another interesting aspect related to the increase of online education in the region is related to the joint ventures made by Middle East Universities with a global e-university (Spinks & Bedi, 2010).

In this sense, the two authors highlight some aspects that have driven important changes: first, the increasing number of international conferences held in the region on the social role of e-learning. Secondly, the creation of online/virtual universities as the Hamdan Bin Mohammed Smart University Dubai in UAE (HBMSU, the first virtual university in the region), which is currently considered one of the pioneers in the region.

[5] http://www.virtualschoolsandcolleges.eu/index.php/Mediterranean_Virtual_University
[6] http://www.arabou.edu.kw/index.php/aboutus

c. Barriers to Online Education adoption

However, despite the last developments and a declared commitment of the governments in developing new education formats and strategies by using ICT, the incidence of online programs in the Middle East is still low if compared with other regions in the world (Spinks & Bedi, 2010).

Furthermore, the Academia across all the area presents a still conservative approach and general resistance to changes and new pedagogical methodologies. Accordingly, Spinks and Bedi listed some of the main barriers:

- Conception that face-to-face education has a higher quality;
- High supply of campus-based university programs is high, hence no need to offer online programs;
- Lack in understanding the advantages of online education, especially when connecting it with the job market;
- Preference for blended programs
- Lack of online education repositories in Arabic, as the majority of programs analysed in previous researches is in English.
- High level of bureaucracy in setting up online education programs and degrees accreditation (Spinks & Bedi, 2010; Mirza & Al-Abdulkareem, 2011).

Another main issue in the area is the scarce adoption and low penetration of the Internet as for the censorship issue, due to the concerns of governments about western political influence, manipulation attempts and immoral materials (Mirza & Al-Abdulkareem, 2011). As the two authors report UAE was among the first countries in the region giving its citizens access to the internet.

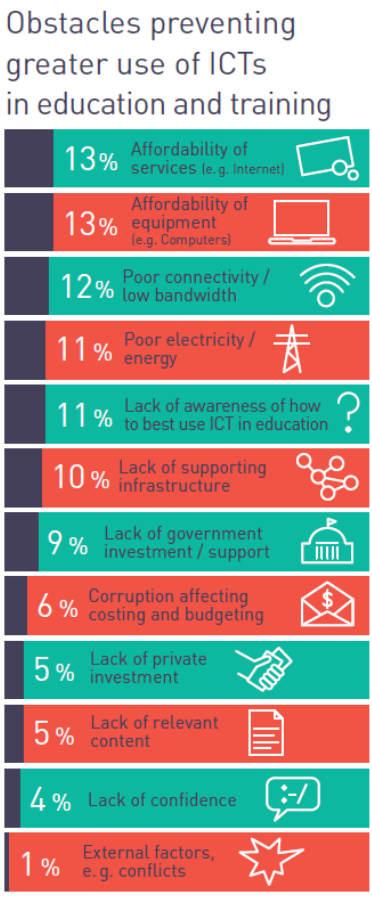


Fig.9 Obstacles preventing greater use of ICT in education and training (Mirza & Al-Abdulkareem; 2011)

In African countries the main barriers to the spreading of online education in higher education are the lack of a consistent national legal and policy framework (ELA Report, 2015) and the lack of an efficient technological infrastructure and connectivity, especially in rural areas, which being more expensive in African countries, prevent a fully implementation and spreading of e-learning (Tarus, Gichoya & Muumbo, 2015). Both barriers led to the adoption of blended education, which is less costly in terms of implementation and management.

The e-learning initiatives in Sub-Saharan African countries have been failing for mainly for lack of political support and of legal and

regulatory framework, security and safety issues, socio-economic factors, low education rate and skills (Tarus, Gichoya & Muumbo, 2015). This is also confirmed by the eLearning Africa Survey 2015 results that show in the infographic on the right the main obstacles to ICT deployment in education. However, the respondents' replies remarked also that teachers' resistance and staff members' lack of confidence is one of the first aspects to take into consideration when dealing with the development of online platforms or programs (ELA Report, 2015).

d. Outstanding Online education initiatives

An interesting partnership have been established between the Oman Ministry of Education with the Edutech Middle East to provide a centralised learning platform helping to disseminate and share materials among students spread around the country[7] and integrating e-learning solutions (Mirza & Al-Abdulkareem, 2011).

The **Mediterranean Virtual University (MVU)** a cooperative e-learning initiative active until 2006[8] represented an attempt to spread online education in the region beyond the national borders. Involving 9 universities from Jordan, Egypt, Malta, Turkey, Lebanon and Palestine, Cyprus and 2 EU partners (Scotland and Denmark), the main idea was to offer a maximum of 4 courses per partner and allow students to complete a degree (Mirza & Al-Abdulkareem, 2011).

With the largest education system in the Middle East, **Egypt** has been improving the quality of its education taking advantage from the digital revolution and ICT. Indeed, the ICT strategy 2012-2017 proposed by the government, aiming to provide high internet coverage in schools and universities, soak to develop the e-learning sector and increase the number of students involved in online education (ELA Report, 2015).

Among the best practices in Africa is the **National Open University of Nigeria** defined as an ODL institution renowned for providing functional, flexible, accessible, cost-effective education[9] that since 1986 seeks to provide education for all, promoting vocational and lifelong learning at lower costs, with flexibility.

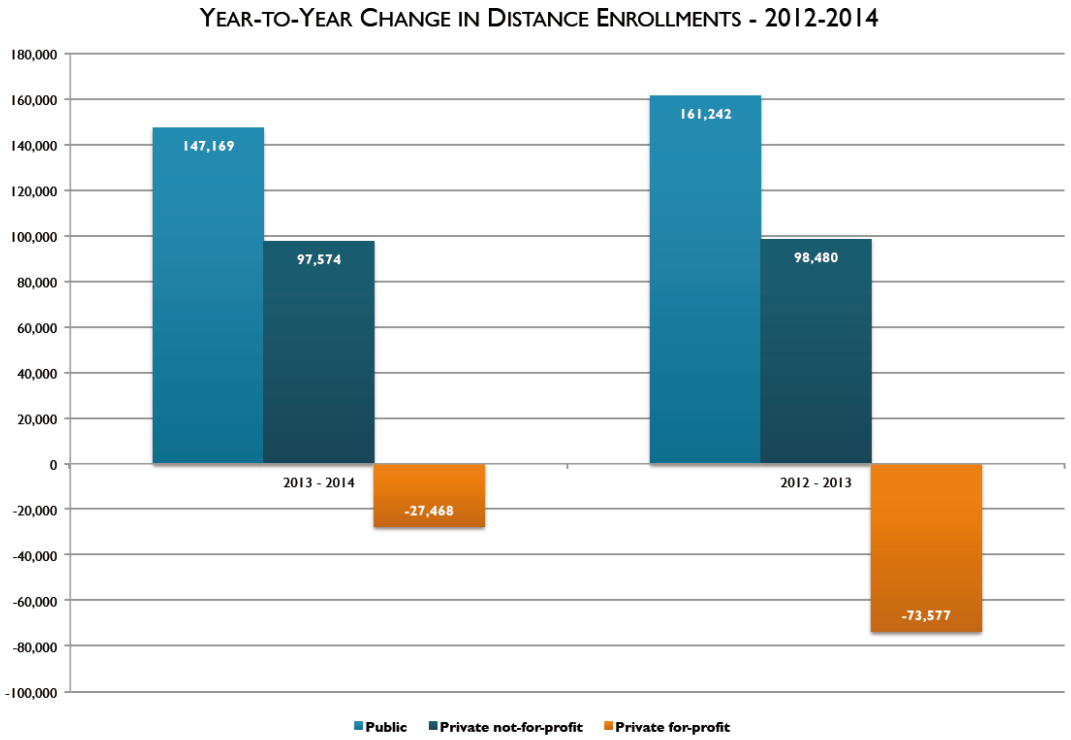
[7] http://www.bi-me.com/main.php?id=32055&t=1
[8] http://www.virtualschoolsandcolleges.eu/index.php/Mediterranean_Virtual_University
[9] http://nouedu.net/page/university-you-0

III. United States and Canada

a. Online Education in the region

The development of distance education in the US has a long story dating back to the 1800 when teachers of the University of Chicago tried to connect through correspondence programs (Sun & Chen, 2016). The evolution followed the different waves, as explained in the introductory chapter, until the years 2000 with an increasing number of higher education institutions and universities committed to deliver online courses and programs. In the US the growth rate of online education, according Allen & Seaman (2016), during the last few years is highly significant.

Fig.10 Year-to-year Change in Distance Enrollments – 2012-2014 (Allen & Seaman 2016)



The same report indicates the inclusion of the e-learning according to the education level:

- 72,7% Undergraduate Degrees
- 38,7% Graduate Degrees

Whilst, in their last report (2017) Allen and Seaman remark that in the undergraduate degrees, the public offer increases, whilst the private one keeps decreasing. The 2012 to 2015 growth represents 596,699 additional distance students in 2015 over the number in 2012. Comparing 2015 distance enrolments to data from 2012 highlights the great disparities by sector:

- The non-profit sector experienced tremendous growth (40.0%, or 305,925 students).
- The for-profit sector experienced a significant decrease (-18.0%, or -191,300 students).

Authors: *F. Giardina, M. Guitert, A. Sangrà* - IO1|A1

- Public institutions continued their history of steady growth (13.4%, or 482,074 students).

In addition, according to Allen & Seaman (2016) the online education is good or even better than the traditional face-to-face one and this perception just increased from 57.2% in 2003 up to 71.4% in 2015.

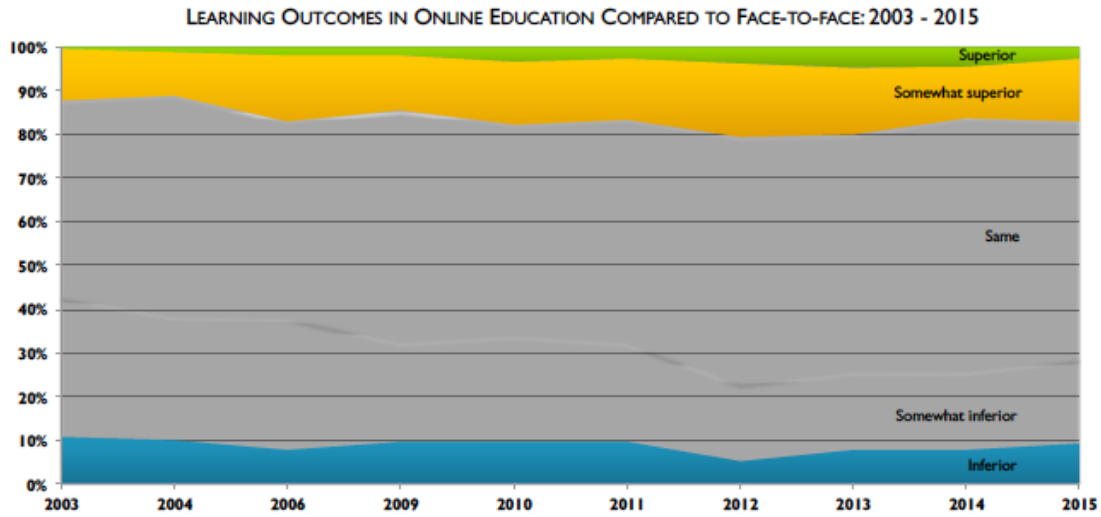


Fig.11 Online Report Card - Tracking Online Education in the United States 2016 (Allen & Seaman, 2016)

There are now at least seven million students in the USA taking at least one fully online course, with al most one million online course enrolments in just the California Community College System (Johnson & Mejia, 2014).

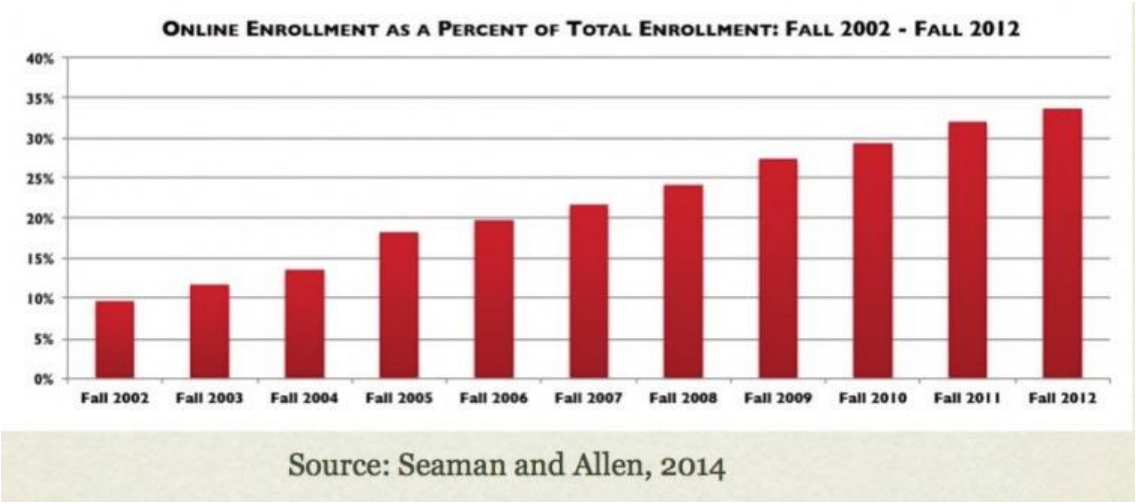


Fig.12 The growth of online learning in the USA (Allen and Seaman, 2014)

In Canada, despite the slow process of incorporation of virtual tools in teaching and learning programs, the online education is currently flourishing all over the country (Contact North Study, 2012; CCL-CCA Study, 2009), especially in Ontario and British Columbia (University of Ottawa Report, 2013). In

fact, the authors report that the high number of online offer in Canada significantly exceeds the offer of other countries in which online education has a long story.

The table below extracted from the CCL-CCA Study clearly shows that in the early 2000s, Canada was the first country among the ones listed and this was mainly due to the specific geographic reality and the existence of small rural communities that used the most online and distance teaching and learning (CCL-CCA Study, 2009).

Tableau 1.17
Proportion des programmes ou des cours offerts comprenant des composantes en ligne, dans certains pays, 2004

	Aucun ou insignifiant	Modeste	Important	Dépendant du Web	Intégralement en ligne
	(%)	(%)	(%)	(%)	(%)
Royaume-Uni	41	34,8	15,5	5,8	2,8
Canada	43,4	32	14,5	3,7	6,4
Australie	36,5	29	18,4	11,7	4,5
Afrique du Sud	52,5	32,5	7,4	4,7	2,9
Asie-Pacifique	33,4	31,8	21,8	9,5	3,5

Source : Adapté du document de l'OCDE *La cyberformation dans l'enseignement supérieur : État des lieux*, tableau 1.2, Paris, 2005.

Fig.13. Proportion of programs or courses offered which have online components (CCL-CCA Study, 2009).

b. Drivers of development

As reported by several authors (Allen & Seaman, 2016; Siemens et al., 2015; Sun & Chen, 2016) the advent of the WWW in the early 1990s is the main driver of the online revolution in teaching and learning and of its booming during the 2000s.

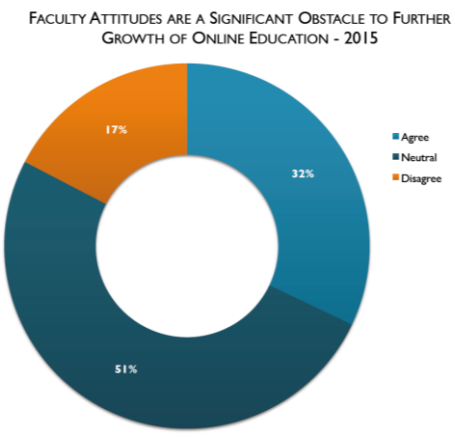
In 2008, another important factor, the severe economic recession, influenced the decrease in federal and state funding for higher education causing a severe decline of enrolment.

In Canada, the success of online education institutions is mainly due to the systematic transfer credit systems in the provinces of British Columbia, Québec and Alberta, and the adoption by universities of block credit transfer (Contact North Study, 2012). According this study, another key factor is attributed to the fact that online education institutions in these provinces have provided their services to both Canadians from other provinces and international students. An example is Athabasca University, which has more students from Ontario than from its home province.

c. Barriers to Online Education adoption

There are several barriers to the adoption of online education. Allen and Seaman (2016) and the Center for Educational Innovation White Paper (2017) listed among them:

- Faculty attitude against online education
- Still low quality of online education outcomes due to the lack of a consistent methodology



on evaluation and assessment of online courses and programs.

- Low retention rate of online courses that if compared with face-to-face courses is 8% lower.

Fig.14. Faculty attitudes are a significant obstacle to further growth of online education (Allen & Seaman, 2016).

d. Outstanding Online education initiatives

In Canada there are 6 higher education institutions which adopted a specific strategy towards online teaching and learning: Royal Roads University, Thompson Rivers University, Athabasca University, Memorial University, Téléuniversité Québec (TELUQ) and the Centre Collégial de Formation à Distance.

IV. Latin America

a. Online Education in the region

Latin America has recently experienced a period of progress and economic growth and higher education has been one of the main drivers of socio-economic development. Indeed, during the last decade, higher education has been going through an incredible transformation with the beginning of blended learning and the use of virtual components and digital tools towards a full online education model (Rama, 2016). Distance education started to expand in the region during the late 70s when public institutions started to test semi-virtual models of teaching and learning. Indeed, thanks to the increasing usage of Moodle platforms, which lowers the costs of education, distance education started to be the main trend in the region with a new digital offer during the 90s in Colombia, Venezuela, Mexico and Costa Rica (Rama, 2014). This change and adaptation of universities to the new technologies and digital tools led them to become more international, passing the national borders and reaching a huge number of people.

The new paradigm of ITC and higher education, axed in the e-learning has been rapidly growing in the continent, thanks to the enrolment increase, new local providers and public regulations (Torres & Rama, 2010). The key of the virtual model success seems to be the growing expansion of information technology and digital communication (Rama, 2014; OECD Report, 2015). Despite this, the Latin American countries quite differ in their specific socio-economic and technologic characteristics (Facundo, 2002) with a peculiar heterogeneity in higher education scenario and degree of commitment with distance education (Rama, 2016).

According to the OECD report, online education has the potential to allow huge social segments that before were excluded from social mobility for economic reasons, to access higher education. Indeed, it lowers barriers based on income, origin or geographical location, reduces inequality and fosters education courses completion (OECD Report, 2015). Its expansion in Latin America is hence due not only to the emergence of new ICT or the development of a new pedagogy and education delivery, but it is also directly linked to the growing demand of entering in the higher education market. Indeed, as reported by the OECD (2015), e-learning will expand strongly over 2013-18 in all the developing regions and in Latin America it is projected to reach 9.7%, with a 4.4% increase if compared with the previous period.

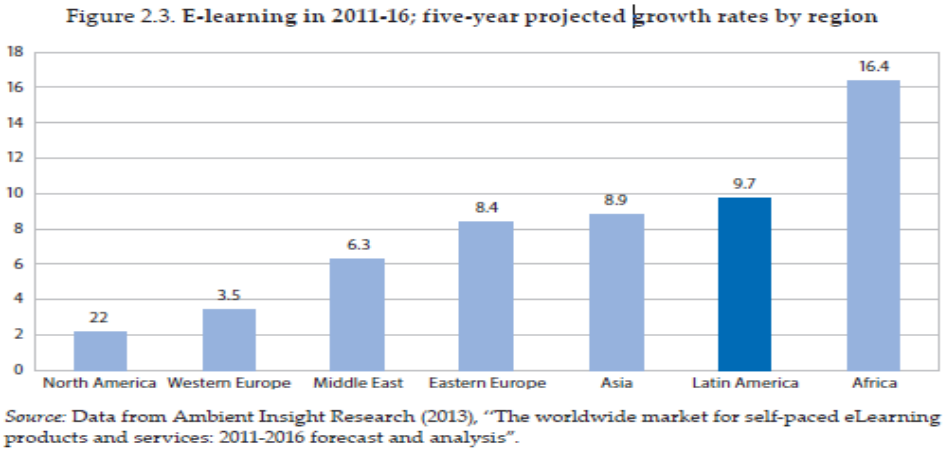


Fig.15 E-learning in 2011-2016 (OECD Report, 2015)

Although the situation of e-learning in Latin America differs across countries, all of them have seen the same dynamism in launching the online offer in higher education; have tried to set up new policies and programmes with the aim to increase access (OECD Report, 2015). The new digital coverage and the entrance of new providers allowed, as stated by Rama (2016) higher economic income and a wider offer of online courses under the distance education model and the creation of fully online institutions. In the picture below a list of which he considers the most important ones:

Cuadro 1. Universidades 100% virtuales

País	Institución	Carácter
Colombia	Fundación Universitaria Católica del Norte	Privada
Colombia	Fundación Universitaria Virtual Internacional	Privada
Colombia	Corporación Universitaria de Asturias	Privada
México	Universidad Abierta y Distancia de México (UnADM)	Estatal
México	Universidad Virtual Educamet de México	Internacional
México	Universidad Virtual del Estado de Guanajuato	Estadual
México	Universidad Digital del Estado de México	Estadual
México	Universidad Virtual del Estado de Michoacán	Estadual
México	Universidad Virtual de América (UNIVIA)	Privada
México	Universidad Mexicana de Educación a Distancia	Privada
México	Sistema Universidad Virtual de la Universidad de Guadalajara	Pública
México	Consorcio Clavijero del Estado de Veracruz	Pública
México	Universidad Mexicana en Línea (UMEL),	Privada
México	Universidad Fray Luca Paccioli (UFPL)	Privada
Puerto Rico	Sistema Universitario Ana G. Méndez –SUAGM	Privada

Fig.16 Fully online Universities (Rama, 2016)

However there are other distance teaching universities in the region that have moved to online that are

not in this Rama's list. UNED in Costa Rica, Universidad Virtual de Quilmes (Argentina), UNAD (Colombia), and the Virtual University of the Instituto Tecnológico de Educación Superior de Monterrey (ITESM), could be mentioned amongst others.

b. Drivers of development

The growing of online education in the region is surely due to the design and implementation of legal regulation setting up the offer of online courses and programs, but also of real online education institutions. Indeed, as Claudio Rama reports (Rama, 2016) currently governments are setting up a specific legislation allowing higher education institutions (HEI) to propose fully online programs in Mexico, Costa Rica, Colombia, El Salvador, Paraguay, Ecuador etc. The online education phenomenon has been increasing especially from the 1999 in the private sector, which expanded its offer across the national borders, causing a process of trans-nationalization with a bigger coverage (IESALC/UNESCO Report, 2010).

Several are the forces leading to an increase of online education in the area. Among them, we will highlight the most important:

- One of the main drivers according to the data gathered by Torres and Rama (2010) is the **increase in coverage and implementation of distance education**. Despite, the statistics in the region are quite poor and bad; they show a growth in the enrolment rate in distance education of 30%, meaning that it is considered a real option among the education delivery modes. The two authors also highlight Brazil as good practice in the region to encourage distance education through the commitment of HEI, public funding and policies to reinforce and increase distance education within the country. In fact, they report that while in 2002 the students enrolled in distance education were 84.713, in 2007 the number increased reaching 339.000 (Torres & Rama, 2010).
- **Higher commitment of public institutions in distance education and new regulations**. Directly related to previous key factor, local governments interest in the implementation of public policies towards new models of education have been increasing in Brazil, Mexico, Colombia and Cuba (Torres & Rama, 2010). Indeed, if in a first moment the most receptive institutions toward online education were the private ones, the political interests led governments to give economic support to public institutions to focus on this new model to have a higher enrolment rate and better reputation with lower costs for students and lower dropout rate. In this sense, there is an ongoing debate, when dealing about providing quality education in general terms. Hence, private and public institutions are discussing about whether including minimum standards and criteria to assess quality is fundamental to set a common normative framework to give online education more consistency and solidity (Torres & Rama, 2010).
- The **huge variety in the models of online education**, that depends both on the kind of methodologies used (mixed/hybrid or fully virtual), the pedagogical approach and national legislation and policies.
- The increasing usage of **Open platforms, Moodle and OER** allowed establishing a common model for the delivery and sharing of education materials, involving a higher degree of virtualization

(Torres & Rama, 2010).

- The **online education offer is local**, meaning that the legal framework in which online education moves is related to the national legislation of every country supporting the network and partnerships between universities and HEI of the region (Torres % Rama, 2010). Indeed, the authors highlight some examples of cooperation between universities and the building up of consortium among different institutions with specific expertise like the UVirtual (Chile), the Consorcio Clavijero or the ECOESAD the Consorcio de universidades públicas para la Educación a Distancia in Mexico (Torres & Rama, 2010).

c. Barriers to Online Education adoption

According to recent data and analysis, e-learning has been quickly increasing by a 15% annual rate[10] and it is expected to grow in the next years. Despite the positive aspects brought by online education, like increasing access, quality and connection with the job market the traditional face-to-face education is still prevailing (OECD, 2015). The region performs badly in many higher education dimensions and various challenges remain. Despite the democratising effect brought by online education, the digital divide between the richest and the poorest social groups persists. Access is low and still very unequal as showed in the graphic below:

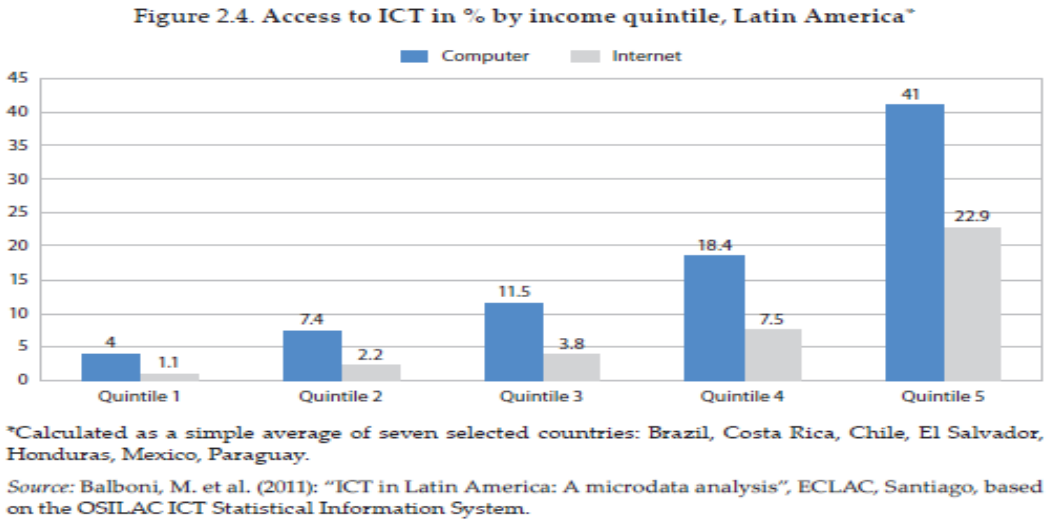


Fig.17. Access to ICT in % in LATAM (OECD Report, 2015).

Although the potential of e-learning to be a fundamental factor for social mobility and equality, and the Higher Education system in Latin America is willing to adapt, without the correct policies and political willingness to improve access to ICT, enabling the right regulations, involving private-public partnerships to finance new initiatives, it can be considered a negative driver replicating existing inequalities.

[10] http://www.univision.com/noticias/educacion/la-ensenanza-virtual-crece-al-15-anual-en-america-latina

Among the other barriers encountered, García-Quintanilla (2010) and the results of the OECD Report Interview (2015) remark:

- Lack of competences and quality in the accreditation and evaluation process
- No solid public policies and lack of real government implication to
- Scarce culture of new technologies
- Inappropriate organisation infrastructures and still high maintenance and management costs
- Scarce human resources and training of staff
- Prejudices and social misconception about the quality of online education is another important negative factor to take into consideration as Josep Maria Duart, Professor at UOC, states in an interview[11]. According the UOC Professor, the reason why online education in Latin America is still struggling is because some universities did not considered quality assurance in online education materials, damaging the reputation of online education and stemming universities to go online.

d. Outstanding Online education initiatives

In Latin America, due to the consistent diversity in national policies and education system, every country has its own approach to online or distance education. Hence, since the initiatives undertaken will differ quite a lot in terms of impact, we will provide herein a quick overview on the region and its countries.

In Argentina, online education is still at its early stage of development, despite the high number of virtual programs. In fact, the Government has not been implementing policies focused on e-learning despite its interest in strengthening human resources in ICT (OECD Report, 2015). The Universidad Virtual de Quilmes (UVQ), the first online university in the country (created in 1999) offers one of the best bachelor's degrees, entirely online and with a high flexibility[12].

Brazil has a long tradition of distance education; indeed, since the mid 1990s the government implemented several education Acts to recognise and promote distance education as a valid and quality model. Whilst since the year 2000s the higher education institutions in Brazil started the process of accreditation with the government for their online courses and expand this way their online demand (OECD Report, 2015). Whilst writing this report, we have known a new publication will establish a Census of the Brazilian online education providers.

Costa Rica can be considered as a benchmark in the region for the development of distance education thanks to the creation in 1977 of the Universidad Estatal a Distancia (UNED), which

[11] http://www.semana.com/educacion/articulo/educacion-virtual-programas-de-educacion-virtual/518639

[12] http://biblioteca.clacso.edu.ar/Argentina/iec-conadu/20130228015857/Cuadernillo-Educacion-Virtual.pdf

currently is a well-known model in the region. Besides this, what makes Costa Rica different is the government policies approach to online education. In fact, despite the introduction of ICT centres in education institutions, the government applies the principle of non-interference in the decision-making and autonomy of universities (OECD Report, 2015).

In **Mexico**, distance education has a long trajectory: As showed by the strong commitment of the government to improve the quality of the education offer and develop the first mode of distance education, in 1947 the Instituto Federal de Capacitación del Magisterio the Mexican government was created to widen access to the most isolated populations[13]. From the end of the 1980s the Mexican Government developed a series of reforms to modernise the National Education Plan following the requirements of the North American Free Trade Agreement. Today the online offer in **Mexico** covers around 7% of total demand for higher education and among the most important institutions offering online education programs we can find the **Monterrey Institute of Technology (ITESM),** the **University of Guadalajara (UDG),** the **National Autonomous University of Mexico (UNAM)** and the **Universidad Abierta y a Distancia de México (UNADM)**, the first totally online higher education institution, created in 2012 (OECD Report, 2015).

[13] http://www.cucs.udg.mx/revistas/edu_desarrollo/anteriores/29/029_Fernandez.pdf

V. Asia and Australia

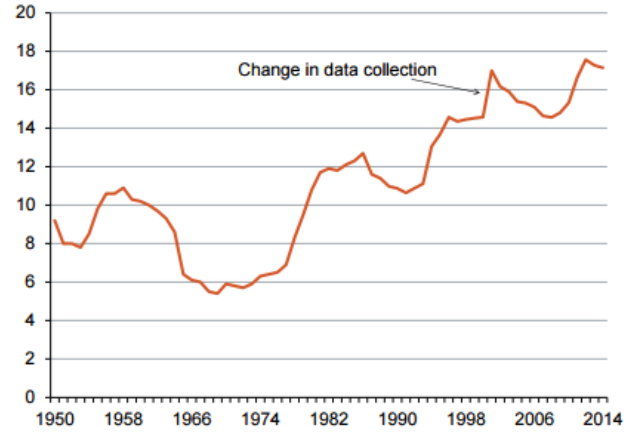
a. Online Education in the region

According to the DOCEBO Report (2014), the Asian E-Learning Market has the world's highest regional growth rate for e-learning, of 17.3%. Indeed, the rollout of national education networks and the teaching staff shortage have led to a higher demand of e-learning product, with a rapidly increasing online education enrolments and contents digitalization[14]. Across Asia, there is indeed a considerable interest in the potential of online higher education. Some governments are actively encouraging with funded projects to literacy development, the use of blended and online learning in universities, looking to the benefits it can deliver in improved educational outcomes and extending the access to education especially in rural areas (DOCEBO Report 2014).

However, the concerns about quality assurance, regulation, cultural acceptance, infrastructure capacity and the financial cost of developing online education are still significant, especially in developing countries with a weak education system or economy[15]. Hence, due to the unbalanced growth in the region, we will provide an overview on some specific examples of this geographic area, highlighting the good practices.

In **Australia**, distance education has a long and solid path dating back to 1991 with the first print-based distance education program (Stuparich, 2001). Indeed, the large distances and the need to reach rural and most isolated communities with limited access to education, led the government to develop distance education courses and usage of ICT (Erdinc, 2014). The move to e-learning has been assisted on the demand side by high access levels to computers and the Internet penetration, with respectively 66% of Australian adults having used a computer and 50% of adults having accessed the Internet (Stuparich, 2001). The economic regression of the years 2008 and 2009 was one of the main causes of the distance education as preferred and most popular option. As reported by the Grattan Institute Mapping Study (2016) and showed in the graphic on the right, from the early 1950s to 2014, the number of students enrolled in distance and online education has been increasing by 17%.

Figure 8: Proportion of students studying off campus, 1950–2014
Per cent of students studying off campus



Notes: Multimodal students not included; Open Universities Australia included. Dip from mid-1960s caused by the incorporation of non-university institutions into the statistical series; dip from mid-1980s influenced by moving nursing courses from hospitals to universities; 1994-2000 headcount discounted by 3.7 per cent to reduce the effect of possible double counting of OUA students.
Sources: DEEWR (2000); Department of Education and Training (2016f); (various years-c)

[14] http://www.universityworldnews.com/article.php?story=20140925164018658
[15] https://internationaleducation.gov.au/News/Latest-News/Pages/article-Educating-Online-in-South-East-Asia.aspx

Fig.18. Proportion of students off campus 1950-2014 (Grattan Institute Mapping Study, 2016)

Over the last decade, the online education market in Australia grown by almost 20% and its market is expected to be a leading international provider of online education all over the world in the next few years[16]. Currently, the most important actors in online education are the Open Universities Australia, the Southern Queensland University and the Universitas21 Consortium.

India is a benchmark country in the continent in terms of fastest-growing industry developing online learning initiatives to widen access to education with a value of INR 18.41 trillion in 2010/2011 (DOCEBO Report, 2014). Over the past few decades, India has developed several excellent universities and colleges, which are rapidly becoming the best education destinations in Asia, and their online programmes are experiencing a similar boom[17]. This quick grow is mainly due to the increasing government initiatives to promote e-learning and distance education institutions with the aim to democratise education supporting long life learning. The huge efforts made by the governments are also caused by the fact that by 2025, India will have the second largest working-age population in the world (25% of the world's work force). Hence, distance and online education are being used to make education accessible and to prepare a workforce 250 million people by 2030 (Kumar et al., 2017). Furthermore, the rapid adoption of technology, mobiles the increasing internet penetration coupled with the shortage of quality education, and convenience and affordability factors, have also contributed to the booming interest in online education.

Countries such as China, South Korea, and Malaysia are also rapidly expanding online education with specificities; whilst Myanmar, Thailand, Vietnam, Indonesia and Nepal have a growth e-learning rate above 30%[18]. It is reported that about 85,000 people took online courses in Malaysia in 2011, both at web-based institutions and traditional universities offering Internet teaching[19]. In fact, Malaysia is fuelling online education and launching new education initiatives to reach under-served areas widening access to higher education to both Malaysian and foreign students.

In China, distance education significantly contributed to widen access to higher education especially in rural areas, improving the socio-economic development of the country. It has indeed a long history of distance education, beginning in the 1960s, with courses delivered via mails, radio and television. Currently, China can be considered a leader in online education with around 70 different universities dedicated to online education, a number that will probably grow in the next few years as for the high demand for online learning opportunities as for demand of skills

[16] http://monitor.icef.com/2012/06/8-countries-leading-the-way-in-online-education/
[17] http://monitor.icef.com/2012/06/8-countries-leading-the-way-in-online-education/
[18] http://www.universityworldnews.com/article.php?story=20140925164018658
[19] http://www.theaustralian.com.au/higher-education/online-universities-blossom-in-asia/news-story/db05a668de4188ff2f97eee1c9c005c5

workers[20]. Contrary to the Indian example, the Chinese market is mainly private and is growing rapidly due to digitalization, new technologies and broadband penetration[21].

b. Drivers of development

In Australia, specifically and as already mentioned above, the adoption of new technologies in the learning management system started at the very beginning of the 1990s. One of the main drivers of this change was due to the peer pressure amongst the Vice-Chancellors towards the new competitive funding education model (Uys et al., 2011).

In the last years, the good Australian economic situation and the economic crisis in Europe has made lots of British faculty to move to Australia. This, joined to the allocation of budgetary resources in the universities, has had the effect of fostering the evolution of online education in Australia. And its huge potential has not been unleashed yet.

c. Barriers to Online Education adoption

The huge increase in the use of ICT for higher education has been changing the education panorama in the entire region, encouraging a higher number of HEI to deploy technology and innovative tools to enhance quality higher distance education. However, despite the positive outcomes and initiatives, several issues emerged, which are quite similar to those highlighted in the other countries. Among them, the UNESCO Bangkok Report (2011) lists the following:

- Lack of support from management;
- Unclear division of function and power;
- Uncoordinated planning and implementation;
- Question of ownership;
- Shortage of trained staff to cope with the diversity of responsibilities and tasks;
- Resistance from staff and reluctance to be re-trained; and
- Insufficient funds for developing, purchasing and implementing ICT.

d. Outstanding Online education initiatives

The **Southern Queensland University (USQ)** is one of Australian top 3 universities for online education, with 75% of students enrolled in fully online programs[22]. The **Open Universities Australia (OUA)** is made up of a consortium of 7 Australian universities providing to 41,297 international enrolled students the chance to take online undergraduate and graduate programs[23]. However, surely, the **Universitas21 Consortium** is the most outstanding initiative of the region. Founded in 1997, it is an international network of 26 universities in 17 different

[20] http://monitor.icef.com/2012/06/8-countries-leading-the-way-in-online-education/
[21] https://seekingalpha.com/article/3986777-china-online-education-best-worlds
[22] https://www.usq.edu.au/study/online
[23] https://www.open.edu.au/yearinreview2016/#open-universities-australia-message-page

countries with 1.3M students and 210,000 academics and researchers associated with these universities, working together to foster global citizenship and institutional innovation through internationalisation[24]. The Charles Sturt University (CSU) is a multi-campus university with 23,367 distance students enrolled in 2010. It currently has a strong reputation in online education as reported by the OEL Case Study (2016)[25] aspires to challenge the traditional approach to learning and teaching with a more flexible delivery and a highly commitment with Open Educational Resources (OER).

Among the most valuable initiatives in India, there is the **Indira Gandhi Open University (IGNOU),** which currently has 227 academic programmes on offer supported by 2981 Learner Support Centres, with over 2.81 million learners and 43,785 academic counsellors interacting with students[26].

The **Open University of Malaysia (OUM)** represents another outstanding initiative. As first open distance learning Institution, the OUM has been introducing, since 2000, eLearning to democratise education (Ali, 2010). Furthermore, mobile technology or m-learning has been supporting teaching and learning enhancing a new delivery mechanism based on the compulsory attendance of the "Learning Skills for Open and Distance Learners" program. This initiative has been surely promoted under the introduction of new legislative acts during the 1990s to transform the higher education panorama and improve assurance, accreditation, research capability making the country a centre of educational excellence in the region (Ali, 2010). One of the nation's biggest e-learning schools is the **Asia e University (AeU)**, a collaborative multinational university initiated by the Asia Cooperation Dialogue (ACD), to foster Asian cooperation at a continental level. It is currently known as the first Malaysian initiative to foster online education[27], which offers fully online programs and MBA to 31 different Asian nations and collaborated with International Business Schools[28].

ChinaEdu Corporation is one of the largest comprehensive education institutions in China with the mission of providing access to higher education through online degree program, joint ventures and partnerships with leading universities in China[29]. It has over 311,000 online students in both degree and non-degree programmes. In December 2013, ChinaEdu reported 211,000 students enrolled in their online degree programmes, a 14.5% increase over the year before[30]. Currently as reported in its webpage, with 400,000 degree-pursuing students, ChinaEdu is the largest online degree service provider both for number of partner institutions and enrolment rate. The **Open University of China (OUC)** is a public institution, financed by the Chinese government and established based on the former China Central Radio and TV University (CCRTVU) and local radio and TV universities (RTVUs). It uses modern information technology to support a school

[24] http://www.universitas21.com/about
[25] http://www.oel.edu.au/resources/uploads/2016/11/Case-Study-CSU.pdf
[26] https://onlineadmission.ignou.ac.in/admission/Upload/common_pros2016.pdf
[27] http://www.aeu.edu.my/about-aeu/overview
[28] http://monitor.icef.com/2012/06/8-countries-leading-the-way-in-online-education/
[29] http://ir.chinaedu.net/html/2009/suoyoudanye_1116/575.html
[30] http://www.universityworldnews.com/article.php?story=20140925164018658

network covering all urban and rural areas in China. With 3.59 million registered students, of which 1.05 million are undergraduates and 2.54 million are junior college students it represents one of the mega-universities of the world together with the IGNOU[31].

[31] http://en.ouchn.edu.cn/index.php/about-v2/new-style-university

CONCLUSIONS

Online education is a global trend and it is increasingly growing. However, due to the specificities of every country and geographic area in terms of access to technology, policies development and average level of population education, the e-learning evolution and impact can be differently measured and analysed. In fact, it becomes difficult to say how many online universities do currently exist.

Due to the huge number of different labels which refer to any sort of digital approaches to teaching and learning, we have encountered several difficulties in the research of papers, documents, updated statistics and figures about online education across the different countries and especially in Europe. Hence due to the lack of available data on this matter, we believe that to provide a solid base to the CODUR Project, but also to create a comprehensive study that could be used for further investigations, it might be recommended to carry out a more in depth work in line with the one Tony Bates is leading in Canada. Although this is not the main aim of this deliverable, this need will be taken into consideration along ad after this project.

Data from different studies have been used in this document, but their final result is obviously unbalanced. More studies in several regions will be necessary in order to have a better overview of the topic, using the same kind of categories in order to be able to do effective comparisons. However, this report is going to be useful for the purpose of the CODUR project: we now know how the scenario is and what the handicaps we will face in creating an online dimension for university rankings. We have identified the most important stakeholders and those institutions that can provide interesting insights for the sake of the results of CODUR.

As online learning becomes more prevalent in universities, there is a need to identify the core skills and knowledge that improve learning in this setting. In the Horizon Report 2017 (2016), researchers concluded that providing plentiful opportunities for collaboration among "virtual teams" is crucial to fostering deeper learning. In addition as Wilcox (2016) states, online learning may be both an opportunity and a catalyst to achieve both these purposes. At the same time, online teaching is also becoming a major to research and discuss on, especially for those fostering the "Digital Scholarship":

> *"A critical perspective on digital learning is desperately needed, and I hope that future scholarship will engage with this perspective, not simply to criticize online learning for being unlike face-to-face learning, but to drastically improve the design and functions of education overall. Scholarship should evoke change, and academics, particularly academics in schools of education, should strive to improve our societies in meaningful ways. By applying research to practice, we can make strides towards creating equitable, effective, and supportive online learning environments."* (Veletsianos, 2016:201).

Online education is, definitely, the right approach to quality online higher education.

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ANNEX

Institutions involved in EXCELLENCE: Quality Assessment for E-learning: a Benchmarking Approach

- EADTU (The Netherlands)
- Open Universiteit Nederland (The Netherlands)
- Open University (United Kingdom)
- OULU-University (Finland)
- Universidad Nacional de Educación a Distancia (UNED) (Spain)
- Dublin City University (Ireland)
- Ghent University (Belgium)
- Lund University (Sweden)
- University College London Partners

E-xcellence (2005-2006)

- Centre National d'Enseignement à Distance (CNED)
- Universitat Oberta de Catalunya (UOC)
- Estonian Information Technology Foundation (EITSA)
- National Council for Distance Education (APERTUS)
- Network per l'Universita Ovunque (NETTUNO)
- European University Association (EUA)
- Nederlands-Vlaamse Accreditatie Organisatie (NVAO) Partners

E-xcellence PLUS (2008-2009)

- International Telematic University UNINETTUNO (Italy)
- NVAO (Belgium/The Netherlands)
- Estonian Information Technology Foundation (Estonia)
- Högskoleverket / NSHU (Sweden) - KU Leuven (Belgium)
- The Czech Association of Distance Learning University (CADUV)
- University of Hradec Králové (Czech Republic)
- Slovak University of Technology in Bratislava (Slovakia)
- Moscow State University for Economics, Statistics and Informatics, MESI (Russia)
- Universitäre Fernstudien Schweiz (Switzerland) - Hungarian e-University Network (Hungary)

ESMU: E-learning Benchmarking Exercise in European universities (2009) Participating universities

- University of Southern Denmark
- University of Copenhagen
- Aarhus University
- University of Latvia
- Lund University

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- University of Kuopio
- University of Porto
- University of Bologna
- University of Oulu

Partners E-xcellence Next (2011-2012)

- Universidade Aberta (UAb), Portugal
- Open University of Cyprus (OUC), Cyprus
- Riga Technical University (RTU), Latvia
- Akademia Górniczo-Hutnicza (AGH), Poland
- Hellenic Open University (HOU), Greece
- Kaunas University of Technology (KTU), Lithuania
- Moscow State University of Economics, Statistics and Informatics (MESI), Russia
- Accreditation Organisation of the Netherlands and Flanders (NVAO), The Netherlands
- Flemish Interuniversity Council (VLIR), Belgium
- The Flemish Council of University Colleges (VLHORA), Belgium
- African Council for Distance Learning (ACDE), Kenya
- CommonWealth of Learning (COL), Canada
- Latin American and Caribbean Institute for Quality in Distance Higher Education (CALED), Ecuador
- PROSE Network for Quality Management

Associated partners in E-xcellence Next

- European Centre for Strategic Management of Universities (ESMU), Belgium
- European Association for Quality Assurance in Higher Education (ENQA), Belgium
- United Nations Educational, Scientific and Cultural Organization (UNESCO), France
- EADTU Student Council, The Netherlands

Partners updating Quality Assessment for E-learning a Benchmarking Approach (third edition, 2016)

- OUUK: Jon Rosewell, Karen Kear and Keith Williams
- UNED: Covadonga Rodrigo, Ángeles Sánchez-Elvira Paniagua, Miguel Santamaría Lancho
- AQARTO Agency & Ghent University: André Vyt
- UCL: Harvey Mellar
- Ossiannilsson QOOL (quality in open online learning) Consultancy & The Swedish Association for Distance Education (SADE): Ebba Ossiannilsson
- EADTU: George Ubachs, Lizzie Konings