

Communication of Madrid about virtual higher education and the Bologna process
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1. The EADTU Sorbonne Declaration (Paris, 2000)

According to their long tradition and experience, EADTU and its members have already declared to contribute to the creation of the *European Area of Higher Education* in Paris (2000), especially in the perspective of lifelong learning. In their statement, virtual higher education enabled easy access to education and training provisions throughout Europe. It required virtual mobility, the exchange of learning material, as well as new types of interactivity and flexibility to enhance the competencies and employability of European citizens. Joint research and development was needed to achieve these objectives. All this would also strengthen the European and global position of the universities.

2. The changing student

Students already are strongly different from the past, and in the future they will be different from now. There is a drastic change in the student population.

Students' natural environment will be ICT-based. For students, a virtual learning environment will be as normal as yesterday's printed material.

In the mainstream (18-25 year), the number of part time students is increasing in many European countries. Education will be more flexible. Also, European governments aim at a better participation rate in higher education. This will result in mass higher education. Virtual higher education and e-learning can play a role in flexible responses to overcome the problems emerging from this. Virtual learning extends flexibility to differentiating content and individualising educational methods to the needs of the students, which is less possible with traditional educational approaches. Also, students will be able to study at their own place (at home or integrated in the workplace), time (when it is suitable to them) and pace (in line with other commitments).

Furthermore, students will not only be mainly young people, but also aged 25+. Many of these will already have a higher education qualification. They continue their study at the master level or they complete their study with a second discipline. Also, updating of academic and professional competencies will be a very important need in the knowledge society. In most cases, this links with the professional situation of this group, increasingly supported by the employers' training policy or integrated in a company's training system. Education and training are essential for keeping the employability of labour force in a knowledge society. Because they combine study and work, students will be increasingly off campus adult learners, who earn and learn. Many will have no other possibility but virtual learning. But also from a qualitative point of view, virtual education is often the best solution. It often will be blended with face to face education and training.

Within a kind of Personal Learning Portfolio students will keep a continuous record of ECTS-Credit points acquired in subsequent learning cycles as students and employees. This skill and competency profile will be the basis of personal professional development.

Special attention has to be given to social groups that up to now have not benefited enough from higher education such as immigrants in most of the European countries. From a European perspective, it is also important that countries at the borderline of the new EU will keep up with the general level of education that is required in our countries.

Students also seek an international experience. They will be mobile, which is in line with the European Commission's educational policy. They want to study in an international context by following courses of another university or by participating in international seminars, discussion groups or projects. Many multinationals like their future employees to have such an experience. Multicultural skills are becoming a requirement, as well as the knowledge of other languages. Therefore, universities in Europe will increasingly internationalise.

3. The changing institution

The context of the universities is changing drastically, *the Bologna process being the core innovation* for the next ten years. This embraces a lifelong learning perspective as a new mission and a new strategy. Mobility, university co-operation - both in education and research – and a more competitive and more international profiling of curricula will be achieved.

In any European university this innovation process will take place in an environment characterised by an *exponential deployment of technological infrastructure* for research, education and communication, connecting all actors in society (households, companies, organisations,...).

Universities will be more *responsive to larger numbers of students* and change their pedagogy to deal with a mass audience and differences between individuals, since at the same time; they have to educate the masses and to train highly qualified professionals and researchers. This seems at first glance contradictory, unless new learning models are developed and the full potential of ICT is used.

They will be more *responsive to the diversification of the market through a diversification of courses and programmes* from the point of view of content and approaches (disciplines, areas, specialisation). The alternative would be a mismatch between students and education and hence a lack of attractiveness possibly leading to a higher dropout rate.

Universities will be responsive to new stakeholders such as regions and organisations in the public and private sectors. In a knowledge society, these stakeholders will need more joint research, joint knowledge and joint education and training.

It can be expected that joint projects, networks and alliances between universities will emerge that *share* resources of any kind, *connect* their virtual learning systems and services to facilitate those processes, and finally also *integrate* those systems and services to create a real European virtual learning space. Within this learning space virtual mobility can take place to

serve the student better. The university will be the gateway to trans-institutional and trans-national supply. This supply must fulfil strict quality criteria and be accredited.

In these alliances, also *companies* can be involved. As a result all participants will be able to compete with new providers and overseas competitors.

Institutions in the future will also provide the *flexibility* that is requested by students and companies and that can be optimised by virtual learning environments. From the institutional point of view, flexibility has to be conceived as personalised or differentiated learning paths in terms of content, place, time and study pace.

This responds very much to the *European Commission's focus* on personalised access to, and delivery of learning as well as advanced learning environments in universities and at the workplace and in lifelong learning in general. Individuals will be able to maintain their lifelong personal learning plan and continuously adapt it to new needs in competence, knowledge and skills development.

Quality assurance and accreditation will be conditions to be successful and even to be recognised by authorities and stakeholders in general.

4. Developments of e-learning and virtual education in the universities

e-Learning and virtual higher education evolved in Europe. This was mainly due to the initiatives taken by the *universities*, many times with the support of the European Commission (Education and Culture, Information Society technologies) and national authorities. They developed *good practice* with regard to building the necessary technological infrastructure within the universities, in many cases broadband facilities, accessible by all students from on campus facilities or from their room; the installation of electronic learning environments with provisions for thousands of courses on all levels; new types of tutoring and monitoring students; campus management systems that fit flexible curricula; new pedagogical approaches often supported institutionally; and staff training targeted to e-learning provisions.

By nature, *open and distance learning universities* were forerunners in this process, certainly in the context of lifelong learning. They always had to organise education essentially through media (mainly printed courses, broadcast, satellite, video, audio, internet,...) and using a limited life interaction as is the case with regard to virtual learning. They have a tradition in research and development with regard to virtual learning. They are large scale providers that had already to overcome technological as well as organisational and technical problems associated with e-learning. They have more experience with regard to lifelong learning. They have closer links with business/private sector, both to develop e-learning systems and tools, and as clients. They invested more than other universities in technology enhanced learning.

Beyond this, e-learning has been strongly developed in *companies*, often entirely integrated in the workplace. It has become a cornerstone in human resources development and contributes to the knowledge management of the enterprise.

Virtual learning is a *driver for innovation* in higher education institutions, but also in other organisations.

In any policy, bottom up processes are the basis for change.

But still, there is not enough of a strategic and systemic approach, there is not enough integration between institutions and systems in terms of standards and interoperability. The minimal educational requirement for electronic environments should be better defined and implemented. Still, e-learning did not boost in the educational system like as ICT based activities in other sectors of society (e-commerce, e-health,...). Scalability and diffusion are not sufficiently achieved. Also, core transferable pedagogical models have to be developed, for example to link research and education, to deal with large groups and to involve new target groups. Lifelong learning still is a burning issue in practice. Organisational problems need to be solved. Finally, there is a huge need for staff development.

5. *Inter-institutional developments*

At the *inter-institutional* level, important initiatives are taken concerning learning platforms and open sources, offering courses/curricula and tools for e-learning (tutoring, assessment, course development). Also, with regard to an intelligent course finder progress is made, fitting its course search to the needs of a student or company. Standards for technological applications in education are designed and discussed on international forums. The same is true for quality assurance and quality standards and for accreditation.

At the national level, all these developments are converging into national or regional virtual or digital universities such as in Finland, Sweden, England, the Netherlands, Germany, Italy, etc..

Beyond this, *interesting experiments* are going on with international virtual seminars and blended international master courses, offering multi-angle and multi-cultural learning experiences to students and preparing them for international employability.

Although learning is primarily based on the interaction between the learner and teaching staff in an institution, a *European learning space* will support both the institutions and the students. It will be based on the institutions and on inter-institutional co-operation and agreements.

6. *Research and development with regard to e-learning*

Universities are engaged in multiple research and development issues about e-learning. Putting present state of the art research in a future perspective, the eLearnTN (thematic network for e-learning, 5th Framework) has developed a roadmap for research. On request of the European Commission, it also has extracted *21 most relevant research lines for the future*. Some answers will affect operational practice only within five or ten years.

These questions refer to:

- *pedagogical issues*: peer to peer learning, evaluation of success and dropout of learners; roles for the students, contents and technology to promote knowledge sharing; virtual mobility and integration of the curriculum; added value of e-learning; reuse of content and pedagogy in an efficient and effective way; adaptation of the curriculum to take into account the continuous creation of knowledge in research and in society; personalisation: tailor made for the training needs of the individuals; encourage empowerment for lifelong learning

in an e-learning context; the skills and resources needed to design materials and activities.

- *organisational issues*: organisational change within higher education institutions; formative design of e-learning environments and contents (user-led approach); integration of personal knowledge systems in organisational knowledge systems; shared repositories of learning resources/development of content/courses in a collaborative way; understanding of the context in which e-learning is taking place; quality of e-learning provisions; identifying key features of best practice in e-learning and investigating their transferability and scalability; ubiquitous access to e-learning provisions for everyone; metadata, semantic technologies, LMS, to facilitate the flexible construction of personalised learning.
- *legal and business issues*: intellectual property rights; business models for higher education e-learning actors.

EADTU supports these questions, to be submitted by the eLearnTN Network to universities for further consideration. The EADTU Board will discuss these questions in a perspective of building synergies between institutions.

7. The Bologna process: Future developments with regard to e-learning and virtual learning in the context of lifelong learning

In 2002, the EADTU members agreed on a common action, called e-Bologna. This is to be seen as *the umbrella for collaboration and joint projects between universities*, facilitating the Bologna process by building synergies with regard to virtual learning. It will contribute to the Bologna aims of mobility; broad access to higher education and competence development in a context of lifelong learning; course and curriculum co-operation in the perspective of large diversity of provisions, fitting to the need of students and society; and the international attractiveness and competitiveness of European universities.

The European Higher Education Area will be supported by a *European Virtual Learning Space* to achieve these Bologna objectives. This European Learning Space will rely on institutions as core agents, responding to the needs of students and society. It includes a dimension of regional development, but supported by national and European synergies.

At the institutional level, virtual education/e-learning will support the Bologna goals and objectives essentially through i.e.:

- *Giving broader access* to educational and training for larger numbers of students from anywhere in a lifelong learning context. This includes an international outreach, as well as social inclusion at the regional level or access from home and work through internet/broadband;
- *Diversifying courses and programmes* according to niches/strengths, and *diversifying educational methods*;
- Creating new learning opportunities for students and a broader offer of courses by the institutions through *virtual mobility*;
- Reconciling *mass higher education and personalisation* through *flexibility* in terms of content, pedagogical approach, combination learning and work/home, and study planning;

- *Building on the unique potential/added value of e-learning through new pedagogical models* (peer to peer learning, learning communities, personalisation; learning with multiple values) that enhance the quality and effectiveness of learning;
- Linking *research and learning* better through a constructivist educational approach, using multiple/distributed resources and more individualised interactions (peer to peer, peers to staff)
- Professionalizing *multimedia course and curriculum design*;
- Monitoring the learning process by new types of *assessment*;
- Creating possibilities for (*international*) *course/programme collaboration and joint degrees (certificates)* based on complementary expertise or mutual strengths; this co-operation can combine virtual mobility and the integration of staff and content. It contributes to the diversity of the course and curriculum supply that responds to the demand;
- Creating *international programmes* and attracting *international students* (incl. distance learning, blended learning);
- Developing distance learning for mainstream and continuing education students in a *lifelong learning context*;
- Applying built-in *quality assurance criteria and procedures* during the whole process.

At the *inter-institutional level*, collaboration between the universities and European or national authorities should solve issues such as:

- *interoperability standards* for educational infrastructure and systems;
- *the general use of ECTS*;
- *tuning specific quality criteria and procedures* with regard to e-learning (between institutions, regions, countries, agencies);
- *the international accreditation of e-learning courses* on the basis of minimum standards (consumer protection; accountability) or excellence (outstanding practice) with regard to e-learning;
- *sustainable open sources* for courses and curricula for e-learning and educational tools for e-learning environments;
- *technology benchmarking according to educational requirements*;
- *a European student portfolio*;
- *intelligent course data bases* that fit course supply and needs of students or organisations;
- *international discipline based networks* that set up virtual mobility;
- *an Observatory/Monitor to follow up core changes*;
- *joint R&D strategies*.

The European Learning Space is the vehicle to realise the e-Bologna vision. Single mode open and distance teaching universities and traditional universities will develop into

institutions for virtual learning by developing strategies with regard to virtual learning, building virtual learning services, courses and programmes. In order to be economically (financial and human resources: educational capacity) able to offer a complete course supply to students and efficient educational services, they will co-operate with European partner institutions in strategic alliances. The overall goal is to create a European e-environment for the Bologna process.

It is not just a technological, but also a *political process* involving the European universities, industrial partners, national governments and the European authorities (Council, Commission, and Parliament).

8. *The links with the stakeholders*

Of course, students are the primary target groups in higher education. However, *new stakeholders* become important, such as client organisations (public services, private companies) and regions. They receive content and pedagogical facilities from the universities.

A special case is the *e-learning industry*. They play an important role with regard to the creation of the European Virtual Learning Space. They deliver the educational technology that should be adapted to the educational needs in a course or a curriculum and to inter-institutional co-operation. This is not just about standards and interoperability, but also about the educational design of technology in order to enable complex educational processes from course design to delivery. Also communication and interaction are important dimensions especially for large groups, as are all aspects of content management in an educational and research context.

Sometimes, *stakeholders become educational and training providers* as well, jointly with universities or alone.

9. *Action lines for 2004-2005-2006*

EADTU and the members will contribute to the creation of the *European Virtual Learning Space*. With the members, the concept will be iteratively refined and concretised, based on their best practice and on research and development. They will *advise the European Commission* about developments in e-learning and about measures that facilitate that development.

e-Bologna will serve as a guideline for all EADTU networks and working groups.

In 2004, the ODL universities will design a joint approach concerning *quality criteria and procedures* for their institutions. They also will explore the suitability and feasibility of a joint *accreditation* of their virtual higher education programmes.

In 2004, EADTU and the members will deliver a report about *virtual mobility*, describing the nature of virtual mobility and its opportunities for students and institutions, ways to overcome barriers, guidelines and procedures for bilateral mobility agreements, and examples of good practice.

EADTU and the members have examined the research roadmap and the *21 research lines* for the future, produced by eLearnTN. It supports those research lines that largely contribute to the creation of the European Virtual Learning Space. They will further contribute to the validation of those lines and offer them to the European Commission for further consideration. The Board will discuss the results of the eLearnTN network and will propose further joint actions.

In 2004, EADTU Board will explore also possibilities for co-operation and joint projects with the *e-learning industry*. More specifically, these projects should support the creation of the European Learning Space in a lifelong learning context in collaboration with national and regional governments and the European Commission.

In all these areas, EADTU will promote the development of synergies between open and distance teaching universities and “traditional” universities.