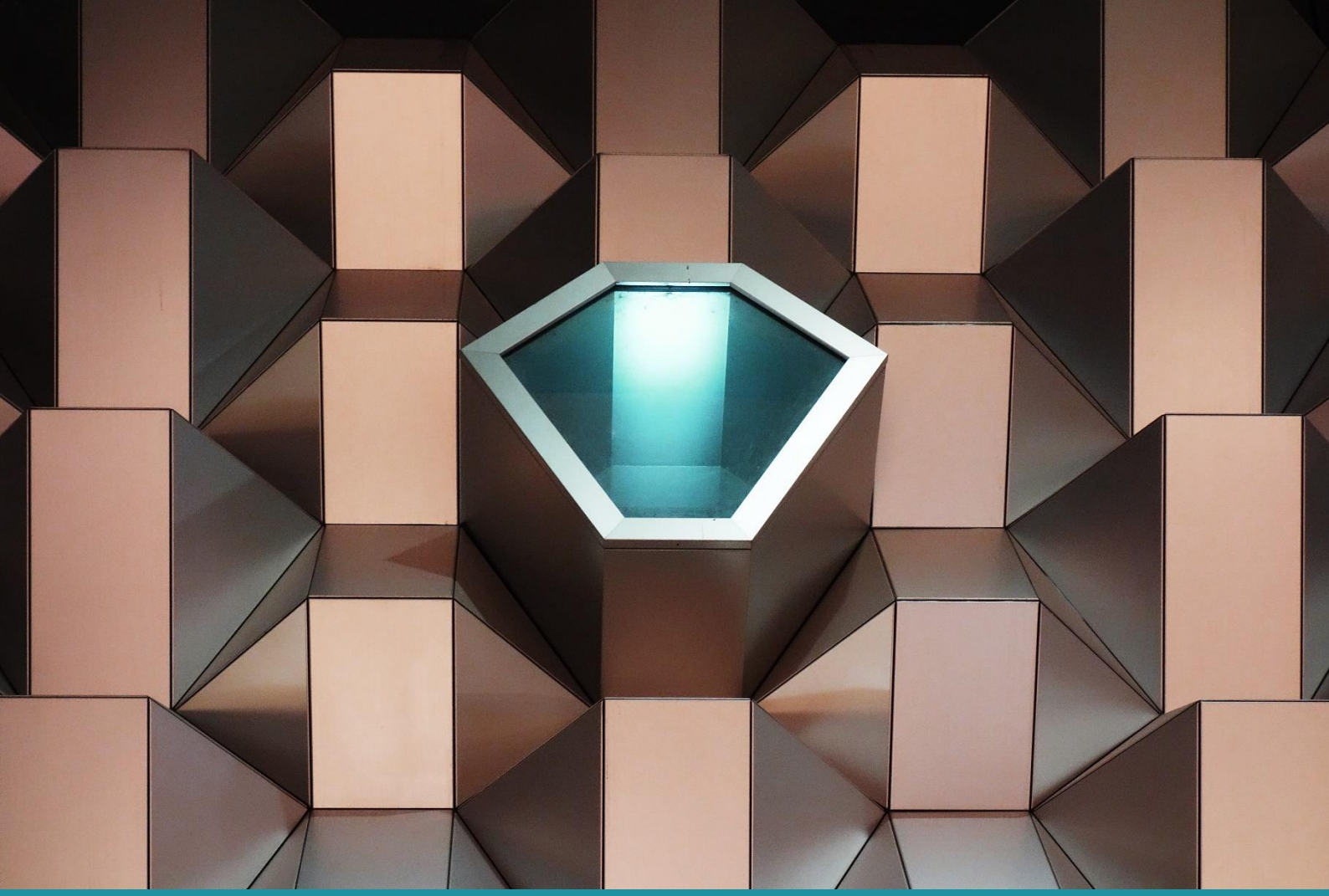

The Changing Pedagogical Landscape

In search of patterns in policies and practices of new modes of teaching and learning

Erasmus+

EADTU

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1. Main issues / summary

European societies changed and will further change, due to the impact of new technologies and through new developments in the economy and in society at large. This has consequences for universities.

An increasing number of universities and colleges offer, next to degree programmes, continuous education and lifelong learning, and open education mainly related to OERS and MOOCs. In all three areas of provision, new pedagogies have emerged, strongly enabled by the innovation/ICT push and facilitated by different support structures at various levels. Universities start to develop visions and strategies to position themselves at the national and international level in each of these areas. Universities need sufficient autonomy to determine their position in these three areas and to act flexibly and rapidly to respond to changes in society and economy. They need a vision and support as well from their governments to enable them to innovate their institutions.

This report is a continuation of the first Changing Pedagogical Landscape study conducted from January 2014-June 2015 (Haywood, Connelly, Henderikx, Weller &Williams, 2015). During 2017, EADTU members conducted a follow-up study with seven additional countries.

1.1 Summary of observations

The first CPL study (2015) study stated that "although innovation is taking place very widely across Europe, it still forms a very small fraction of total higher education provision."

This study shows that many interesting examples are emerging that potentially have increasing impact at a system level. Based on these cases and interviews, some overall trends towards change are observed. ICT-based modes of teaching and learning can solve problems higher education is facing today and will offer new opportunities for teaching and learning. They will innovate and even transform higher education provisions in the course of next years. The main observations in this study are:

Key factor: leadership and institutional strategy

It is observed that an increasing number of European universities seem to have a digital education strategy of some kind. Strong leadership and the existence of long-term strategies on digital education is mainly observed at larger institutions and in case of merging of institutions. Many other institutions practice implicit strategies based on bottom-up initiatives of staff. In some cases, strategic plans and funding by the national government are activating universities to create institutional policies and contribute to a culture of change. In addition, the existence of a dedicated open and/or online university in a country for various reasons seems to stimulate educational innovation.

Blended teaching and learning practice in degree education is increasing, primarily because of the ubiquitous presence of digital technology and the increase in digital skills of both students and teachers. Blended education is the dominating trend of innovation in on campus degree education as universities do not abandon face-to-face education for their bachelors or masters students. They begin to offer fully online degrees in postgraduate programmes for continuous education and in international education. Some universities consider open and online education as a complementary, dual-mode offering next to regular degree education.

Gradual innovation at course and curriculum level

Universities evolve to blended education in their mainstream provisions to enhance quality and to meet the needs of more a diverse and larger number of students. The attention for new teaching and

learning formats is widespread. In practice, the use of new pedagogies is increasing but not dominant in on campus education.

Teachers or small teams, eventually supported by institutional policies and strategies, mainly drive new modes of teaching and learning at the course level. The focus of this development is on activating and engaging students in a teaching and learning process through a sequence of well-designed learning activities. It is more on quality and less on technology, increasingly moving away from a teacher-focused to a student-focused approach.

Innovations of curricula are process driven (related to quality, flexibility, accessibility) and/or are a result of closer collaboration or even mergers. Many universities organise dual mode blended or online education provisions. By dual mode education, universities extend the reach-out a curriculum to all regions in a country and students can choose between different modes of learning (face to face or online), while the requirements and examinations remain the same. In addition, curricula are also innovated by the use of OERSs (and MOOCs) supporting blended and online programmes, joint degrees with elements of online and distance education and in some cases development of complete online degree programmes. Online education is most used in master programmes with an international outreach and increasingly in continuous education, adopting a modular structure.

In some countries, it is observed that an increasing pressure occurs to have more flexible offerings for part-time on campus degree students, combining work and study and for non-traditional students. This gradually will push universities to adapt new pedagogies with a larger online component in the blend to make degree programmes (and courses) more flexible and accessible for all kind of students.

Many incentives for digital education

The cases in this study reveal numerous positive incentives for stimulating innovation in education. Next to an institutional strategy plan on education and leadership for an innovative climate, the development of expertise on blended teaching and learning within the institutions and the continuous development of staff are seen as essential incentives.

The examples of various European countries illustrate that most universities support teachers' digital, educational and technological competences. Dedicated teaching and learning support services play a pivotal role in the support structures. In many universities, the support structure has a strong technological and digital competence component and is organised around the central virtual learning environment. The case studies in this study show an increased interest in the pedagogical and organisational competences related to blended and online learning and teaching. The training of staff and support structures is frequently organised at an institutional level. Some support structures for new modes of teaching and learning are even organised at cross-institutional level.

Increased (scalable) continuous education and continuous professional development offerings

Many face-to-face universities consider continuous education / CPD as a complementary offering, next to regular degree education. Online and open education are seen as modalities that provide flexibility to the educational system to off campus students. Online education is seen as a promising field for universities for increased offering for new kind of students related to lifelong learning and CPD. Online short-term degrees are created for learners at work, responding to their needs. Often, they are integrated in a modular system with consecutive degree levels. Some universities even expect that the number of students in CE / CPD education will overgrow those in degree education.

MOOCs as an enabler for innovation

MOOCs are offered online and for free, providing massive and open access to learning opportunities for all. Next to open educational resources, they are an instrument to open up higher education to the wider public.

In many universities, the development of MOOCs by key staff resulted in broader innovations with regard to blended teaching and learning at the bachelor and master level. MOOCs are a lever for innovation in mainstream degree education. Short degrees and even (post-graduate) master programmes are also linked to MOOCs and online courses to be paid for, which can be valorised in broader (master) degree programmes. This also the case with micromaster, nanodegree and other flexible programmes based on MOOCs.

However, not all universities have a positive experience with MOOCs. Higher education institutions only have a significant MOOC offering (>10) if a dedicated institutional strategy exists for MOOCs and/or for open education in general. Moreover, the wide-scale production of MOOCs by universities seems to be related to the existence of national initiatives / funding schemes. Otherwise the MOOC production is a bottom-up approach and exemplary.

Also, the actual use and production of OERS are strongly related to initiatives from individual teachers. Dedicated OERS strategy or policy plans are not wide-spread. If there is an institutional or national policy, OERS are embedded in wider strategy related to for example to open access, open education and open science policies.

Increasing internationalisation of higher education

Online and blended education is increasingly changing the landscape of internationalisation and student mobility. Online education has no national boundaries as MOOCs amply demonstrated. Blended and online international education adds scale, flexibility and quality to institutional initiatives. It can range from virtual seminars and course mobility to short degrees and blended online master programmes and it can involve multiple universities in a network simultaneously.

Virtual mobility is breaking through in all study domains as well. New modes of teaching and learning increase the possibilities of international cooperation in partnerships and networks.

A systematic approach in international course and curriculum design and development will lead to patterns of good practices and established innovative pedagogies in the field of international collaboration and mobility.

Only few countries have a dedicated action plan on (online) internationalisation at a national level.

Important role for governments

The role of national governments is mainly to create favourable framework conditions to capitalize on the opportunities of digital education in higher education.

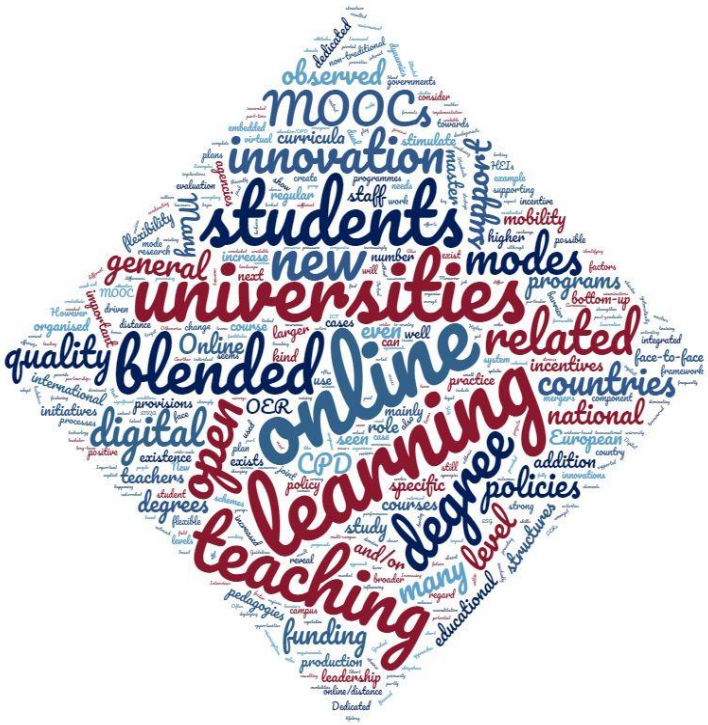
Governmental policies have a system impact on the uptake of new forms of education. This impact is even strengthened, when they are supported by massive governmental actions and operations, e.g. with regard to educational excellence funding, platforms for curriculum collaboration, sharing resources (e.g., OERS) or MOOCs delivery. Mergers of institutions are a momentum to develop new policies and strategies and to implement large scale-change across participating institutions

In many countries, the mature uptake and structured implementation of online and blended education is still hindered by conflicting regulations. These can be related to funding, quality assurance, performance agreements, requirements for study-time and -place, etc.

Most funding for new modes of teaching and learning is embedded in specific governmental policies. Some European countries have massive funding schemes for system level change and educational innovation. Of course, this corresponds with strong governmental policies. In some countries, such governmental funding schemes are absent and HEIs find resources through participation in European projects.

In all European countries, quality assurance is in place in institutions and quality assurance agencies. The roles of quality assurance agencies and accreditation agencies differ from each other. However, specific guidelines and criteria for new modes of teaching and learning are not yet adopted in most internal and external quality assurance systems. Blended and online education are often assessed with the same criteria as for face to face education, although practice is different. Recently, a working group of ENQA looked into these new developments and how new modes of teaching and learning have implications for the European Standards and Guidelines (ESG), in particular the role of agencies in quality reviews for blended and online / distance programmes.

In general, it is concluded that the uptake of new modes of teaching and education is accelerating although many challenges still exist. ICT facilitates innovations in degree education, both at course and curriculum level and at multi-campus and international learning, continuous education and CPD offering, open education by OERS and MOOCs.



1.2 Summary of recommendations on new modes of teaching and learning

UNIVERSITY STRATEGIES FOR DIGITAL EDUCATION

- ✓ **Develop leadership and an institutional vision and strategy** for blended learning and teaching for on campus degree education
- ✓ Assure that **leadership of innovation in education is shared** at all levels: the entire Board; the faculties, deans and programme directors; teaching staff at the level of the subject areas involved.
- ✓ Define **institutional objectives and innovation plans** for new technologies with impact on the course and curriculum level, in line with the common agenda at national level and the ambitions of the Bologna process (Paris Communiqué, 2018).
- ✓ **Develop strategies for continuous innovation** in the institution, involving digital education in the core educational areas of provision in higher education:
  - enhancing the quality of education by blended degree programmes for increasing numbers of students;
  - the extension of scalable and flexible online continuous education and continuous professional development;
  - and open education by OERSs and MOOCs
- ✓ Design and adopt **a joint educational and innovation strategy**, extending the physical learning environment with a virtual space, where every staff can develop enriched learning activities for the students.
- ✓ **Translate institutional visions and strategies at the curriculum level**, while capitalizing on the expertise and energy of teaching staff / looking for a balance between student numbers/access, quality and cost-effectiveness
- ✓ A **faculty strategy should embrace mainstream degree education, short degrees, continuous education and CPD; and open education** incorporating the characteristics of a variety of target groups

IMPLEMENTATION OF NEW MODES OF TEACHING

- ✓ Promote **a joint institutional concept on learning and teaching** around a **central** principle, e.g., “active learning”, “guided independent learning” or “open-space learning”.
- ✓ Look for the **right balance between face-to-face and online education**. This blend can be very different for the respective programmes: bachelor level, master level, postgraduate level, short degrees, non-degree education.
- ✓ **Stimulate staff and students by institutional drivers**, stimulating a culture of change and a mind-set to support the institutional strategy by
  - facilitating a bottom-up approach from teachers themselves and embedding these initiatives within an institutional strategy plan
  - creating space for experimenting with blended and online learning and teaching
  - encompassing quality in education / integrating digital education in the quality assurance system of the university;
  - recognizing and reward good practices in education with regard to career development; taking into account shifts in the distribution of the workload of staff

- activating (temporary) innovation frameworks project funding (e.g., grass-root funding, seed money, most innovative course development projects) in context of institutional strategy and within joint institutional concept
- creating rewarding business models in the framework of extension schemes for continuous education and open education
- working with multi-annual operational plans including designing and developing new modes of curricula. Include that the design and development of online/blended courses require more time than implementing it. Re-allocate resources and tasks to cope with increased workload during the development process of a course; make advantage of scalability of the delivery of digital education.

✓ **Develop *enablers*, facilitating innovation processes** as
- showing leadership with the support of the entire board and share leadership with all decision levels of the university. Appoint a vice-rector, accountable for digital education;
- organising continuous professional development of staff, in particular related to course and curriculum design and digital and media competences;
- creating awareness about the gap between current practice and advanced course design/maturity in blended learning, demonstrating the benefits and opportunities of blended learning, based on reports of good practice, reports on concepts, theories and evidence on course design;
- sharing patterns of good practices in blended and online education within the institution and with partner universities in networks;
- organising educational and technological support services for both staff and students (educational and technology support);
- creating staff communities and course teams for blended and online learning around various subject areas;
- Organise institutional evaluation to assess if the (institutional) objectives are reached and measure the impact of innovation and new pedagogical models, incorporating institutional visions and strategies;

✓ Organise institutional evaluations and research on the design, implementation and effects of blended teaching and learning by the teaching and learning department

✓ **Collaborate in networks or consortia** in order to build synergies with regard to content and pedagogies and exchange staff and students accordingly. Online spaces will make this collaboration scalable, intensive and cost-effective. Students will benefit from enriched content and new competences which can't be delivered within the walls of a single university.

RECOMMENDATIONS FOR TEACHING STAFF

✓ Invest in **knowledge about the needs and characteristics of various (new) target groups** in your subject area and how redesign of curricula can accommodate those.

✓ Bring in **your experience and expertise** in the wider context of the curriculum

✓ **Create networks with peers** in sister programmes and collaborate at the subject level. This will be more structured when university networks operate.

✓ **Share practices on curriculum design and share educational resources** (e.g., course material, multimedia products, assignments) in your subject area and in the broader educational community of university networks, the country and internationally.

- ✓ **Organise research on these practices** on curriculum design - increase your research output related to educational innovation.
- ✓ Consider **each course as a unique teaching project**, requiring specific approaches according to content, level and student characteristics
- ✓ Apply for **additional funding for course development / innovative projects**. Make us of existing local, nationally or internationally funding schemes.
- ✓ **Participate in international expert groups** and in research and innovation
- ✓ **Increase research output** related to those course development / innovative projects. Publish good practices regarding blended and online learning and teaching in this subject area
- ✓ Stay up to date with evolvements in blended and online learning and teaching

CONTINUOUS EDUCATION AND CPD

- ✓ **Develop a vision on continuous education and continuous professional development** to meet the needs of your alumni and other professionals.
- ✓ **Appoint a vice-rector** for the development of the area of continuous education / continuous professional development and support massively this leadership.
- ✓ Develop institutional **policies and strategies for the large-scale development of continuous education / CPD** in the university, using blended and online teaching and learning formats
- ✓ **Create synergies, both organisational and at course / module level**, between mainstream degree education, open education and online provision of continuous education / CPD making maximise use of opportunities of digital education
- ✓ Integrate online courses for continuous education and CPD in modular programmes, leading to qualifications which fit into the European Qualification Framework
- ✓ **Create flexible and scalable offerings** in continuous education and continuous professional development, making use of digital education.
- ✓ **Create an attractive business models** for staff to develop continuous education / continuous professional development, including online short degrees
- ✓ **Invest in a university extension structure**, serving external students and supporting the delivery of continuous education and continuous professional development programmes
- ✓ **Collaborate with external stakeholders** for the development and delivery of continuous education and continuous professional development programmes.

OERS AND MOOCs

- ✓ **National or regional (language-bound) policies and strategies are needed** in order to stimulate and support universities to develop OERS and MOOCs for open education. This might include the establishment of new platforms for the delivery of MOOCs and for creating a dialogue with stakeholders and users in society;
- ✓ **Universities should develop a framework for open educatio**n (OERS, MOOCs), next to continuous education and degree education, each area interplaying with the others. This framework should stimulate and support teaching staff to develop MOOCs (technology, innovative pedagogies);
- ✓ **Develop support structures and incentives for teaching staff** to share course(material)s and to publish and re-use OERSs (and complete courses);

- ✓ **Embed OERS in an overall strategy** related to open education and open access/open science policies;
- ✓ **Collaborate cross-institutionally** to ensure sustainable business models for OERS and MOOCs
- ✓ **Use MOOCs in international collaboration and virtual mobility schemes**;
- ✓ Universities and quality assurance agencies should **collaborate with regard to quality benchmarking** good practices with regard to OERSs and MOOCs;
- ✓ **Capitalize on new developments in e-assessment** (e.g., TESLA) in order to make assessment more reliable and valid as a condition for crediting and recognizing MOOCs;
- ✓ **Develop collaborative projects** for opening up MOOCs and digital education provisions (including OERS) for alumni and for the EU labour market, e.g. approaches to the co-creation of MOOCs for continuous education/CPD, specific delivery modes of MOOCs by employment services, professional organisations and within companies; the exchange, translation and localisation of MOOCs for implementation in different language areas, etc.;
- ✓ **Increase the accessibility and visibility of MOOCs** at the European level;
- ✓ **Evaluate OERS and MOOCs** on their effectiveness and impact in all areas of educational provision.

NEW MODES IN INTERNATIONAL EDUCATION

- ✓ National internationalisation policies and strategies for higher education should strengthen the policies of the European Commission with regard to "European Universities" as alliances to enhance the quality of higher education and to harness students with an international awareness and with international competences. Digital education as a complement to physical mobility will support this process and intensify the international learning experience for all students. National strategies should build a framework to promote, stimulate and activate internationalisation in universities.
- ✓ National policies should enable domestic financial support to be portable for credit and degree mobility.
- ✓ Universities should develop leadership with regard to the internationalisation of education and share this at all levels of the institution, meeting the needs of students studying in an international environment and developing an international citizenship.
- ✓ At the institutional level, international education should be part of mainstream course and curriculum design in education. Support should be given to programme coordinators and teaching staff to develop an international dimension in education, facilitating collaboration in broader networks and consortia. This collaboration and networking will be facilitated by innovative international pedagogies.
- ✓ International relations offices should extend their activities to international curriculum and course development in connection with teaching and learning support services. Especially, they should focus on international collaborative pedagogies and innovative mobility formats
- ✓ Digital internationalisation pedagogies can be blended or completely online, depending on educational design, taking into account the quality of the learning activities and the needs for flexibility and scalability.
- ✓ Benefit from the opportunities with regard to the granularity of digital education. Collaboration and mobility is possible for all organisational units: learning activities, modules,

courses, MOOCs and short degrees, degree programmes (networked, joint) and for all qualification levels: foundation, bachelor, master and doctorate.

- ✓ Benefit from specific features of digital education which add to the quality and intensity of education, e.g. inquiry learning activities on the internet, communication with staff and peers, learning communities, e-assessment and feedback.
- ✓ Benefit from the flexibility of digital education in international education: next to synchronous, also asynchronous formats, taking into account different time zones and conflicting course tables; adaptiveness to different prior knowledge levels.
- ✓ Benefit from the scale and cost-effectiveness of digital modes of teaching and learning in international education. The larger the number of students, the lower the cost per head (lower variable cost). As a consequence, transnational (blended and) online education enables universities to multiply international student numbers while keeping quality under control
- ✓ Benefit from the opportunities of networked and joint educational initiatives by digital education, involving multiple campuses simultaneously, e.g. in virtual seminars and think tanks, or in joint curricula in the framework of the "European universities" initiative.
- ✓ Organise on site staff training, bringing in external expertise and stimulate staff to experiment with MOOCs and online short degrees along their research interests.
- ✓ Create subject area communities and share online course materials when taking international academic initiatives.

RECOMMENDATIONS FOR GOVERNMENTAL POLICIES

- ✓ Create policies and strategies with regard to the development of these three areas of provisions. Make the structures of these areas permeable in order to valorise and maximize innovation in all three areas;
- ✓ Organise a national strategic working group/council/agency involving all stakeholders (university, students, social partners) and experts in order to capture the state of affairs, current needs and opportunities of innovative modes of teaching and learning in higher education;
- ✓ Support online platforms for sharing online courses and curricula, including online short degrees, OERS and MOOCs. Organise access to these facilities to learners and to the labour market;
- ✓ Define the funding statute for full-time, part-time and online/distance students on an equal basis to stimulate innovation and lifelong learning
- ✓ Develop drivers for innovation and change, encouraging and accelerating innovation, e.g. by (project) funding schemes and career development incentives;
- ✓ Stimulate or organise continuous professional development of teaching staff and stimulate institutional leadership for continuous innovation.
- ✓ Take into consideration the particularities of digital learning and adapting in quality assurance and accreditation systems, stimulating educational innovation in universities by the increased use of technology in teaching and learning;
- ✓ Stimulate institutional evaluation and research of new modes of teaching and learning.

These developments should be stimulated and activated by national governments as part of the *Bologna Process* in order to accelerate strategic efforts and developments in all European countries in a lifelong learning perspective. Member states have to align and engage in order to respond to the needs of society and to harmonize provisions and qualifications.

At the European level, the funding inequality of higher education systems a barrier for an equal development of universities should be on discussed at the highest level. It should be considered that the structural funds are used to support the innovation agenda European-wide.

2. Introduction to Changing Pedagogical Landscape

In European universities three areas of provision emerge: degree education as the backbone of a university; continuous education and continuous professional development (CPD), which activity is going to gain importance quickly with number of participants that probably will exceed the number of degree students; and recently forms of open education like OERS and MOOCs. Universities attempt to define policies and strategies their profile in these areas. Blended and online systems in all three areas are important to accelerate innovation and to keep pace with the needs of learners of all ages and of society[1]. Digital modes of teaching and learning can solve problems higher education is facing today and will offer new opportunities for teaching and learning in each of these areas. They will innovate and even transform higher education provisions in the course of next years:

- Blended degree education will raise the quality, accessibility and efficiency of degree education, facing large numbers of students and lower staff/student ratios.
- Blended and online education will upscale the area of continuous education and continuous professional development by offering flexible courses with a large outreach responding to the needs of learners at work, who face longer careers and career shifts.
- Recent forms of open education related to OERS and MOOCs are offered online only, providing for free massive and open access learning opportunities for all, promoting engagement in the knowledge society.

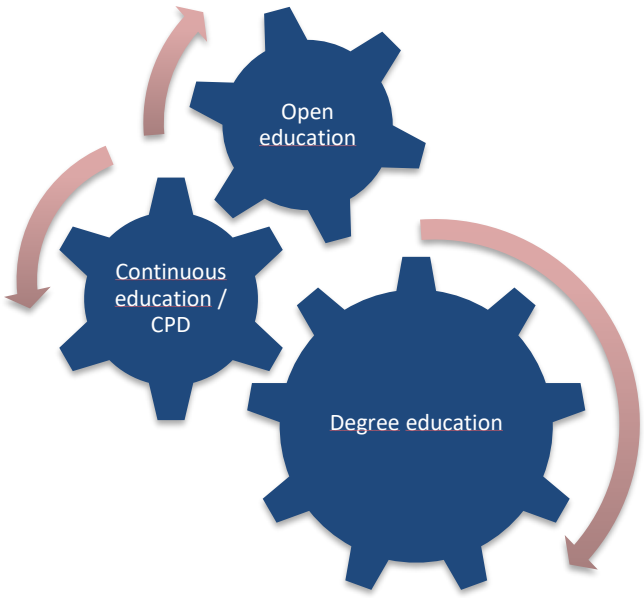


Figure 1: Three emerging areas of provision in higher education

These areas are complementary to each other and to some extent interwoven (Haywood, Connelly, Henderikx, Weller &Williams, 2015[2]). Although these provisions are different in terms of target groups and business models, universities create synergies between them. New ICT-based modes of teaching and learning support these provisions.

[1] See also for example three priorities of Digital Education Action Plan (EC, 2018)
[2] This is also referred to as CPL study of 2015, see http://www.changingpedagogicallandscapes.eu/publications/

Developments in digital education have been closely linked to wider developments in, and pressures on, European higher education. Indeed, some of the demands of governments, students, funders and employers of what sort of education should be offered by universities and colleges could not be met without deployment of technology. These developments and pressures are:

(i) *Increasing student numbers in all European countries and the need for upscaling higher education, also taking into account changing student demographics* resulting in differentiated needs for degree education, continuous education / continuous professional development and open education at different stages of life[3];

(ii) *The enhancement of quality, meeting the needs of students through student-centred and personalised research-based and/or innovation-oriented higher education[4];*

(iii) *The management of cost: increased need for efficiency while funding per student in higher education has decreased in many countries across Europe*;

(iv) New *educational opportunities of online and blended education, combining solutions for scalability, quality and cost[5];*

(v) *Widening access to higher education[6]* as one purpose of digital education as it can remove or at least minimise many barriers for regular and non-traditional target groups (e.g., disadvantaged learners, migrant students, remote areas);

(vi) *The internationalisation of higher education, organising large scale transnational education and international collaboration and mobility, promoting networking between universities.*

This report is a continuation of the Changing Pedagogical Landscapes study conducted from January 2014-June 2015 (Haywood et al., 2015). To this end EADTU members conducted a follow-up research during 2017. The objectives (or research questions) of this follow-up study are:

1. To identify the implications for *pedagogy* in higher education institutions of the most significant practices and trends in new modes of teaching and learning.
2. To complete an overview of what *government-led strategies*, policies and measures exist in the countries included in this study, to foster an increased use of ICT in higher education teaching and learning and related key aims (for example, meeting large numbers of students (scale), making education better (quality), reducing costs, widening access, delivering continuous education and open education (MOOCs, OERS).
3. To assess where the *main barriers and pinch points* exist to the effective exploitation of new learning methodologies with a particular emphasis of formal higher education frameworks of accreditation, funding and quality assurance.

[3] The Education 2030 Framework for Action, adopted at Incheon (Republic of Korea) in May 2015, recognises lifelong learning for all as one of the underpinning principles, stating that "all age groups, including adults, should have opportunities to learn and continue learning."

[4] The growing demand for more student-centred learning to replace current didactic/teacher-centric teaching is also stated in the Yerevan Communique (2015) and the Paris Communiqué (2018)

[5] Technology has enabled many universities to cope with these changes next to merges and economics of scale. Also, the Digital Education Action Plan of EC refers to the focus on implementation and the need to stimulate, support and scale up purposeful use of digital and innovative education practices.

[6] This relates to open education and the UNESCO Sustainable Development Goal (SDG) 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

4. To formulate *recommendations* for policy makers at the level of higher education systems on how to promote and harness new modes of teaching and learning to improve quality and relevance and how formal frameworks can empower and incentivise higher education institutions to exploit their potential.

The research methodology of this second CPL report is summarised in figure 2.

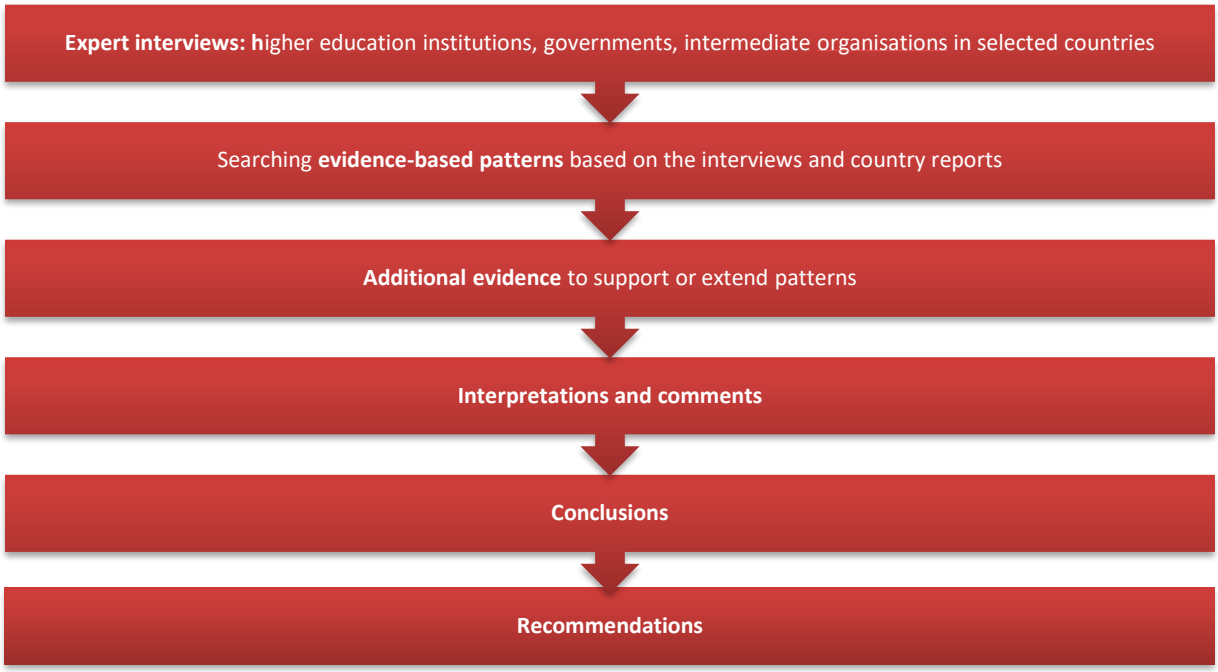


Figure 2: basic methodology applied to this CPL study

The first CPL study (Haywood et al., 2015) conducted a general desk research and in-depth studies conducted to eight European Countries (France, Germany, Lithuania, the Netherlands, Norway, Poland, Spain and the United Kingdom) next to a Delphi study. In this study, a similar approach is used but with a focus on the following seven countries: Austria, Denmark, Finland, France, Greece, Portugal and Spain/Catalonia. The research by local experts in each of these countries involved an analysis of the policies of these countries towards innovation in the use of technology and pedagogy in higher education. Some key-persons at a number of universities and students were interviewed. Also, interviews were undertaken with key informants in government, national and regional agencies and intermediate organisation. To this end, a semi-structured interview scheme with lead questions, next to reporting template was developed related to the four objectives mentioned before. The experts in each country provided an overall country report next to a summary of each interview. These reports and documents were subsequently analysed in search of evidence-based patterns on new modes of teaching and learning. Desk research together with the re-analysis of the country reports of the first CPL report were used to support or extend these patterns. These observed patterns are discussed in a wider context, related to findings of other similar research. Some overall conclusions and recommendations are subsequently given.

This report starts with observed patterns of institutional visions and strategies to new modes of teaching and learning in section 3. The implementation in mainstream degree education both at course

and curriculum level is reported in section 4. Next, section 5 focusses on continuous education/CPD and how online education is changing this education offering. New modes in open education with a focus on OERS and MOOCs are described in section 6 while section 7 elaborates on trends in international education. Overall governmental perspectives, including policies, frameworks, legal regulations, funding and the role of intermediate organisations are discussed in the section 8.

3. Institutional policies: vision, strategies and frameworks

This section focuses on the overall institutional policies related to the vision, strategies and frameworks for new modes of teaching. In this study, overall strategies supporting the continuous innovation of higher education by digital technologies and blended approaches are examined.

Based on desk research and the various country reports, effective strategies are highlighted and illustrated. The relation between institutional and governmental policies are discussed in more detail in section 8.

Cases from selected countries

The following examples in various European countries illustrate current university policies and strategies as registered in the interviews.

Finland: policies integrated in performance agreements with the government

In Finland, the overall objective of national higher education policy is to secure the competitiveness of Finnish higher education by collaboration with excellent research groups and to develop the Finnish Key Competence areas (e.g., Biotechnology, Clean Tech and ICT). As far as education is regarded, institutional strategy plans are a result of performance agreements between the Ministry and higher education institutions.

In general, the development of digital pedagogies at Finnish universities is increasing. This can be described as top-down led, as it is included in the strategic policy papers. However, innovative practical solutions usually come bottom-up from teachers, experimenting with online courses. Teachers can freely choose which teaching methods they use. They are encouraged and supported by the leadership. Good practices are shared with colleagues in different ways. Institutional strategies also increase the quality and performance of digital learning environments.

Denmark: institutional strategies for blended teaching and learning

In *Denmark*, there is a broad consensus that educational programmes should move in the direction of blended learning. Educational technology is felt to be increasingly relevant and necessary in order to accommodate students' needs. However, institutions seem to have little ambition to engage into fully online programmes or MOOCs.

Institutional strategies are considered as frameworks for local initiatives for educational development and the use of educational technology. Within these frameworks, individual teachers, improving their own teaching, drive the process of developing new pedagogical approaches. In most institutions, it is up to the teacher which teaching methods should be applied.

As an example, one of the universities went through a strategy development process, which has led to a number of guiding principles for active learning. Each faculty then developed local models based on these principles, while all teachers were expected to consider these principles for application in their teaching.

Another university is working on an institutional strategy for the digitalisation of education, at the same time expressing a respect for the individual choice and preferences of the teacher for using technology in their teaching.

Next, a university has developed a strategy promoting problem-based learning, supporting this strategy through project funding grants. Furthermore, they organise annually a local conference, presenting examples of good practice from these initiatives.

One of the university colleges in *Denmark* is working towards implementation of ICT in all degree programmes. In 2015, all educational programmes started with an annual local strategic plan for digital learning, involving the management, teaching staff and students, stimulating the use of technology by teachers and joining forces to rethink teaching design. As a result, all degree programmes today have a clear strategy on when, why and how technology can and should be used in teaching including blended and online courses, problem-based learning, the flipped classroom, peer assessment, collaborative projects and practice, etc. The plans for digital learning result also in a "map" of teaching skills regarding educational technology and teaching design. This allows the management to plan ahead and to ensure the necessary training in new pedagogies, dealing with technology.

France: governmental policies and mergers stimulating the dynamics of innovation

In France, many new opportunities have been arising through restructuring the university landscape by mergers. This merging dynamic has two consequences on the approach to teaching: favouring collaborations between faculties and breaking down traditional walls between different teaching methods.

These mergers are stimulated by massive funding of the governmental excellence initiatives (IDEX)[7] of the central government (See also section 8).

The University of Aix-Marseille (AMU) was one of the first to be successful with the approval of AMIDEX as its excellence initiative with an additional funding of 26 mio per year[8]. The university promotes active teaching and favours collaborative educational experiments and practices. It is stimulating a blended/hybrid education approach for its curricula, enriched in-class learning, participation in open and distance education (FOAD, formation ouverte et à distance) and in international education.

Also, in the Lille Nord Europe University[9], the merger is supported with funding from IDEX. The new university aims to become a global standard with regard to new pedagogies based on digital technologies within a period of 10 years. It recently opened a teaching support facility

[7] http://www.enseignementsup-recherche.gouv.fr/cid51351/initiatives-d-excellence.html
http://www.enseignementsup-recherche.gouv.fr/cid101570/pia-1-initiatives-d-excellence-idex.html
[8] Amidex and the Foundation http://amidex.univ-amu.fr/fr/accueil
[9] https://ged.univ-lille3.fr/nuxeo/nxfile/default/f60be805-411a-40c4-8948-6188312416eb/blobholder:0/2016-11-28-IDEX_ULNE_Dossier_Presse_Numerique.pdf

for digital content, the LILLIAD Learning Center Innovation[10] in a strong partnership with KU Leuven (Belgium).

Portugal: integrated institutional policies to be built

In *Portugal*, traditional (face to face) universities are interested in new teaching practices and develop good practices, but most of them don't have a broad institutional strategy for digital education. Most initiatives are isolated and based on the voluntarism of some teaching staff and hardly represent an integrated strategy for online teaching and learning. In general, universities haven't a consistent policy on digital education, as different concepts and practices coexist, even within the same educational unit.

The mission of the open and distance university in *Portugal* (Universidade Aberta, UAb) is different from other Portuguese universities, as it is organising open and flexible distance education for adult students mainly. UAb is currently a fully online university, despite the legal gaps in the education system regarding online and distance education. Hence, the campus is virtual and teaching and learning are online. The central pedagogical model is student-focused and it emphasizes collaborative work. The added value and uniqueness of UAb is related to scalability, differentiation and inclusion. By the quality of its pedagogical model, UAb has become a partner of other universities, in particular with regard to educational and technological innovation and to course development in some subject areas. Given its mission and teaching model, UAb promotes and leads research in the field of open and flexible distance education and online teaching and learning.

Austria: looking for institutional synergies

In Austria, the spectrum of online and blended education is quite diverse. The Johannes Kepler University of Linz (JKU) is organising large programmes in distance education through the Center for Distance Studies Austria[11] in close cooperation with FernUniversität (FU) in Hagen, Germany. In other faculties, online and blended education is emerging bottom up, although no comprehensive strategy for blended and online education is developed yet. Nevertheless, the university is working on it. Twice a year, there are internal calls for funding for developing online and blended learning. The goal is to align those different bottom-up approaches to a more synergetic co-operation, both in technical and didactical terms. A major result should be the establishment of one organisational unit combining these efforts.

In 2014, University of Graz (KFU) developed an e-learning strategy[12] for the period 2015-2018 under the coordination of the Academy for New Media and Knowledge Transfer[13]. Some measures have already been implemented, other measures like the development of an OERS strategy are still open, due to time and resource restrictions. Some are incorporated in the performance agreement of KFU negotiated with the Ministry for 2016-2018 like the training of

[10] https://lilliad.univ-lille.fr/
[11] http://www.fernstudien.at/
[12] https://akademie.uni-graz.at/de/die-akademie/e-learning-strategie
[13] https://akademie.uni-graz.at/en/

e-tutors, the development of MOOCs on the leading iMOOCs platform in Austria, and the development of an OERS strategy. In new curricula and courses, e-learning can be easier developed than in existing programmes where structures and practices are more difficult to change.

Catalonia: experimenting with innovation

In Catalonia, the Universitat Autònoma de Barcelona (UAB) and the Universitat Rovira i Virgili (URV) have no institution-wide strategy for blended or online learning. Both UAB and URV used MOOCs to improve teaching, but they concluded that producing a MOOC is too expensive for the benefits they provide in their case. URV is trying now to implement a standardized approach to blended and online course production across the institution.

It is important to highlight the role of Universitat Oberta de Catalunya (UOC) in the Catalan university system. UOC is the only fully online university. Historically, it plays a role of a catalyst for innovating teaching and learning in higher education through online education in other universities of Catalonia. Most of UOC online tutors are also teachers at other universities, increasing the expertise on online education in the entire Catalan system. Some online programmes in UOC are joint programmes shared with other Catalan universities. This avoids the iteration of some programmes in more than one university. Sometimes, two versions of a course are addressed to different target groups of students in dual-mode (face-to face or blended, and online). At the end, the Catalan system offers complementary and balanced provisions to students.

General observations: patterns in innovation

Based on these and other examples of the first CPL 2015 study (Haywood et al., 2015), the following observations are drawn:

- Progress is made with regard to the development of institutional policies and strategies, compared with the CPL 2015 findings. Some universities have formulated explicit documents, others practice implicit strategies based on bottom-up initiatives of staff.
- The institutional dynamics of innovation is coming from:
    - Looking for synergies, based on bottom-up processes
    - Leadership and explicit strategies meeting bottom-up dynamics
    - New dynamics resulting from institutional mergers, leading to transversal collaboration and priorities
- In some cases, strategic plans and funding by the national government is activating universities to create institutional policies and contribute to a culture of change
- National open and distance teaching universities influence other universities as they collaborate in some subject areas as well as in research. Staff of many universities has fulfilled tasks in the distance institution as a tutor or a teacher. The existence of a dedicated open and/or online university in a country seems to stimulate educational innovation at the system level.

Comments

The goal of blended and online education is developing more effective pedagogies; providing an increased convenience and access to learning provisions; and obtaining an increased cost-effectiveness (e.g., EADTU&ENQA-PLA, 2017).

Blended education is the dominating trend of innovation in on campus degree education (see also section 4). In addition, digital education facilitates also other core developments in higher education, the development of large-scale continuous education and CPD offering, the development of open education by OERS and MOOCs (see section 5 and 6, respectively), and international curriculum collaboration and mobility (section 7).

The development of high quality blended education requires a strong institutional leadership and an academic culture in favour of innovation. Enablers for this development are amongst others: institutional leadership, stimulating continuous innovation; an appropriate course design, avoiding many misconceptions on blended education; continuous professional development of teaching staff; technologies for new pedagogies; technological and pedagogical staff support; course collaboration between staff, e.g., course teams or subject area groups; sharing of course material; and the institutional evaluation of innovation (e.g., Laurillard, 2012).

Surveys of university leaders (e.g., Gaebel et al., 2014) show that the most common reasons for introducing technology into courses and programmes are: to give greater flexibility to students and to teachers, in the time and place that teaching and learning takes place; to enable more flexible curricula; to enhance quality, especially of on-campus education; to cope with more students, and with more diverse students; to respond to demands from government or employers for more relevant education; to maintain parity with peers, especially internationally; and to reach new audiences of learners, sometimes with new income streams as an added incentive. In the most recent EUA study (Trends 2018, preliminary results), 92% of the respondents report an "increased attention to Learning and Teaching throughout the institution" and 87% stated and "increased acceptance/more strategic approaches to e-learning"[14].

In the *Paris Communiqué of 2018*[15] of the Council of Ministers of Education on the Bologna Process, universities are called on integrating digital education in their provisions:

"Digitalisation plays a role in all areas of society and we recognise its potential to transform how higher education is delivered and how people learn at different stages of their lives. We call on our higher education institutions to prepare their students and support their teachers to act creatively in a digitalised environment. We will enable our education systems to make better use of digital and blended education, with appropriate quality assurance, in order to enhance lifelong and flexible learning, foster digital skills and competences, improve data analysis, educational research and foresight, and remove regulatory obstacles to the provision of open and digital education. We call on the BFUG to take the issue of digitalisation forward in the next working period".

And:

[14] See: https://www.slideshare.net/EurUniversityAssociation/trends-2018-report-preview-results-93104593
[15] See: http://www.ehea2018.paris/Data/ElFinder/s2/Communique/EHEAParis2018-Communique-final.pdf

"A wide range of innovative learning and teaching practices will encompass the further development and full implementation of student-centred learning and open education in the context of lifelong learning. Study programmes that provide diverse learning methods and flexible learning can foster social mobility and continuous professional development whilst enabling learners to access and complete higher education at any stage of their lives".

Several initiatives stimulate the development and implementation of institutional strategy plans and leadership on new modes of teaching. In Germany, the Hochschulforum Digitalisierung[16], in context of peer-to-peer consultation sessions, provides yearly six universities with individual support for their strategy development. The EMPOWER programme[17] of EADTU offers on-site collaboration with experts in online, open and blended education. By sessions on-site within the direct context of the university, the institutional needs for expertise are identified in an institutional profiling exercise. The programme of each on-site visit is therefore tailor-made in accordance with the priorities based on a dialogue with relevant experts en includes management and expert meetings on innovation and transformation, strategy meetings, training sessions and developing an institutional roadmap for change and implementation.

Recommendations

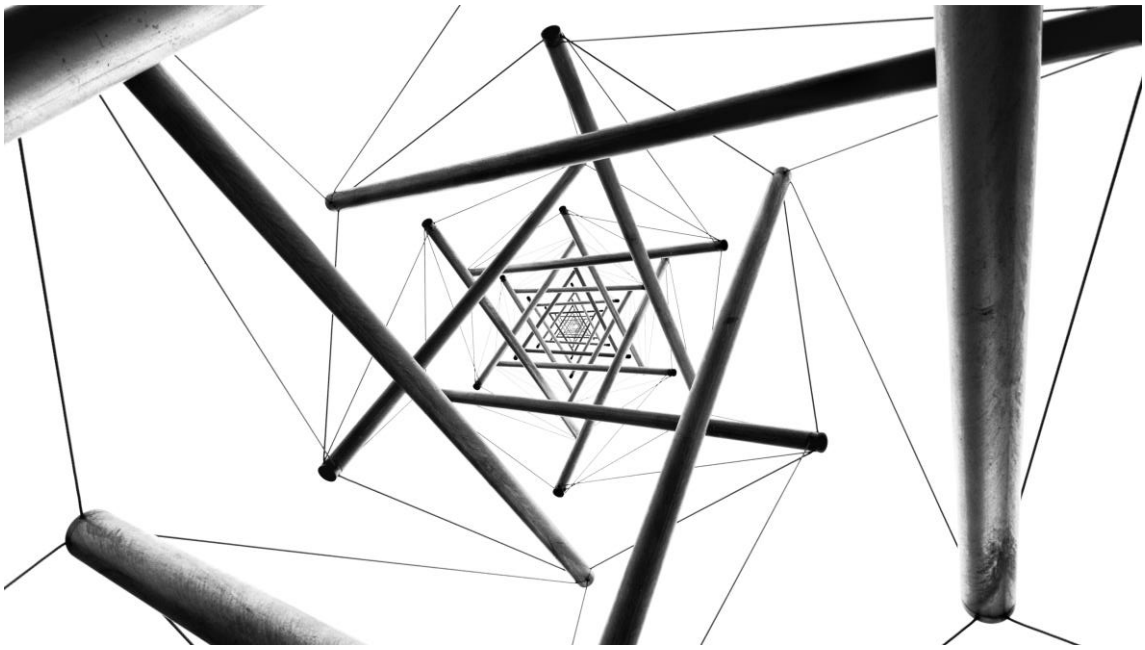
Following actions are recommended regarding institutional policy:

- Define institutional objectives and innovation plans for new technologies with impact on the course and curriculum level, in line with the common agenda at national level and the ambitions of the Bologna process (Paris Communiqué, 2018).
- Develop strategies for continuous innovation in the institution, involving digital education in the core educational areas of provision in higher education:
    - Enhancing the quality of education by blended degree programmes for increasing numbers of students;
    - Extending scalable and flexible online continuous education and continuous professional development by dedicated university extension structures;
    - Developing open education by OERSs and MOOCs
- Stimulate staff and students by institutional ***drivers*** as, stimulating a culture of change and a mind-set to support the institutional strategy by:
    - Facilitating a bottom-up approach from teachers themselves and embedding these initiatives within the institutional strategy plan
    - Encompassing quality in education
    - Stimulating career opportunities
    - Activating innovation frameworks project funding (e.g., grass-root funding, seed money, project funding)
    - Rewarding staff and faculties by new business models, stimulating their participation in developments in continuous education and open education
    - Working with multi-annual operational plans for designing and developing new modes of teaching and learning in courses and curricula

[16] https://hochschulforumdigitalisierung.de/peer2peer
[17] http://empower.eadtu.eu/home/activities-of-empower

- Supporting the workload management of teachers during the development process of courses by organising course teams, by re-allocating resources and tasks and by making advantage of the scalability of digital education.

- Develop ***enablers***, facilitating innovation processes by:
  - Showing leadership with the support of the entire board and at all decision levels of the university. Appoint a vice-rector, accountable for digital education.
  - Organizing continuous professional development of staff, in particular related to course and curriculum design.
  - Organizing educational and technological support services for staff
  - Creating subject area communities and/or course for staff to exchange expertise and to collaborate
  - Sharing course material and good practices within the institution and in networks
  - Evaluating if the (institutional) objectives are reached and measuring the impact of innovation and new pedagogical models.



4. Teaching and learning in mainstream degree education

Blended teaching and learning practice in degree education is increasing, primarily because of the ubiquitous presence of digital technology and the increase in the digital skills of both students and teachers. Several studies revealed that a majority of higher education institutions have established blended learning courses and programmes (e.g., Gaebel et al., 2014). It is likely that they will always value traditional teaching and learning formats and combine them with online formats (Haywood et al., 2015). It is now expected that digital learning is growing in most institutions and that more strategic approaches to digital education are seen in higher education institutions.

Blended learning combines conventional and digital methods to achieve an "optimal exploitation of ICT and internet" integrated with the conventional technologies of physical material, and co-presence in space and time. The value of blending the two is that digital methods offer much greater personalization, flexibility, inclusiveness and efficiency than conventional methods can, but they have to be used appropriately (Laurillard, 2015).

Various blended and online educational formats are practiced at the course level as well as at the curriculum/programme level in degree education. Cases at course and the curriculum/programme level are discussed in more detail below.

4.1 New modes of teaching and learning at course level

The first CPL study (Haywood et al., 2015) made clear that even within frontrunner institutions only 20% or less of the courses were blended. Moreover, many course models just replicated face to face courses or didn't meet the requirements of high quality course design. Despite the widespread uptake of technology, its use was ranging from the provision of digital versions of traditional teaching materials to re-designing and re-developing a course or a curriculum.

This is also observed in current study: many interviewed universities are using video-recording and podcasting as tools for e-learning. This creates the possibility for students to see a lecture again and for part-time students to see a lecture at another moment. In the flipped classroom format, these recordings were used as preparation for classroom sessions. Now, a wide range of innovative pedagogies were observed in the respective countries, creating additional possibilities for teaching and learning.

Cases from selected countries

Examples of use of technology / pedagogies for blended and online education mentioned by interviewed universities are:

Extending the classroom environment:

- The flipped classroom: online lectures or knowledge clips, followed by interactive classroom discussions
- The virtual classroom, for including students at a distance in real time
- Virtual mobility: integration of (parts of) MOOCs or online courses of partner universities
- Usage of YouTube or other (social media) platforms (e.g., exchange of video and photos, group assignments making use of social software, etc.)

Online courses for guided independent learning and MOOCs:

- Online courses for guided independent learning
- MOOCs, as additional learning or as additional preparation for exam

Learning communities, group learning:

- Virtual learning communities for collaborative learning.
- ICT-enabled collaborative projects and practice

Virtual labs and simulations:

- Educational games
- 3D virtual labs to develop digital teaching competences
- Simulation rooms for nursing (e.g., use of dummies with symptomatology, to avoid any risk for the patients)
- Medical skills laboratories operated at a distance
- Virtual court room for law studies
- Design Factory for developing design competencies
- Transformation of expensive laboratories and experiments into digital labs
- Simulation rooms for translation and interpretation
- Lab factory work as a development environment bringing work related issues into study modules. In addition, it is used in all the development related meetings.
- Robotics Lab
- Role-playing supported by ICT
- Real projects from companies with authentic learning tasks.

E-assessment:

- Peer assessment supported by ICT
- Online examinations
- 360º Assessment in for example Chemical Engineering

Online courses and MOOCs are increasingly used, not only as part of flipped classroom approach or as an additional source, but also as an entrance course for a mainstream degree programme. For example, in Finland applicants can attend a MOOC in programming, organised by the University of Helsinki and be selected in a study programme. The assignments need to be done within a given schedule. For successful completion, participants need to accomplish at least 90% of the available points for every part of the scheduled MOOC course, and they must take the competence-based test after the MOOC. Credits from the MOOC are recognized as part of degree programme in case they get the study place. In addition, MOOCs or other online courses are also used by students who want to develop specific academic skills as compensatory or preparatory education.

Also, on some places, examinations are offered online instead of the traditional handwritten examinations. However, most exams still take place on-campus and not off-campus, because of reasons of authentication and reliability. Higher education institutions In *Finland* have an electronic test system (EXAM), allowing students to take assessments on campus under controlled circumstances in a special classroom, equipped for that purpose. It allows students

to take an assessment when it suits them best to them. It increases the flexibility of studies and contributes to shorter completion times.

General observations

In general, the attention for new teaching and learning formats is wide-spread. In practice, the use of new pedagogies is increasing but not yet dominant in on campus education.

In this study, it is noticed that course development with new modes of teaching and learning at the course level are mainly driven by the voluntarism of teachers or small teams, eventually supported by institutional policies and strategies. Their impact is mainly felt locally, in particular units or courses. A more systemic institutional approach at the level of a curriculum would have more impact. Without an institutional policy and framework, a widespread dissemination of practices throughout the institution is missing.

The focus of innovative course design as practiced in these courses is on activating and engaging students in a teaching and learning process through a sequence of well-designed learning activities. It is more on quality and less on technology, increasingly moving away from a teacher-focused to a student-focused approach. For characterizing their educational profile, institutions use terms such as “active learning” or “activating learning”.

In many universities, the development of MOOCs by key staff resulted in broader innovations with regard to blended teaching and learning at the bachelor and master levels. By doing so, MOOCs function also as a lever for innovation in mainstream degree education.

At open, online and distance teaching universities, the development of courses and curricula are both a bottom-up and top-down process, always based on an agreed pedagogical model and supported by continuous professional development of teachers (UAb, UOC). Because of the need for flexibility and the very limited number of face to face events, courses are more online and less blended than in on campus universities. The pedagogical models used are continuously evaluated and improved by specialized research and innovation centres, which are increasingly collaborating with other research centres in Europe.

Comments

Online and blended courses are not a copy of printed courses or face to face lectures, even when they are sometimes videotaped. Online learning should be designed in such a way that the student has a deep learning experience throughout the process of achieving the objectives of the curriculum or course. Interventions and interactions with teaching staff and peer students are integrated in the course activities. Learning paths can be differentiated and personalised according to prior knowledge or specific fields of interest of the students.

If there are requirements of flexibility (place, time, pace of learning), online learning activities should be asynchronous and hence more online. If flexibility is less of a requirement, e.g. for mainstream on-campus students, more synchronous activities are possible in which students (and staff) participate simultaneously and/or at the same place (on campus). In this case, online activities can be combined with more face to face teaching.

Every course is a carefully designed unique piece of art, involving principles of high quality education, research and innovation. Course design theories and handbooks consistently focus on some agreed dimensions[18]. Core dimensions are:

- Defining, structuring and sequencing a series of learning activities, leading to the learning outcomes of a course, e.g. reading a paper, attending a lecture series, writing an assignment, commenting a videolecture (clips), discussing concepts with peer students, reporting observations
- Flexibilising a course to the identified characteristics of target groups, for example by different and personalized learning pathways, adapted to the prior knowledge and personal interests of the students
- Creating a learning community and room for interactions between students and with teaching staff (e.g., learning communities for collaborative learning)
- Integrating learning resources, available in the learning environment, on the internet or on open media
- Assessing the learning paths and progress of students and designing the final examination

While designing a course, teaching staff can base learning activities on learning theories and on agreed institutional concepts on teaching and learning. Different learning theories can be embraced, e.g. a constructivist approach, a behaviourist approach, the conversational theory of teaching and learning or a connectivist approach.

Also, specific pedagogies for course design are developed and can support teaching staff, as observed in this study, e.g. the flipped classroom, virtual seminars, virtual labs, inquiry learning, etc. Some of these innovative pedagogies are every year published in Innovating Pedagogy of the Open University, UK[19] . It is possible that lectures are the dominant pedagogy, also in blended learning. Proportions in % of online or face to face components don't make much sense, as course design will define the blend. This should be based on evidence and sound theories on course design and teaching and learning (Laurillard, 2012, 2015).

the activities. the student. Some of these innovative pedagogies are every year published in Innovating Pedagogy of the Open University, UK[20] .

In blended education, the balance between face to face and online components is to be exclusively based on considerations of course design, pointing out the added value of both formats for a particular course, its objectives and the optimal learning experience for students.

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[18] Graham, R. (2013), Emerging practice and research in blended learning. In: Moore, M. *Handbook of Distance Education*, Routledge, New York, London
Laurillard, D. (2015), *How should professors adapt to the changing digital education environment?*
Laurillard, D. (2012), Teaching as a design science. Routledge, New York, London
Boelens, R., Van Laer, S., De Wever, B. & Elen, J., (2015), *Blended learning in adult education: towards a definition of blended learning*, http://hdl.handle.net/1854/LU-6905076
Contact North, Ten facts you need to know about blended learning.

[19] Ferguson R.(Ed), Innovative pedagogy 2017, Institute of Educational Technology, Open University Innovation Report 6, the Open University. Retrieved from https://iet.open.ac.uk/file/innovating-pedagogy-2017.pdf

[20] Ferguson R.(Ed), Innovative pedagogy 2017, Institute of Educational Technology, Open University Innovation Report 6, the Open University. Retrieved from https://iet.open.ac.uk/file/innovating-pedagogy-2017.pdf

Currently, various European initiatives are supporting the uptake and implementation of blended education. Examples are:

- In a European project (EMBED)[21] a European Maturity Model for Blended Education is developed. This project concerns all levels of education: the micro-level (course and curriculum design), the meso-level (institutional leadership and environment) and the macro-level (governmental policies).
- The EMPOWER programme[22] of EADTU is organising 12 expert pools in digital education and is organising webinars, on site local seminars on demand at universities and leadership seminars. The EMPOWER programme is also publishing innovative pedagogies and practices in online and blended education in its annual Envisaging Reports[23].
- The EFFECT project[24] of EUA aims to facilitate the exchange of experience and effective methods in terms of university teachers' development at the European level. The EFFECT Consortium has released a set of ten European Principles for the Enhancement of Learning and Teaching[25].

Also, recent research shows the relevance of new pedagogies for the design of blended and online courses. A study by The Open University[26] reveals that the best predictor for study success for a course was their attendance to collaborative learning activities, such as discussion forums and online tuition sessions. Students who got "spoon-fed" learning materials spent less time in the learning environment, were less engaged than their peers in further collaborative activities. Hence, teachers should master competences for organising collaborative learning activities. And students should be informed about the reasons why collaborative activities are organised, e.g. a better success rate.

Kasch, van Rosmalen and Kalz (2017) identified some (potential) scalable support and feedback methods for large numbers of students, without increasing teacher time. This and other studies might assist institutions in providing collaborative activities without increasing teaching workload.

Recommendations

Course design for blended education is different from course design for traditional face-to-face education. To be successful, following recommendations can be followed.

The leadership of a university should:

- Develop an institutional vision and strategy for blended learning and teaching for on campus degree education
- Create awareness on the gap between current practice and advanced course design/maturity in blended learning, demonstrating the benefits and opportunities of blended learning, based on reports of good practice, reports on concepts, theories and evidence on course design, next to patterns of good practice of course design in the institution(s);

[21] This EU-project is co-funded by the EU and led by EADTU. See: https://embed.eadtu.eu
[22] http://empower.eadtu.eu/
[23] Ubachs, G (Ed.). The Envisioning Report for Empowering Universities, EADTU, 2018.
[24] http://www.eua.be/activities-services/projects/current-projects/higher-education-policy/effect
[25] See: http://www.eua.be/Libraries/default-document-library/web_effect-principles-one-pager16102017.pdf?sfvrsn=2
[26] https://profbartrienties.wordpress.com/2018/02/20/inaugural-lecture-the-power-of-learning-analytics-to-give-students-and-teachers-what-they-want-30-january-2018/

- Promote a joint institutional concept on learning and teaching around a central principle, e.g., “active learning”, “guided independent learning” or “open-space learning”;
- Provide (temporary) funding schemes for the most innovative course development projects in the context of the institutional strategy and within a joint institutional concept on teaching and learning;
- Organise continuous professional development for staff on blended and online course design;
- Organise educational and technological support services for staff;
- Create staff communities and course teams for blended and online learning around various subject areas;
- Share patterns of good practices in blended and online education within the institution;
- Recognize and reward good practices in education with regard to career development;
- Create space for experimenting with blended and online learning and teaching.

Teaching staff should:

- Consider each course as a unique teaching project, requiring specific approaches according to content, level and student characteristics
- Apply for additional funding of course development / innovative projects. Make use of existing local, national or international funding schemes.
- Increase research output related to those course development / innovative projects
- Stay up to date with evolvements in blended and online learning and teaching in his subject area
- Publish good practices regarding blended and online learning and teaching in this subject area
- Share course materials within the institution and between institutions (OERS)
- Participate in international expert groups and in research and innovation

4.2 New modes at curriculum/programme level

Some front-runner universities stimulate faculties to develop blended or even online curricula. This requires a joint innovation strategy by all staff concerned, strongly supported by educational and technological services in order to assure the quality required. Below, some examples reported in the interviews are described: OERSs supporting blended and online programmes; dual mode programmes; joint degrees with elements of online and distance education; regional mergers and curriculum collaboration/ integration; and fully online programmes. Online degree programmes

OERSs supporting blended and online programmes

France

In *France*, seven Universités Numériques Thématiques (digital thematic universities) are established. For example, The Université Numérique Juridique Francaise[27] (UNJF, Digital French University of Law) creates teaching resources for courses and modules in law studies, which are used for example by Aix-Marseille University[28]. The teaching resources of the

[27] https://univ-droit.fr/unjf-cours and https://cours.unjf.fr/
[28] https://facdedroit.univ-amu.fr/ead/accueil

Universités Numériques Thématiques support largely the organisation of online and distance education for degree programmes, for example in law.[29]

Dual mode programmes

Catalonia

In *Catalonia*, at the Universitat Autonoma de Barcelona (UAB), the undergraduate programme on Geography and Territorial Organisation is provided in two ways: face-to-face and online. A number of master programmes are also provided partially or fully online. Similarly, some face-to-face programmes give the students the possibility to take some courses online. They have a unit specifically devoted to online education (Autònoma Interactiva Docent). The main reason to foster online and blended education is the growing number of prospectively interested students from Latin America.

Finland

In *Finland*, off-campus students in various degree programmes can choose whether they come to the campus or participate in courses via the virtual learning environment. Open education students take the same courses together with degree students or they can study the same courses flexibly online. It is possible to study almost all bachelor level courses through open education. Open education is offered for free for students in upper secondary education (for others a small fee (15 €) per ECTS credit) and at a reduced price for staff. They can be accepted as degree students and flexibly continue their studies, once they have earned enough credits.

In Business Studies at Satakunta University of Applied Sciences (SAMK, Pori, Finland), students can choose either face-to-face classes or virtual classes online. All business courses can be studied online. This has led to an increase of adult student numbers, as it is easier to combine work and studies when studying online. Flexibility has also resulted in faster completion times and better learning outcomes. The quality of final year theses has risen considerably as well.

France

In *France*, at the *Aix-Marseille*, the Master of Public Health[30] is taught both face to face and remotely. Face to face students can take optionally (1 to 5) online teaching units. This creates opportunities for a multi-campus university as students can study on different sites. The number of students opting for the bimodal curriculum is growing strongly. For example, in Aix-en-Provence, in Humanities and Human Sciences, 400 students study online and 1500 students in a combined mode.

Austria

In *Austria*, JKU offers a full distance learning law degree programme without constraints of time and place (the Multimedia Diploma in Legal Studies[31]). Students can study the traditional law programme and alternatively the distance learning law programme. Students even can switch between the two modes. This was a strategic approach at the beginning of the new

[29] See for example: https://facdedroit.univ-amu.fr/ead/accueil
[30] http://formations.univ-amu.fr/ME5ASP-SPASP5G.html
[31] http://www.linzer.rechtsstudien.at/de/2/196/197.htm

century to give the Faculty of Law a unique selling point compared to the other Austrian law studies.

JKU offers also a blended learning programme in Social Sciences, facilitating distance education. A considerable range of courses can be covered by online modules (see MuSSS, Multimedia Studien Service SOWI). This is targeted at students at work or with family obligations. The programme is not different from the face to face programme (the same requirements, examinations. Only the study mode is different. Face to face components are taught at many places in Austria[32].

Greece

Among the "conventional" *Greek* Universities, there is a strong trend for blended education, particularly in the universities of the periphery (not established in the big cities of Athens and Thessaloniki). In *Greece*, the Executive Master of Business Administration of the University of the Aegean has launched a blended education format, with a powerful and rich course management system. The programme has invested in synchronous and asynchronous e-learning services. It supports the management, storage and presentation of teaching materials, independently of the space and time limiting factors in conventional teaching, creating the necessary conditions for a dynamic teaching environment. The university is based on several Aegean islands, such that the attendance of students to classes is not easy. The adoption of e-learning into the traditional teaching process provides new opportunities for students and allows for new means of interaction between students and teachers, through a contemporary technological environment. In terms of organisation, changes in the design and delivery of the programmes have resulted in the organisation of special units for the support of online distance and blended education in this and other universities.

Joint degrees with elements of online and flexible education

Austria

In *Austria,* the Teacher Training Programme for Secondary Level General Education[33] has been reorganized. The unification of teacher education started in 2013. Four regional clusters of universities have been formed that offer a joint teacher training programme. Modules must be studied at different member institutions of the cluster. However, smaller higher education institutions are not able to offer each and every module. For this purpose, (more) online/distance education is needed. This particularly concerns the master degree programme, which will be available in 2019. Bachelor graduates will start their teacher career and they have to combine this with studies for a master degree. Only blended or online/distance master programmes will be flexible enough to offer these master programmes for teachers already working in schools (inservice education).

In *Austria,* some initial experiments concern cross-institutional degree programmes where a student is composing his studies with content of different programmes of one university or

[32] See: https://www.jku.at/studium/studienarten/multimedia-fernstudien/musss/
[33] https://wissenschaft.bmwfw.gv.at/bmwfw/wissenschaft-hochschulen/universitaeten/paedagoginnenbildung-neu

even of several universities and gets a valid degree afterwards. This "studium irregulare" raises new issues on accreditation, quality and organisation.

Catalonia

In *Catalonian* universities, some online programmes of the Universitat Oberta de Catalunya (UOC) deliver joint degrees shared by UOC and other Catalan universities. The iteration of the same online programme in more than one university is unnecessary. The two versions (face-to face or blended, and online) are addressed to different target of students by different universities.

Also, the interviewed universities in *Catalonia* are experimenting with more flexible open bachelor degrees, based on an existing initiative[34] at Universitat Pompeu Fabra (UPF).

Regional mergers and curriculum collaboration integration

France

In *Lille* (*France*), three universities (Law & Health; Science and Technology; Humanities and Social Sciences), which were already linked with each other in eight schools[35], have merged into one institution, Lille Nord-Europe University[36] (January 2018). The merger is supported by the Minister of Higher Education and Research. Part of the investment is labelled 'I-Site[37]' and will receive 15 million euros per year for 10 years. The central idea is to develop innovative teaching and learning approaches and digital resources. The Centre for Educational and Digital Innovation will stimulate the concertation between the three graduate schools and collaborative development and co-use of courses and curricula.

Finland

In Spring 2017, the Tampere University Foundation (*Finland*) established the *Tampere New University* as a merger between the University of Tampere, the Tampere University of Technology and the University of Applied Sciences (TAMK). The purpose was to develop a strategy for high-level international research and education. The new university is due to start its operations at the beginning of 2019 as a university of the future, allowing students to choose courses from all three universities and offering integrated curricula. A virtual hospital will be created where medicine and nursing students can learn clinical skills.

Online degree programmes

In *Denmark*, the master's in "ICT based educational design" was transformed into a mainly online offering. The programme is based on pedagogical principles of student learning and cognition, interaction, collaboration, guidance, assessment and feedback. This programme attracts students from all over the country. The main objective is to open the master to a

[34] https://www.upf.edu/en/web/graus/grau-obert

[35] Lille's central school; ENSAIT; École nationale supérieure d'architecture et de paysage de Lille; ENSC Lille; ESJ Lille; École des mines de Douai; Sciences Po Lille; Télécom Lille

[36] https://www.univ-lille.fr/ and https://www.univ-lille.fr/du-projet-a-la-fusion/les-membres/

[37] http://www.isite-ulne.fr/index.php/fr/investir-pour-accompagner-la-creation-de-la-future-universite-lille-nord-europe/

variety of target groups, including future/former students, students from other programmes, and teachers and researchers from university colleges.

In *Portugal,* there are also examples of face to face courses and programmes which are transformed into online programmes, mainly driven by pro-active and innovating staff. This explains great differences in concepts and practices in online education. The absence of a national legal framework for online and distance education pushes higher education institutions to a hybrid territory combining a culture of face-to-face teaching, combined with the flexibility and openness of distance education.

Open and distance teaching universities support students by more use of technology to enable more time and place flexibility for study. Pedagogies are re-thought and re-developed to meet new needs. At UAb, Portugal, most courses are originally planned, thought through and designed to be taught online. Uab offers also courses in collaboration with face-to-face universities, where a blended approach is adopted. Universitat Oberta de Catalunya (UOC) is the only fully online university in the Catalan system. UOC covers a very wide range of flexible online programmes, especially addressed to adult and working people. The Hellenic Open University (HOU), which is the unique state university in Greece offering distance education, has adopted a digital transformation strategy in 2017. New study programmes are offered completely online, and the digital restructuration of the existing programmes is under way.

The Master's programme "Language Education for Refugees and Migrants" (LRM) is a good example of a completely online study programme at HOU. Collaborative learning is at the heart of the design and implementation of LRM and its watchword is "collaboration - co-construction - reflexion". Students are invited to comment on existing resources in order to improvie or change them in the next semester. Social media play an important, complementary role. Traditional exams are replaced by micro-projects. English is the teaching language for this programme. This has resulted in an attendance of 30% of students living abroad. The LRM Master's degree was awarded with the Quality and Innovation Label of the Ministry of Education in 2017.

In *Austria,* there is no distance teaching university, as a consequence of a political decision of the 80ies, taking into account the small size of the country and its higher education sector. Instead, a co-operation with the German FernUniversität in Hagen has been initiated. In 1992 Johannes Kepler University of Linz[38] (JKU) took over the agenda of co-operation with FernUniversität via the Center for Distance Studies[39]. JKU, offers for example a full distance learning law degree programme free of time and location constraints and based on e-learning principles (e.g., Multimedia Diploma in Legal Studies[40]). Students can study the traditional law programme or alternatively they can enrol in the distance learning law degree programme. Students even can switch between the two modes. In addition,

From 2018/19, University of Graz (KFU) in Austria, will offer the bachelor's programme in Fundamentals of Theology mainly via distance education. This to facilitate a broad target group

[38] http://www.jku.at/
[39] http://www.fernstudien.at/
[40] http://www.linzer.rechtsstudien.at/de/2/196/197.htm

with professional background active in the catholic-theological fields. The lecturers are being provided online, other elements in more blended mode.

General observations

Universities evolve to blended education in their mainstream educational provisions to enhance quality and to meet the needs of a more diverse and larger number of students. As already observed in the CPL 2015 study, they do not abandon face-to-face education, even as they increase blended education and begin to offer fully online degrees.

In this study, some interesting developments have been observed:

- Mergers of universities have a large impact on the institutional policy in education, especially when additionally governmental funding is foreseen for large scale innovation. This is seen in France and to some extent in Finland. A university resulting from a merger creates an innovative dynamic, for example leading to collaboration and even integration of programmes and multi-campus education with different options, all supported by new modes of teaching and learning.
- Open educational resources thematically shared by universities support innovation in university programmes as is proven at a large scale by the Universités Numériques Thématiques, organised by the Ministry of Higher Education in France.
- Many universities organise dual-mode blended or online education provisions to facilitate the participation of part-time students, students at work, fulfilling family obligations or students in remote areas (e.g., the Greek islands). By dual-mode education, universities extend the reach-out of a curriculum to all regions in a country and students can choose between different modes of learning (face to face or online), while the requirements and examinations remain the same.
- The first CPL study (2015) already observed an increasing pressure to have more flexible offering for degree students, part-time students combining work and study and partly by non-traditional students. This gradually will push universities to adopt new pedagogies with a larger online component in the blend to make degree programmes (and courses) more flexible and accessible for all kind of students.
- New modes of teaching and learning support joint degrees of different universities in a region or a country. Students follow an integrated programme and don't have to travel to follow courses at another university. For all students, additional study opportunities are created.
- Purely online education is mostly used in master programmes with an international outreach and by open and distance teaching universities, as these programmes have to be flexible enough to be accessible for international students and students at work. In many online courses and programmes, some face to face components are adopted, e.g. as an introduction to the course or to report individual and group learning activities at the end of the course.
- Open and distance teaching university curricula use an online approach, because of the need of working and part-time students to have flexible study opportunities
- In countries with an open and distance university, cooperation with conventional universities leads to dual-mode and joint programmes, meeting the needs of a diverse student population and enriching the higher education system

Comments

The curriculum level is strategic for innovation as a complete programme will re-design and re-develop and implement all its entities. This corresponds better to a systemic approach to innovation than course level projects (which also can have a high innovate value).

Therefore, some universities allocate strategic innovation funding at this level, eventually after a tender procedure or call for proposals for faculties. Curriculum Innovation can focus on course design for every course entirely, but also on some transversal thematic aspects like learning communities or assessment and feedback mechanisms.

Digital environments allow curricula to extend their learning environment to resources worldwide, e.g. by the integration of open educational resources, MOOCs, open media and open science resources. They can enrich the learning experience with games, virtual labs or robots.

In a broader context, digitisation allows curricula to network with other campuses (multi-campus education) or with enterprises. They enable curricula as well to organise international virtual seminars or collaborative curricula and related virtual mobility, extending the learning environment even more (see also section 7).

Digital education can prepare students, before starting a programme or test prior knowledge before and throughout the programme. They can also provide assessment and feedback tools and learning analytics to adapt study paths or to orientate students to different minors in the programme.

The curriculum level is the unit of educational operation for most teaching staff. At this level, important decisions are taken about an agreed design of the curriculum. This should happen in a documented way, bringing in the latest and the most appropriate pedagogies and technologies to enable staff to assure a programme of the highest quality level. Educational and technological services should support these design processes.

This is also the first level to share institutional leadership in such a way that central educational concepts and visions come through and experience finds its way to the top. The programme coordinator has a strategic function in innovation.

Recommendations

Some recommendations for leaders and programme coordinators are:

- Assure that leadership of innovation in education is shared at all levels: the board; the faculties, deans and programme directors; teaching staff at the level of the subject areas involved.
- Translate institutional visions and strategies at the curriculum level, while capitalizing on the expertise and energy of teaching staff
- A faculty strategy should embrace mainstream degree education, short degrees, continuous education and CPD; and open education incorporating the characteristics of a variety of target groups.
- Design and adopt a joint educational and innovation strategy, extending the physical learning environment to a virtual space, where every staff can develop enriched learning activities for the students.
- Look for the right balance between face-to-face and online education. This blend can be very different for the content and level of the respective programmes: bachelor level, master level,

postgraduate level, short degrees, non-degree education; subject areas; transversal competencies and skills to be developed;
- Organise collaboration between staff communities in various subject areas;
- Collaborate in networks or consortia in order to build synergies with regard to content and pedagogies and exchange staff and students accordingly. Online spaces will make this collaboration scalable, intensive and cost-effective. Students will benefit from enriched content and new competences which can't be delivered within the walls of a single university.
- Organise programme evaluations incorporating the benefits of blended and online learning and related to institutional visions and strategies

Recommendations for teaching staff are:

- Invest in knowledge about the needs and characteristics of various (new) target groups in your subject area and how a redesign of curricula can accommodate those.
- Bring in your experience and expertise in the wider context of the curriculum
- Create networks with peers in sister programmes and collaborate at the subject level. This will be more structured when university networks operate.
- Share practices on curriculum design and share educational resources (e.g., course material, multimedia products, assignments) in your subject area and in the broader educational community of university networks, the country and internationally
- Organise research on these practices on curriculum design - increase your research output related to educational innovation.

4.3 Challenges for the implementation of new modes of teaching

In this study, interviewees were asked to reflect on the innovative capacity and resilience of institutions, regarding new modes of teaching, including the main barriers and incentives.

In this study, the following challenges are found:

- Institutional policies on online / blended education
- Innovative climate - workload
- Digital and media competence
- Quality of online provision
- Teaching versus research careers
- Legal issues and personal rights
- Funding issues
- Questions of costs versus scalability

These are each shortly discussed and illustrated with examples of different countries.

Institutional policies on online / blended education

The (non) existence of an institutional strategy or policy related to online and blended education is mentioned by almost all interviewees as an important factor stimulating or hindering the uptake of new modes of teaching and learning. For example, in some Portuguese universities it is felt that the lack of an institutional policy for online / blended education means that teachers do not innovate their teaching activities as much as would be possible. This

becomes even worse as the development of blended and online courses in general requires an investment (of time) from teachers and as teaching efforts are not appropriately recognized. Section 3 already in detail addresses the role of institutional policies.

Innovative climate – workload

In the interviews, it is mentioned that an innovative institutional climate is important for the development and uptake of new modes of teaching and learning. Innovation is perceived as more time-consuming and provoking a higher workload.

Individual staff is concerned about this increased workload. However, research shows that there is more a shift in the nature and distribution of teaching tasks, not necessarily increasing the total workload (Laurillard, 2015). As a result, restructuring of work both at the individual and at the organisational (unit) level is required. This has organisational consequences for the university, e.g. working in course teams and involving educational and technology staff support services.

Not only institutions, also society at large is not always ready for innovation. According to the *Greek* Ministry of Education, main barriers are conservative mind-sets. The public opinion and students are still in favour of traditional methods of teaching and learning. Also, the context of the financial crisis is discouraging. Nevertheless, in three out of four institutions interviewed in Greece, innovation in teaching and learning methods are now promoted.

Digital and media competence

Interviewees mention that students often complain about teachers' digital incompetence, organisational disadjustments, and weak monitoring and evaluation of online courses. This highlights the importance of organisational support structures and shows the need for specific pedagogical and didactical skills in online or blended education. The lack of teacher training often limits the capacity of innovation.

Also, low skills of students are mentioned, especially in remote and rural areas where the use of the internet and ICT technologies is still low (e.g., the e Greek islands).

Quality of online provisions

A persistent perception is that the quality in distance and online education is lower than in traditional education (let alone when online course is offered for free). For example, some university colleges in *Denmark* are somewhat hesitant towards implementing fully online education programmes, as they believe the desired quality of teaching and learning can't enough be guaranteed.

Although in theory, quality assurance of university education should be able to accommodate any form of educational offering within a generic framework, in some countries this has proved not to be simple. Some universities mention the lack of understanding of how to evaluate the quality of blended or fully online courses. Guidance is needed to use quality frameworks for digital and online education embedded in institutional quality processes. The European Association for Quality Assurance in Higher Education (ENQA) created a Working Group on

quality assurance in blended and online education[41] (see EADTU&ENQA-PLA, 2017; and the quality discussion in section 8.3).

The E-xcellence programme[42] delivers an open licensed quality framework and manual for blended and online education to support quality assurance at institutional and national level. It is experienced that using such a framework can improve both on-campus and online provision.

Teaching next to research careers

Most interviewees mention that incentives are needed to promote high-quality teaching and learning, especially related to the careers of staff at universities. At this moment, careers are strongly linked to research. Although achievements in education are more valued than some time ago, education counts still less than research. This is seen as a barrier for the implementation of innovative teaching and learning.

But positive examples are emerging. In Aalto University (*Finland*), all teaching staff has to demonstrate regularly evidence on teaching skills, which is also valued in external audit reviews.

In *Austria*, University of Graz (KFU) offers a prize for projects and initiatives in the field of new media ("E-Learning Champion"). The prize winner and his respective work act as an example of best practice. In addition, the Austrian government developed a federal prize for excellence in teaching: the "Ars Docendi" prize[43]. They also established an exchange platform called "Dialogue for University Teaching[44]". These are events on quality teaching of 3hrs' duration, organised by the Federal Ministry of Science, Research and Economy (BMWFW) and the Austrian Agency for International Cooperation in Education and Research (OeAD).

Legal issues and personal rights

Online education creates questions on legal issues and on personal rights of both teaching staff and students: issues concerning copyrights (who is the owner of the course material; who can publish recordings of lectures (with universities, staff and students involved); the publication of documents in a new context; personal rights to refuse appearing on recording or streaming facilities; data protection, etc. These issues are perceived as barriers for online/blended education. Although the copyright law is comprehensive and addresses these issues, staff needs to be trained accordingly. These issues are currently discussed in the European Union, where also publishers are stakeholders.

Funding issues

In many countries, resources are an issue. This is related to the level of national funding as to funding regulations. Low levels of funding as they exist in many countries are seen as a barrier for educational innovation.

[41] http://www.enqa.eu/indirme/papers-and-reports/occasional-papers/Considerations%20for%20QA%20of%20e-learning%20provision.pdf
[42] http://e-xcellencelabel.eadtu.eu/
[43] https://bmbwf.gv.at/index.php?id=3398
[44] https://oead.at/en/events/detail/2017/04/25/dialog-zur-hochschulischen-lehre-kick-off/

For example, in the higher education law in *Austria,* a standard student is described as a unit for funding, excluding part-time students, who often need flexible and online learning solutions.

The *Finnish* Ministry of Education and Culture supports innovative teaching and learning and international education through project funding, but at the same time universities see cuts in the basic funding for higher education. If universities could rely on proper financing of mainstream education, there would be more possibilities to innovate and develop education as well then is the case with short-term projects and subsidies, they say. However, this seems to be related to policy options of the government, which apparently wants to earmark some budgets for particular innovation lines.

In many countries, also in Finland, performance-based funding is used. Aalto University gives strategic funding for innovation to its schools in order to improve learning achievements. This is partly based on a national funding rule, where universities get more funding if students graduate on time.

Questions of costs versus scalability

To make a business model for an online course work, a critical mass of participants is needed, since the design and development cost of online education is higher compared to traditional, on-campus courses. The exploitation or delivery cost of an online course is lower. Because of the distribution of the workload for an online course, the cost can vary over years, but the total cost will not be higher. Because of the lower marginal cost of an online course per student, the course will also be more scalable.

General observations

Based on these examples, the following observations are drawn with regard to challenges for innovation:

- In many universities, the absence of leadership and an institutional policy with regard to innovation is a barrier for innovation as consequently at the programme level no sufficiently consistent policies are developed for innovation. Teaching staff feels not to stimulated to design new modes of teaching and learning. Universities face problems with regard to a sustainable innovation in education.
- An important barrier for pedagogical innovation is that there are only a few incentive structures and consequently only limited perceived value for teachers/researcher to focus on teaching development. Teaching doesn't count enough in staff careers, compared with research.
- The leadership is responsible for an innovative climate at the university by giving space for experimentation and (non-material) incentives for innovation, changing the mind-set of staff
- The organisation of the university should take into account shifts in the distribution of the workload of staff and meet the needs of staff regarding educational and technological support. Digital education requires new educational models and different support services.
- Staff doesn't have enough digital teaching competences and staff support services are too weak.
- Specific quality assurance criteria/indicators are missing in the generic quality assurance frameworks of universities and quality assurance agencies, although coherent approaches are

available (e g., the E-xcellence Framework and Manual[45]) and the report of the ENQA Working Group on E-learning[46] .

- Some legal issues occur when organising digital education, especially with regard to copyrights and personal rights of students and staff (e.g., personal data).
- (Decreasing) funding levels for higher education are an obstacle for innovation. Moreover, some funding rules are a barrier for the further development of education (e.g., concerning part-time students), and for innovation (e.g., the recognition of blended and online education as an equal mode of teaching and learning for funding)

Comments

In a force field analysis of the EADTU&ENQA-PLA (2017) in general supports these observations and cases.

Negative factors mentioned in that report are: academic culture not in favour of innovation; attitudes of students and staff towards online learning; leadership not engaged for innovation by blended teaching and learning; no institutional policies, strategies, concepts and frameworks; misconceptions on blended/online teaching; blended teaching and learning competences of staff not enough developed; no adequate solutions for the changing roles of staff; partial innovations only, no maturity model; no incentives for career development; no substantial budget allocated for innovation.

In that PLA the following positive factors were identified supporting the development of blended teaching and learning implementation in degree education: a strong educational leadership in front-runner universities; the strong presence of digital technology and learning environments at universities; well-developed digital skills of students and teachers; good practices in blended teaching and learning already in place; the experience with MOOCs as a lever for innovation; the need for enhancing quality for large student numbers. These positive factors are important for anchoring change processes.

In the most recent EUA study (Trends 2018, preliminary results[47]), the most important obstacle for improving learning and teaching are 1) lack of financial resources (47% of respondents) and 2) lack of recognition for teaching in staff career progression (19%). Note that these are based on a closed survey question with nine options, and that this CPL study and the EADTU&ENQA-PLA (2017) are based on qualitative research.

As also mentioned in the CPL 2015 study, in many European countries, higher education funding is under pressure, especially in Southern Europe (e.g. in Spain 2010-2016: - 20%; in Greece: - 60%). This is still a consequence of the financial crisis. In other countries, the budget is increasing (e.g. in France: + 4,8%; in Denmark: + 15%; in Austria: + 24%)[48]. As the student numbers increase in most countries,

[45] https://e-xcellencelabel.eadtu.eu/tools/manual

[46] http://www.enqa.eu/indirme/papers-and-reports/occasional-papers/Considerations%20for%20QA%20of%20e-learning%20provision.pdf

[47] https://www.slideshare.net/EurUniversityAssociation/trends-2018-report-preview-results-93104593

[48] EUA Public Funding Observatory. Report 2017. See : http://www.eua.be/Libraries/governance-autonomy-funding/eua-pfo-report-december-2017.pdf?sfvrsn=2?utm_source=webpage&utm_medium=publication&utm_name=publication-webpage-12-12-2017

the expenditure per student tends to decrease in most European countries, even in countries with an increasing budget, e.g. in Denmark.

According to the EUA Observatory, "in the last eight years, the divide between the higher education systems that increase public funding for universities, and those that reduce investment in universities, is getting wider"[49].

It is evident that funding and increasing student numbers have an influence on the capacity of universities to innovate. With large student numbers, the quality of the learning experience and the efficiency/cost-effectiveness of higher education are at stake. With traditional teaching and learning formats only, these issues cannot be solved anymore, because they are not scalable enough. New modes of teaching and learning extend the capacity of a teacher to teach within a wider environment, allowing independent learning and intensive small group learning. Innovations in this respect have to be accelerated by systemic institutional policies and strategies. Governments can support this acceleration process by stimulating and activating innovation by funding mechanisms[50] (see section 8).

Recommendations

To overcome these and other challenges in the uptake of online and blended education, many interviewed experts highlight the need for

- Leadership and an institutional strategy plan on education and digital education, looking for a balance between student numbers/access, quality and cost-effectiveness
- Awareness raising accompanied with best practices and positive rewards for teachers are seen as important incentives (including dissemination and promotion of blended / online courses);
- Creating an innovative climate at the university by giving space for experimentation and (non-material) incentives for innovation, changing the mind-set of staff;
- Creating opportunities for staff training
- Supportive structures for both staff and students (educational and technology support; digital and media competences; course teams and subject area communities);
- Career tracks rewarding educational innovation in education, taking into account shifts in the distribution of the workload of staff;
- Integrating digital education in the quality assurance system of the university;
- Both national and institutional funding schemes as an important instrument to stimulate institutional development and innovation with regard to teaching and learning;
- Taking away the funding gaps between European countries with regard to higher education, which endanger the equal and harmonized development of systems within the European Higher Education Area.

4.4 Support structures for new modes of teaching and learning

The development of blended and online education within the institutions requires educational and technological support structures for staff and the continuous development of staff.

Cases from selected countries

The following cases illustrate the variety on how support structures are organised:

[49] http://www.eua.eu/publicfundingobservatory

[50] See also: The Changing Pedagogical Landscape, Haywood et al., 2015

Central pedagogical and technological services

Denmark

In *Denmark,* there has been an increased focus on staff development within the last few years. All universities have pedagogical centres and organise introductory training programmes for teaching staff, starting with assistant professors and postdocs. Mandatory teacher training programmes are established at all institutions. Furthermore, the institutions continuously offer introductory courses on educational technologies. At some universities, training on educational technology is mandatory within the teacher training programmes, but most often these courses are voluntary. Also, university colleges have dedicated pedagogical units, supporting the implementation of new modes of teaching and learning. A general principle for all institutions is that it finally should be up to the teacher which teaching methods will be applied.

Austria

In *Austria*, institution-wide strategies and centralized structures support bottom-up approaches. Staff development is important, from a technological, media competence and pedagogical point of view. Legal issues like privacy and copyright are topics as well. Specific training is related to online and flexible study domains. In the interviewed universities, support structures range from technological support on ICT tools (VLE/LMS, assessment tools, wikis, web conferencing), media production and distribution (podcasts, video streaming and recording lectures) to e-portfolios and e-assessment.

In the region of Styria, nine higher education institutions have joined forces by implementing "eDidactics", a regional continuing professional development programme for university teachers, focusing on new modes of teaching and learning. The Karl Franz University (KFU) acts as a host. This initiative might work as a model for a nation-wide programme.

France

In *France*, the Education and Multimedia Service, le Service Enseignement et Multimedia (SEMM) of Lille 1[51], provides technical (audio-visual, multimedia development) and pedagogical assistance. Continuous professional development is organised by the service for University Pedagogies (le Service Universitaire de Pédagogie, SUP), which opened a Centre for the Support of Teaching Practices (Centre d'Accompagnement des Pratiques Enseignantes, CAPE). The infrastructure for these services is centralized in the IT resource center (le Centre de Resources Informatiques,CRI).

Greece

In *Greece,* the University of Athens has a central pedagogical and technological support service, but dedicated to its lifelong learning programmes. The HOU, like all other open and distance universities, has a well-developed strategy and support centre for the continuous professional

[51] http://semm.univ-lille1.fr/

development of staff (teaching and administrative). Initiatives take the form of seminars, webinars and regular structured training.

Decentralised actions

Finland

In *Finland*, the current focus of staff training is on pedagogies and skills for online and blended learning. One approach is the introduction of digi-mentors or peda-agents, experienced staff members supporting colleagues in the use of digital teaching and learning tools as well as in the pedagogical design of online and blended learning. In addition, staff can seek support from an online service (helpdesk or alike), depending from the university, giving expert advice or suggestions when planning or developing an online course. This service is also available for students in case of technical problems. Teachers can also do short experiments to explore new modes of teaching and learning. This is a rapid way to accumulate information. Results of experiments and good practices are shared in pedagogical exhibitions or alike, depending on the institution.

Support services in development

Portugal

In universities in *Portugal*, the training for eLearning is mainly ICT-related. However, there is a clear concern about the need for more training for the eLearning pedagogy component.

Catalonia

In *Catalonia,* new modes of teaching and learning are incorporated in the institutional quality assurance framework. URV has approved an institutional-supported model[52] for online teaching, providing guidelines to develop online programmes and courses. The institutional LMS is used to deliver blended and online programmes. They develop blended and online programmes and complementary resources, e.g. for students studying in flipped-classroom classes, are provided.

Greece

In *Greece*, two of the four universities visited do not have a specific central pedagogical and technological support service, responsible for the support of online and distance education (HOU and University of Athens do). However, the situation in Greece is relatively positive as already many teaching staff have experience in blended and online education. Many teachers are linked to Hellenic Open University or have been involved in it.

General observations

The examples of various European countries illustrate that most universities are supporting teachers' digital, educational and technological competences and organising support services.

[52] http://www.fcj.urv.cat/media/upload/domain_3/arxius/fcj/apartat%20GID/Comunicacions%20presencials%20II%20JORNADA%20GID/modelo_docencia_distanciaURV.pdf

In most universities there are well-established central education and technology services for academic staff, with a cadre of professional (support) staff employed in these areas. Also, at the faculty level, initiatives are taken for supporting staff.

In some universities, no central services are yet or only weakly deployed, probably because of financial reasons.

Comments

The previous CPL study (Haywood et al. 2015) concluded that in most universities the support structure has a strong technological and digital competence component and is organised around the central virtual learning environment (VLE or LMS) with a 'halo' of educational applications (embedded in the VLE or separate).

The case studies in this study show, however, an increased interest in the pedagogical and organisational competences related to blended and online learning and teaching. This is also confirmed in the latest EUA study (Trends 2018, preliminary results[53]) in which 78% of the respondents find a course on "*Introduction into pedagogics and didactics*" as most important topic to be addressed by compulsory enhancement courses for teachers. The topic on "*ICT environment*" is still mentioned by 60% of the respondents, but still less than for example "*Student-centred learning*" (67%) and "*Development of learning outcomes*" (62%).

These and other studies show that dedicated teaching and learning departments play a pivotal role in the support structures for staff on new modes of teaching and learning. The training of staff and support structures is frequently organised at an institutional level. The case studies show that some support structures are even organised at cross-institutional level (e.g., Austria and France). Some training and support services are nowadays even organised at (inter)national level, for example in the case of MOOC platforms (see for example overview given by European project SCORE2020[54]).

A recent feasibility study conducted in Germany[55] about the organisation of a national platform for online education, has a detailed chapter on possible support services for the development and uptake of online courses. That study discusses many possible services in connection to different platform scenarios, opting for possibly shared service centres at national level.

Recommendations

Digital education requires innovative approaches to curriculum and course design, involving new pedagogies and appropriate technologies for a distributed delivery. Support structures to teaching and technical staff are important elements in this.

The following actions can be recommended:

- Adopt a learning environment with technologies, which are suitable for blended and online learning involving diverse learning activities, learning communities, multimedia and assessment tools;

[53] https://www.slideshare.net/EurUniversityAssociation/trends-2018-report-preview-results-93104593
[54] http://score2020.eadtu.eu/results
[55] Machbarkeitsstudie für eine (inter-)nationale Plattform für die Hochschullehre, see also blog contribution https://hochschulforumdigitalisierung.de/de/scalability-online-education-germany-national-platform

- Organise technology support for teaching staff and students;
- Empower teaching staff by continuous professional development on blended learning and innovation. This should include digital and pedagogical skills of teachers;
- Create support structures, related to the ICT-infrastructure, innovative pedagogies and organisational formats for blended and online courses.
- Have a critical look on what level the support structure should be organised. Some support might best done at a faculty level, others at an institutional or even at a cross-institutional level;
- Identify patterns of good practice in universities and in networks/partnerships (curriculum development, course design, new pedagogies).
- Look to teaching staff workload in a long-term perspective: efforts in the design phase are compensated in the implementation phase and in the steady state of course delivery
- Divide the work in course teams: modules and units are developed by several teaching staff with support of expertise available in teaching and learning departments, educational technology departments and extension structures
- Create peer groups and subject area networks
- Organise institutional evaluation and research on the design, implementation and effects of blended teaching and learning by teaching and learning department
- Use tender mechanisms to promote innovation experiments in faculties and departments

4.5 The role and perspectives of students

Regular degree students are used to (large) classroom lectures, but not necessarily with blended and online courses. The attitude of students towards online and blended learning is an important factor when introducing new modes of teaching and learning. Students in 7 countries were interviewed in the context of this study.

Cases from selected countries

Austria

In *Austria*, students basically show a positive attitude with regard to e-learning, but they also appreciate the direct contact with professors and lecturers and are concerned that this direct contact gets lost when the amount of online teaching increases. Nevertheless, KFU's MOOCs' experience provided a feedback that was consistently positive. The knowledge acquisition in the MOOC was seen to be livelier than in the traditional f2f-lecture.

Denmark

In *Denmark,* student representatives are somewhat hesitant towards blended and online education. Students value face-to-face time with the teachers and the social environment with their fellow students. Institutions feel that students often are rather conservative, preferring traditional lectures and a "more passive learning environment". A small investigation at one of the universities showed that students prefer traditional teaching based on knowledge transfer rather than an activating and constructivist approach. At the same time, it shows that students working in a constructivist framework perform better at the exam. Nevertheless, students also highlight the potential of online and blended learning. As main values, they mention flexibility,

personalised learning, collaborative settings with peers, satisfaction with new technologies and the possibility of repeating course units. However, students do not want to have fewer face-to-face contact hours. They appreciate that teachers plan their pedagogical practice with different forms of learning.

Catalonia

In *Catalonia*, UAB's students consider some of the new course models not as new, neither as a positive development: “you keep attending the class activities, but you have more workload to be done by yourself”. This is not exactly what they meant by flexible and online education. Some of the students value online education, as they can take courses they wouldn’t take if an online option would not exist. Flexibility is important for students to be able to work at the same time as they study. Also, students feel that teaching staff is strongly available and involved in online teaching, but they report also some feeling of isolation. Teachers do not necessary know how to manage online courses and online communities. Some have a lack of digital teaching competency. Nevertheless, students suggest to reduce the face-to-face component, to organise e-exams, and to support teachers through training and incentives to feel more committed and professional. Students complain that some online courses are too similar to face-to-face courses and ask that they would be re-designed in a different way.

At URV (*Catalonia)*, there is an uneven satisfaction, depending on the course. In the opinion of students, the use of ICT makes sometimes sense, sometimes it doesn’t. As added value/benefits they highlight: to get access to diverse teachers from many different universities, to have the best teachers for each topic, the increase of flexibility in the provision of courses, the group work, and the collaboration with peer students from different cultures. As complaints, they report: the lack of teachers’ digital competence, organisational issues, and some weak experiences on monitoring and feedback. Students neither like the institution asking them to create an account and profile on a social network that they don’t use.

Students complain about the fact that some exams and some other learning activities are still organised face-to-face. However, this is mainly an issue for international, e.g. Latin-American students.

Finland

In *Finland*, students seem to appreciate the flexibility of studies and the freedom of choice on whether to attend face-to-face or online education. Online programmes can include online learning activities, recorded video lectures, webinars and the possibility to decide when to take an assessment enabled by the electronic assessment system.

In JAMK University of Applied Sciences, the programmes with new modes of teaching and learning are popular. The number of applicants are 50 % higher in these programmes than in traditional ones. The majority of students is satisfied with the current implementation. Students also feel that they learn to collaborate online via different cloud services and using

various virtual learning environments. For example, experience with web conferencing is important in real projects with authentic learning tasks from companies.

Student guidance and support services are key functions. Some categories of online students need guidance and support outside the office hours. Also, it is important to create appropriate software (self-help services, chat, etc.), library services and modern facilities for students. Blended and online learning seems to contribute to acquiring 21st century skills.

France

In all the *French* universities, students are involved in evaluating and developing courses in various development councils and commissions. At the University of Aix-Marseille (AMU), the FNEB[56] (Fédération Nationale des Etudiants en Sciences Exactes, Naturelles et Techniques) appreciates the relevance of pedagogic innovation and promotes teaching which supports active learning, e.g. the flipped classroom. Often opposing demands have to be accommodated, e.g. more participation, but not more time. Time is a big constraint for students.

Greece

In *Greece*, students interviewed are extremely positive about the possibilities and advantages of blended/online learning. Students definitely believe that blended/online learning is an emerging and rising trend in higher education.

General observations

Universities in this study report a positive attitude of students, but also some reservation towards online and blended education.

The cases above illustrate the importance of students' attitudes towards online and blended education, but also the importance of digital and pedagogical skills of teachers organising digital education and the need of various support structures for both teachers and students.

If blended and online education is provided according to best practices, students appreciate the flexibility of online learning, the accessibility of programmes and courses universities offer, the integration with modern tools and 21st century skills. Online education creates new opportunities for students to access and complete a course.

Comments

Many student satisfaction surveys exist both at the institutional level and national level. Moreover, in some countries student satisfaction surveys are used to inform new students about the quality of higher education programmes, e.g., the Netherlands[57]. In the UK, with high tuition fees, students are informed about the quality of education programmes according to the "Teaching Excellence and Student Outcomes Framework (TEF)[58]). The awards are judged by an independent panel of students,

[56] http://www.fneb.fr/
[57] https://www.studiekeuze123.nl/de-nationale-studenten-enquete
[58] https://www.officeforstudents.org.uk/advice-and-guidance/teaching/

academics and other experts. Publicly funded universities and colleges in England with a TEF award may charge up to the higher maximum tuition fee.

Student attitude and satisfaction towards digital education is in general positive. However, some case studies also show that students prefer traditional education, and sometimes have misconceptions of the effectiveness of new modes of teaching. Even if they are informed that for example students working in a constructivist framework perform better at the exam (see Danish case).

Recommendations

Following actions can be recommended:

- In mainstream degree education, students appreciate lectures and face to face contacts with the teaching staff, next to online learning activities. Universities should organise blended education for them, corresponding with students' needs and the characteristics of the course.
- Universities and teaching staff should demonstrate to students the relevance of blended education for enhancing the quality of education, access to many more study opportunities and the efficiency of studying in a blended environment.
- Students at work require more flexibility in order to facilitate access to study. University should use more online approaches where more flexibility is required, e.g. also in short degrees for continuous professional development
- Universities should raise awareness amongst students and teaching staff about the most efficient and effective pedagogies (e.g., learning communities, scalable assessment and feedback structures, etc.)
- Universities and staff should accommodate interactivity in all formats of teaching and learning. Interactivity is at the core of any formal education. In online learning, this is incorporated in the sequence of learning activities to be designed.
- Students require education, which will not augment the workload and nevertheless is effective. This is also the case for teaching staff. Innovation should take this into account.

5. Continuous education and continuous professional development

This section discusses the role of digital education in continuous education (CE) and continuous professional development (CPD) and how short degrees can enhance a more scalable and systematic offering. In this area, the deployment of online short degrees is an important flexible and scalable solution for learners in the course of their career. Short degrees respond to the demand of large numbers of students for enhancing their knowledge and skills to meet economic, cultural, social or personal needs or interests. They vary in number of credits (largely between 5 and 60 ECTS). To be effective, they are to be developed according to a coherent design with specific pedagogies, adapted to the target groups envisaged and possibly in collaboration with stakeholders (businesses, innovation managers, etc.).

Cases from selected countries

France

In *France,* the merging of universities has created many challenges, but also strong opportunities for curriculum innovation and lifelong learning (including continuous education/CPD and open education). The number of online courses is likely to increase and new flexible ways of studying will be available for large numbers of non-traditional students. Regional embedment is one of the main objectives of the Excellence Initiatives (IDEX) and the corresponding funding streams.

Denmark

Danish institutions have special continuous education programmes for off-campus students (non-mainstream programmes). University colleges offer diploma programmes (60 ECTS), and universities offer professional master programmes (60 ECTS). Most of these programmes are offered as blended learning. For all *Danish* institutions, blended and online education is significantly more developed in continuous education.

Greece

All the *Greek* Universities are developing online short degree programmes for continuous education. The University of the Aegean and some other small or medium size universities, such as the Universities of Thrace and of the Ionian Sea started in 2017 to offer online courses for continuous education.

The E-Learning Center of the University of Athens offers hundreds of online degrees. Since 2015, the historical and one of the largest universities in Greece has deliberately entered the world of online higher education, not for mainstream degrees, but for short degrees in lifelong learning. It has established a specific unit for online/distance education dedicated to lifelong learning programmes.

Portugal

In *Portugal,* open and flexible education is seen as an opportunity to reach out to students beyond the region of the university. Blended and online learning are a way to reach audiences that want to continue studies in the mainstream and in continuous education. The creation of short courses for free generated a greater diversity, reaching more target audiences.

Finland

In *Finland*, the universities of applied sciences believe that in the future, an increasing income will come from the areas of lifelong learning, adult education and international education, not from mainstream degree education. At the moment, all universities of applied sciences in *Finland* offer the same kind of studies all over the country. The Rectors' Conference of Finnish Universities of Applied Sciences (Arene), is creating a model in which online study domains will be centralized and each university will organise only some study domains.

Austria

In *Austria,* there is a wide variety of face-to-face short programmes in Austria, but so far not many in an online format.

Catalonia

The *Universitat Oberta de Catalunya* (UOC) offers online short degrees, for example in Food Security Management, Language Learning and Technology.

United Kingdom

The Open University (UK) has a long list of online modular provisions, leading to postgraduate diplomas (typically 60 ECTS), postgraduate certificates (30 ECTS) and single modules in many dsiciplines. Also,the University of Edinburgh offers the possibility to get qualifications, based on online courses, which constitute together modular online programmes (certificate, diploma, master degree), e.g. in Climate Change Management and Public Health.

The Netherlands

At the *Technical University of Delft*, a strategic framework for continuous education has been developed on the basis of a long-term vision, shared by the entire Board. This includes professional courses and programmes online, leading to certificates and diplomas. Teaching “professional” learners online was a completely new area for this brick and mortar university. In a first phase, the focus was on single courses (e.g., a professional education course, a MOOC). Currently, courses are grouped into short degrees and awarded with a qualification (e.g., certificate, diploma) in diverse areas. With this experiment, TU Delft is trying out things on purpose, in practice at bachelor or master level. ECTS are used, CEU (continuous education unit awards) when only attendance is required.

Many MOOC platforms offer various short degree programmes[59] and even full online programmes[60]. Credits of these programmes are often recognised as part of a post-graduate master[61].

General observations

Universities start to see continuous education and continuous professional development as a new area of higher education, next to degree education. They realize that this is only possible when more courses are developed and higher numbers of students are reached. Only online education creates the flexibility needed, facilitating high numbers of students to access higher education programmes and to combine this with professional activities.

Universities in reform, e.g. in a merger, see this opportunity when developing new policies and strategies for their institutions. They stimulate the development of continuous education programmes and create support centres to make this possible. Online and open education are seen as modalities that provide flexibility in the educational system for non-traditional target groups. They are also important for the regional embedment of universities.

Short term degrees are created, tailored-made for learners at, or re-entering work and responding to their needs. Often, they are integrated in a modular system with consecutive degree levels, e.g. a certificate, a diploma, a master degree. Because of their flexibility and the time needed, they are accessible at a large scale to meet huge needs of the economy and society and can be taken in combination with a job at all stages of life.

Examples of online short degrees are seen both in traditional and in open universities. Open universities from their origin organise flexible education for students at work. They have developed pedagogical and organisational approaches for reaching out to these students and they are used to large scale operations, also in continuous education. Traditional universities are also developing strategies for a systematic approach to continuous education involving flexible and therefore online solutions. Some frontrunners build extension schemes in order to reach-out efficiently to non-mainstream target groups.

The examples given illustrate that online continuous education and CPD are seen as a promising field for universities.

Short degrees and even (post-graduate) master programmes can be linked to MOOCs and online courses to be paid for, as is shown by the (short) degrees of MOOC platforms[62] and other qualifications which can be valorised in broader (master) degree programmes.

Comments

In frontrunner universities, online education is upscaling the area of continuous education and continuous professional development. By the flexibility of online teaching and learning, the access to

[59] Nanodegrees (Udacity), flexible programmes and degrees of FutureLearn, Specializations (Coursera), MicroMasters, XSeries or Professional Certificates (edX)

[60] https://www.class-central.com/report/mooc-trends-online-degrees-corporate-learning/

[61] See: https://www.class-central.com/report/mooc-trends-online-degrees-corporate-learning/

[62] Nanodegrees (Udacity), flexible programmes and degrees of FutureLearn, Specializations (Coursera), MicroMasters, XSeries or Professional Certificates (edX)

education is facilitated, also for learners at work. When courses are well-designed, the quality will be high-standard and the cost will be attainable. Online learning is the only way forward to reach-out to high numbers of students, according to the needs in the economy and in society. It allows universities to organise as well transnational continuous education/CPD, which is in particular rewarding to research-based universities. This responds to the needs of learners at work, who face longer careers and career shifts as well as to the development of knowledge by research and innovation.

Increasingly, universities consider continuous education / CPD as a complementary area of provision next to regular degree education. Moreover, it is expected that the number of students in continuous education / CPD education will overgrow those in degree education, as already is the case in many Ivy League universities in the US[63].

Short (postgraduate) degrees respond to the needs of large numbers of learners throughout their professional career. Knowledge from school or university becomes rapidly obsolete, even more as careers become longer. The needs for education and training in the 28 EU countries are immense and the levels of participation in education and continuous education across the EU are very different.

It is important that short degrees should be awarded with appropriate qualifications (e.g. certificates, diplomas), corresponding with the European Qualification Framework (EQF)[64]. As such, digital learning and the development of (online) short degrees should become part of the Bologna process.

The conceptualization and reflection on the role of online/blended short degrees will promote the systemic development of continuous education and CPD as a new area of provision in higher education, next to degree education and open education. For this development, funding and optimized business models are important[65].

Launching the New Skills agenda, the EU Ministers showed already concerns about "the level of knowledge, competences and skills in a competitive, complex and multicultural world. Europe is also affected by periods of low economic and employment growth, an ageing population, as well as increased migratory flows and low levels of innovation". The Ministers agreed that it is "important to go beyond the immediate needs of the labour market and focus also on those aspects of education and training that are able to drive innovation, entrepreneurship and creativity, shape sectors, create jobs and new markets, empower people (including the most vulnerable)[66].

Next to initial education (bachelor-master), continuous education and CPD from the foundation to the post-graduate level should be integral part of the European Higher Education Area. Up to now, public authorities fail in their engagement to implement policies and strategies for a large-scale deployment of continuous education. Therefore, its take-off is going too slow to respond to the needs of the labour market in due time.

[63] The Harvard Extension school is serving every year more than 20.000 students from more than 120 countries. See: https://news.harvard.edu/gazette/story/2016/04/from-what-we-do-to-whom-we-serve/

[64] http://ec.europa.eu/ploteus/content/descriptors-page

[65] This is a topic in the e_SLP project on short learning programmes, coordinated by EADTU and supported by the European Commission

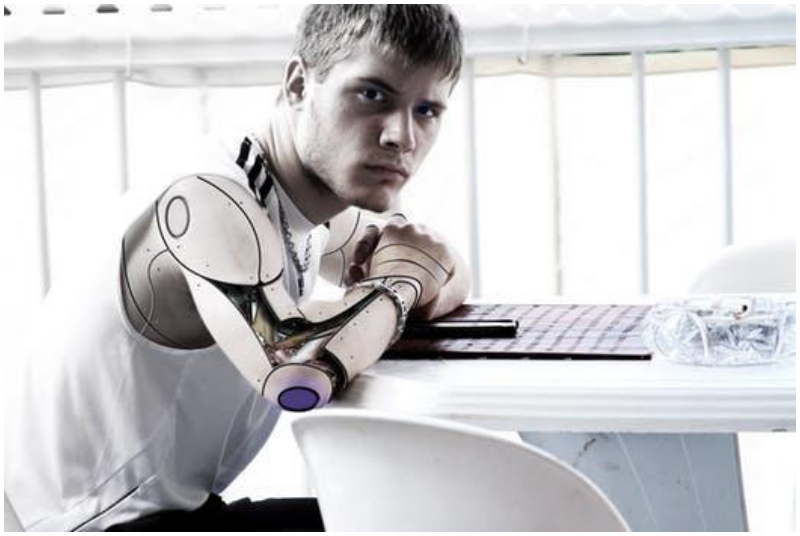
[66] Communication from the Commission, European Commission, A renewed agenda for higher education See: https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1496304694958&uri=COM:2017:247:FIN

Therefore, governments and universities should start a dialogue to organise large scale continuous education and CPD, in close cooperation with companies, public employment services and other stakeholders.

Recommendations

Following actions can be recommended:

- Develop a vision on continuous education and continuous professional development to meet the needs of alumni and other professionals.
- Appoint a vice-rector for the development of the area of continuous education / continuous professional development and support massively this leadership.
- Develop institutional policies and strategies for the large-scale development of continuous education / CPD in the university, using blended and online teaching and learning formats
- Create synergies, both organisational and at course / module level, between mainstream degree education, open education and online provision of continuous education / CPD maximising the use of opportunities of digital education
- Integrate online courses for continuous education and CPD in modular programmes, leading to qualifications which fit into the European Qualification Framework
- Create a culture of innovation and attractive business models for staff to develop short degrees for continuous education / continuous professional development
- Invest in a university extension structure, serving external students and supporting the delivery of continuous education and continuous professional development programmes
- Collaborate with external stakeholders for the development and delivery of continuous education and continuous professional development programmes.



6. Online open education – OERSs and MOOCs

In discussions about open education, experts nowadays usually refer to open educational resources (OERS) and Massive Open Online Courses (MOOCs).

OERS are generally described as online learning materials that can be retained, reused, revised, remixed and redistributed for free. They can also be a source for independent learning for learners who study an OERS outside any formal educational setting. They are easily and freely accessible by all on the internet. As there is no facilitating interaction with a teacher, OERSs *in se* are not considered as education.

MOOCs are offered online and for free, providing massive and open access to learning opportunities for all. As MOOCs are full courses including feedback, (scalable) tutoring and exams, these courses are considered as education, as learners engage in a teaching and learning process.

This section discusses both types of open education after short introduction on open education.

Open education

In online (and distance) education, learning is not constrained by time and/or distance. The label "online" applies to the delivery of the course material as well as to ICT-mediated teacher-learner and learner-learner interactions to facilitate the learning process.

It is important to recognise that online education is not the same as *open education*. The aim of open education is to increase the access to and the successful participation in education by removing barriers and offering multiple ways of learning and sharing knowledge. Open education by OERS and MOOCs are tackling the cost barrier by providing education (al material) for free: "anyone with an internet connection can access it without fee for study". However, openness is not simply a matter of barriers to access related to cost, licences or technological aspects; it also has to do with inherent cultural, social and institutional challenges (see for example Mulder & Jansen, 2016).

For almost all universities that have taken up the challenge of MOOCs and OERS, open education is a new area of provision, next to degree education and continuous education and continuous professional development.

OERSs and MOOCs are excellent for promoting lifelong learning. They continuously offer flexible opportunities for people who want to gain new knowledge in a specific area. But, they can also be integrated in degree education and continuous education/CPD. Both are innovative pedagogies.

Open Educational Resources

One of the most internationally recognised definitions of open educational resources is contained in the 2012 Paris OERS Declaration (UNESCO & COL, 2012):

> "[OERS are] teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions. Open licensing is built within the existing framework of intellectual property rights as defined by relevant international conventions and respects the authorship of the work".

Another term frequently used in this context is Open CourseWare (OCW), whereby the materials used in the course are published as OERS.

Examples of open resources are open textbooks, syllabi, lecture notes, assignments, tests, but also multimedia in education such as audio recordings, video recordings and animations.

Cases from selected countries

The following examples are illustrative for many European countries:

A national initiative from the state

France

In *France*, the universities produce many open educational resources through the Universités Numériques Thématiques (UNTs)[67]. Open educational resources are developed and published by universities which are registered in one of the thematic digital universities (UNT): Aunège (Economics, Management); UNESS (Health and Sport); Unisciel (Sciences); UOH (Humanities); IUTenLigne (Educational Technology); Fondation Unit (Engineering and Technology); UVED (Environment and Sustainability); UNJF (Law). This is supported by the French government.

A national collaborative initiative by universities

Austria

In *Austria*, Open Education Austria is a collaborative initiative of the Austrian universities to develop a national infrastructure for creating, sharing and using open educational resources. It was launched in June 2016 with a grant of the Ministry of Science, Research and Economics. The expected completion date is December 2018. The mission of the project is to boost the overall quality of teaching and learning in Austria, as well as to expand the access to best practice in education. The immediate goal is to design OERS which can prepare students for admission to studies in life sciences and STEM fields. Of course, the material can also be re-used in teaching.

Institutional open educational resource communities

France

SEMM, the Education and MultiMedia Service at the *University of Lille*, produces digital resources for blended on campus education and for distance education, in particular videos. These are distributed through a podcast, which has replaced the establishment's WebTV (700 available videos). Free access to these resources varies, depending on the school. Some teaching staff has been reluctant to make their material available. Others don't want to use someone else's materials. However, the video production can't meet the demand of teachers to develop multimedia resources. The different schools in the university agree that it is necessary to share practice and to improve the initiatives taken by staff, supported by the Centres for Educational Innovation.

Catalonia

[67] http://univ-numerique.fr/

In Catalonia, UAB participates in the world-wide OpenCourseWare (OCW) initiative[68]. However, at the institutional level, there is no strong OERS policy. Some teachers upload them in the library or in the so-called MDX ("Materials Docents en Xarxa", www.mdx.cat). One of the most important barriers to publish OERS is some hesitance regarding the open licence copyright. This is affected by research policies, as researchers' competitiveness up to now was measured by publications in non-open indexed journals. However, most of the interviewed people state that a public university should make visible what it does and provide open content.

OERS and open science

Finland

In *Finland*, higher education institutions produce and use OERS, as is advised by the Ministry of Education and Culture. Connected with this, open science is one of the spearheads of the Finnish science policy and this is promoted by all means available. The Ministry has outlined that Finland should become one of the leading countries in open science. The objective is to have open access to all scientific publications by 2020, including references to OERS[69]. For example, Open Science Principles[70] at the University of Jyväskylä require that all research publications are self-archived in the university repository JYX.

General observations

Open educational resources are important for sharing course material and enhancing access learners to them. It is a promising movement, which started at MIT in 2002 with OCW initiative. ICT provides a great potential for building OERS policies at institutional, national and international level. The application of open licenses to educational materials introduces significant opportunities for more cost-effective creation, use, adaptation and quality of those materials.

OERS play a more important role in countries where national initiatives are taken by the state or by a collaboration between universities. These initiatives have a greater and more structural impact on practice then when they are left to the individual universities or teaching staff only.

Comments

Sharing resources is an important enabler for course design and development in a university (Laurillard, 2015), as was already expressed by teaching staff in a survey of ALT[71].

Universities and teaching staff interviewed have an interest to use and produce OERS. But, when initiatives are not taken at the state or institutional level, individual teachers lack a structural and stimulating environment to develop OERS.

One of the most notable institutional OERS initiatives is OpenLearn from the Open University[72]. It delivers a large thesaurus of best course material of the OU (more than 1000 courses in different

[68] http://ocw.uab.cat/

[69] http://www.aka.fi/en/about-us/media/press-releases/2017/academy-of-finland-refines-its-policy-on-open-access-publishing/

[70] https://openaccess.jyu.fi/en/self_archiving/open-science-principles-at-the-university-of-jyvaskyla

[71] Laurillard, D & Deepwell,2014, M., ALT survey on the effective use of learning technology in education. See: https://www.alt.ac.uk/sites/alt.ac.uk/files/public/ALTsurvey%20for%20ETAG%202014.pdf

[72] See: http://www.open.edu/openlearn/

disciplines), allowing learners worldwide to take these courses and other OU multimedia content for informal learning. The courses function also as a taster for students seeking to enrol in an OU programme. OpenLearn benefits from the huge tradition in open and distance learning pedagogies in Europe. OpenLearn OERSs are also used in the TESSA project of the UKOU[73], reaching out to hundreds of thousands of teachers in a collaborative network of universities in 10 countries in Sub-Sahara Africa, delivering in service education.

A recent publication of IPTS on Policy Approaches to Open Education[74] lists case studies on open policies of 28 European countries. It was noted that different supporting policies exist related to open education, OERSs, open access and open science policies. One of the conclusions is OERS should be considered as a part of broader vision and policies on open education. In policies, open education is often still limited to OERS and open content only. IPTS recommends that "the EC will have to take steps to both increase awareness on open education and increase the frequency of studies and peer - learning activities among member states" to promote open education and OERS.

Recent developments in the open science policy of the European Commission[75] will change the culture in universities with regard to all research-based resources[76]. Open educational resources can be embedded in this movement in the coming years.

The 2012 Paris OERS Declaration and the Ljubljana OERS Action Plan 2017[77] give recommendations related to policies on OERS. An OERS action plan is currently under development.

An overview of OERS initiatives worldwide is provided by the OERS Worldmap[78], funded by the Hewlett Foundation.

Recommendations

- Create awareness and disclose best practices close to the direct work of teachers as an important stimulus at the micro level, e.g. in subject area communities
- Develop support structures and incentives for teaching staff to share course(material)s and to publish and re-use course material as OERS;
- Embed OERS in an overall strategy related to open education and open access/open science policies;
- Collaborate cross-institutionally and internationally to ensure sustainable business models and inclusive and equitable access to high quality OERS;
- Use OERS as an instrument in large-scale international collaboration, next to online courses and MOOCs.

[73] See: http://www.tessafrica.net/home
[74] https://ec.europa.eu/jrc/en/publication/policy-approaches-open-education-case-studies-28-eu-member-states-openedu-policies
[75] COMMISSION RECOMMENDATION (EU) 2018/790 of 25 April 2018 on access to and preservation of scientific information. See: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32012H0417&rid=1
[76] LERU, Open Science and its role in universities: a roadmap for cultural change.
[77] https://en.unesco.org/news/ljubljana-OERs-action-plan-2017-adopted-support-quality-open-educational-resources

MOOCs

MOOCs are online courses designed for large numbers of participants, which can be accessed by anyone anywhere as long as they have an Internet connection, are open to everyone without entry qualifications and offer a full/complete course experience online for free (Mulder & Jansen, 2015). MOOCs are offered online only, providing massive and open learning opportunities for all. It should be noted that whilst most MOOCs are offered at no charge, some are fee-paying for certain learning activities, e.g. the final assessment or examination (for which credentials might be available).

Hence, a MOOC differs from a "regular" online course in at least four aspects:

- It is designed for, in theory, an unlimited number of participants and as such requires the scalability of the education services delivered by the platform or learning environment.
- It is accessible at no charge.
- It requires no entry qualifications[79].
- All elements of the course provision are provided fully online

Cases from selected countries

The following examples of various European countries illustrate recent developments.

France

In France, many universities produce MOOCs, especially in cooperation with the national FUN platform for MOOCs. There are various motivations for developing MOOCs. A MOOC can be driven by a teacher's initiative or it can promote a university or a university programme. It can also respond to a request of the government, particularly related to skills development, e.g. a specific computer certificate of a certain level, responding to some standards of computer competence. A MOOC can also be the result of a partnership, particularly in the context of the French digital thematic universities (Universités Numériques Thématiques or UNT), which since a long time produced already OERSs. MOOCs are also (re)used in mainstream programmes and are an instrument to motivate students.

Austria

In *Austria,* the University of Graz (KFU), together with the Graz University of Technology, have established the first and only Austrian platform for MOOCs, called iMooX. It is based on project funding of the regional government of Styria. The Graz University of Technology mainly delivers technical know-how and technical resources, whereas KFU is in charge of the development of the courses. Depending of the course, students gain ECTS points by completing a MOOC by taking an examination. Some MOOCs can be credited against ordinary (elective) courses.

This early engagement in MOOCs was seen as an opportunity to experiment and to gain experience with new modes of teaching and learning. Moreover, all iMooX learning materials

[79] This does not imply that no prior knowledge is needed.

meet the requirements of the Creative Commons License that allows for the free (re)use of the material (and are as such also OERS).

The Austrian Universities' Conference (UNIKO) has published criteria and guiding principles for a quality ensured usage of MOOCs[80]. It includes how MOOC (micro-) credits can be counted against courses and how examinations can be taken for MOOCs in comparison with traditional courses. The engagement with MOOCs offers a good playground to experiment, to gain experience and to identify the features of MOOCs and the opportunities and barriers that may arise.

Catalonia

In *Catalonia*, UAB produced and delivered some MOOCs through Coursera. They were seen as an opportunity to improve teaching through innovation. Finally, it was concluded that producing a MOOC is too expensive for the benefits it provides.

URV participated in the governmental programme UCATx[81] for developing MOOCs, but it finally decided to discontinue this as well, because of the costs against the benefits perceived. Only some individual initiatives remain. There is currently no strategy in favour of MOOCs in Catalonia.

Portugal

The two institutions interviewed in *Portugal* don't have overall policies regarding MOOCs. Nevertheless, there are some local initiatives and projects, where institutions are involved in. These experiments are considered as successful and will be carried out again. The main goal is to gain experience in developing MOOCs and increasing the visibility of the university (using MOOCs as a marketing instrument).

Denmark

In *Denmark*, none of the institutions have MOOC development as an institutional strategy. The main reasons for this are a lack of funding and a low return on investment (e.g., attracting students and branding). MOOCs are not felt as pedagogically innovative. Some Danish institutions are offering MOOCs, while a university college has opted to collaborate on SPOCs (Small Private Online Courses) for already enrolled students.

Finland

In *Finland,* the Ministry of Education and Culture organised special project funding for the creation of MOOCs, which has now ended. SAMK created five MOOCs with some initial funding for teachers (now stopped) while at JAMK four MOOCs were created in Finnish. The Open

[80] http://uniko.ac.at/modules/download.php?key=6436_DE_O&cs=1F12
[81] http://ucatx.cat/

University of the University of Jyväskylä and the Jyväskylä University of Applied Sciences developed five MOOCs in English, sharing content and costs. Aalto University, which is strong in blended learning and flipped classrooms solutions, doesn't consider MOOCs as a priority.

Greece

In *Greece,* MOOCs are not yet considered as an integrative part of the official policy of the Ministry. The Hellenic Open University and the University of Crete have a strategy for the development of MOOCs. The HOU has created a dedicated unit (with 5 people involved) and has launched its first 6 MOOCs in 2016 and 2017. The University of Crete produces some very low cost and very popular MOOCs in Greek History and Nanotechnology. There is an enthusiasm about MOOCs in the universities visited, not only for MOOCs produced in Greece, but also for the MOOCs available on the web.

A European MOOC Consortium[82] is created, consisting of Futurelearn, France Université Numérique (FUN, Ministry of Higher Education), Miríadax (Telefonica Educacion Digital), EduOpen (Consortium of the University of Foggia with 15 other Italian universities) together with the OpenupEd portal (EADTU). These platforms support universities in developing and delivering MOOCs. They represent more than 280 universities together, reaching out to already 15 million students. EMC partners are working together to optimise services on more structurally solutions to reach the labour market. EMC partners are working on a structural collaboration with public employment services active on the national labour markets, with companies and with a sectoral organisation for companies and SME's.

General observations

Although MOOCs are becoming a main policy at an increasing number of universities, the examples above illustrate that not all universities have a positive experience with MOOCs. However, higher education institutions with a strong involvement and a distinct MOOC strategy in general agree that MOOCs contribute to the core mission of universities by:

- Sharing education with all citizens by open accessibility in a context of lifelong learning (open education),
- Transferring and valorising innovative knowledge to enterprises, offering modern ways for students to acquire and evidence skills to employers (continuing education, CPD)
- Integrating MOOCs as an enriching learning experience in blended degree education (bachelor, master and postgraduate programmes)

This is also emphasized by the European MOOC Consortium in it is advice to the Bologna Policy Forum on the EHEA agenda[83].

The massive dimension of MOOCs requires the scalability of all educational services delivered. This has resulted in an important digital innovation.

[82] http://eadtu.eu/home/policy-areas/open-education-and-moocs/services/416-the-european-mooc-consortium

[83] http://eadtu.eu/documents/Services/2018_-_Integrating_MOOCs_Bologna_Process.pdf

It is also observed that higher education institutions only have a significant MOOC offering (>10) if a dedicated institutional strategy exists for MOOCs and/or open education in general.

Moreover, the wide-scale production of MOOCs by universities seems to be related to the existence of national initiatives / funding schemes. I.e., national policies and funding have a strong influence on the number of higher education institutions in a country offering MOOCs (e.g., Jansen & Konings, 2017).

Some governments view MOOCs as an effective investment for improving higher education access, quality and affordability, and for addressing the needs of the knowledge society. Educational institutions receive funding from their governments or from various foundations to develop MOOCs. Sometimes, these sources provide funding not only related to MOOCs but to opening up education, online education and/or innovation of education. Some governments contributed to a national MOOC platform (e.g., FUN, France) or fund feasibility studies for such national MOOC platforms (e.g., Portugal, Germany).

Comments

Investments in and the uptake of MOOCs are more and more significant worldwide. Class Central reported that in 2017, 78 million students registered for over 9,400 courses developed by over 800 universities. The MOOC partners in the EMC Consortium organise about 1000 courses for 15 million students up to now. MOOCs are here to stay and they are becoming an increasingly important part of our educational system. Consequently, a considerable number of people see MOOCs as a serious option for their (continuous) education.

MOOCs are part of the long history of university extension, open education and widening participation initiatives that have sought to extend access to (higher) education (see for example UNESCO-COL publication by Patru & Balaji, 2016). MOOCs, and open education in general, are providing new learning opportunities for millions of people. In addition, MOOCs are a significant innovation in (higher) education. Therefore, whether or not to develop MOOCs is a strategic decision for education institutions, integrating many policy dimensions. The decision should involve not only experts from various parts of the institutions (e.g., ICT, teaching and learning, marketing), but also the top decision makers.

Several independent European studies[84] conclude that many European higher education institutions are strongly involved in MOOCs and are using MOOCs to innovate education, to offer flexible learning opportunities and to increase their institutional visibility. Consecutive surveys indicate that the most relevant driver for European higher education institutions in providing MOOCs are 'Improving the quality of learning' and 'Need for (e-)skills and jobs'.

A competitive advantage of MOOCs is also their ability to offer just-in-time continuous education/CPD capacity to meet the needs of employers and employees. MOOCs offer a response to the challenge of meeting the needs for flexible knowledge and skills development to cope with a fast changing world. To this end many MOOC platforms offer various short degree programmes[85] and even full online

[84] http://www.openuped.eu/15-english-content/news/256-studies-on-mooc-response-european-universities

[85] Nanodegrees (Udacity), flexible programmes and degrees of FutureLearn, Specializations (Coursera), MicroMasters, XSeries or Professional Certificates (edX)

programmes[86]. Credit to those programmes are often recognised as part of a post-graduate master (see also section 5).

MOOCs also strengthen the participation in knowledge created at other universities as part of virtual mobility schemes. Technical universities have already developed a virtual exchange network[87]. Other universities will follow as virtual mobility becomes increasingly important for all students, next to physical mobility[88]. Different studies reveal that a large percentage of institutions offering MOOCs agrees that it is necessary to offer formal (ECTS) credits next to more informal certificates (e.g., a badge of participation) to MOOC completion. As such more virtual exchange programmes related to MOOCs are facilitated (Jansen & Konings, 2017).

It is expected that MOOCs will have an impact on the further development of formal higher education and CPD, as well as in initiatives to open up education.

The *production costs* for MOOCs and digital education and training in general only break even, when a critical mass of learners is reached. Scalability is a central issue (economies of scale). An efficient national or cross-national collaboration can strengthen the scalability of MOOCs. This collaboration is already provided by the large MOOC platforms, e.g. by the integration of delivery services. As a matter of fact, this leafs out small language areas. Therefore, new national initiatives for MOOCs collaboration are important as well.

With regard to credits for MOOCs, the first CPL study (Haywood, 2015) stated that "the possibility of gaining credit from study on a MOOC does exist, but to a limited extent." As a matter of fact, the key issue on crediting MOOCs with ECTS points is related to the reliability and validity of MOOC assessments. In the meantime, this has drastically changed as many MOOC providers are now offering the possibility to get specific assessments for learners who want to be assessed, enabling the crediting of these course offerings. Moreover, they offer various short degree programmes[89] and even full online programmes, for which MOOCs are assessed according to all standards. This has led to significant adaptation of quality assurance processes both by the big MOOC platforms and by the universities offering these MOOCs/programmes and recognising credits given[90].

A quality assurance framework is an important component for an (inter)national MOOC strategy. Such a framework does not yet exist for MOOCs, as they are a very recent development. Successful quality models exist for online education and can be carefully adopted for MOOCs. An OpenupEd quality label for MOOCs is already developed, based on the E-xcellence framework[91].

The European MOOC Consortium (EMC) will be developing a framework for the recognition of credentials for MOOCs, and by working towards the adoption of that framework by stakeholders across Europe.

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[86] https://www.class-central.com/report/mooc-trends-online-degrees-corporate-learning/
[87] See: https://www.tudelft.nl/studenten/onderwijs/virtual-exchange/
[88] Ubachs, G. & Henderikx, P., The EADTU Mobility Matrix. See: https://eadtu.eu/documents/Publications/VM/2018_-_EADTU_Mobility_Matrix.pdf
[89] Nanodegrees (Udacity), flexible programmes and degrees of FutureLearn, Specializations (Coursera), MicroMasters, XSeries or Professional Certificates (edX)
[90] http://eadtu.eu/documents/Publications/Quality_Frameworks_for_MOOCs_Springer.pdf
[91] https://www.openuped.eu/quality-label

Recommendations

The following effective actions are recommended for the further developments of MOOCs in Europe:

- National or regional (language-bound) policies and strategies are needed in order to stimulate and support universities to develop OERS and MOOCs for open education, continuous education and continuous professional development and innovation in degree education. This might include the establishment of new platforms for the delivery of MOOCs in some language areas and for creating a dialogue with stakeholders and users in society;
- Universities should develop a framework for open education (OERS, MOOCs), next to continuous education and degree education, each area interplaying with the others. This framework should stimulate and support teaching staff to develop MOOCs (technology, innovative pedagogies);
- Use MOOCs in international collaboration and virtual mobility schemes;
- Universities and quality assurance agencies should collaborate with regard to quality assurance and benchmarking good practices with regard to OERSs and MOOCs (quality criteria and indicators, quality benchmarks, quality label, institutional quality review);
- Capitalize on new developments in e-assessment (e.g., TESLA) in order to make assessment more reliable and valid as a condition for crediting and recognizing MOOCs;
- Develop collaborative projects for opening up MOOCs and digital education provisions for the EU labour market, e.g. approaches to the co-creation of MOOCs for continuous education/CPD, specific delivery modes of MOOCs by employment services, professional organisations and within companies; the exchange, translation and localisation of MOOCs for implementation in different language areas, etc.;
- Stimulate the (co-) development, (co-)delivery and use of MOOCs for specific audiences, e.g. sectorial organisation or the public sector (health care, teacher education, etc.);
- Empower universities, the corporate sector, employment services and other stakeholders, exploring modes of the (co-)development and the (co-)delivery and the use of MOOCs;
- Increase the accessibility and visibility of MOOCs at the European level;
- Evaluate MOOCs on their effectiveness and impact in all areas of educational provision.

7. New modes in international education

Internationalisation is transforming education and research. The number of international students doubled from 2001 to 2014 to over 4.3 million worldwide[92].

Online and blended education is increasingly changing the landscape of internationalisation and student mobility. Online education has no national boundaries as MOOCs amply demonstrated. Blended and online international education adds scale (access, flexibility), quality and cost-effectiveness to institutional initiatives. It Initiatives can range from transnational education to international collaboration and mobility through virtual seminars, blended or online courses, short postgraduate) degrees, master and doctoral programmes. They can involve multiple universities in a network simultaneously.

The development of blended and online international higher education is growing fast, alongside with the development of blended and online teaching and learning in the mainstream. The availability of online courses is a condition for its development. Institutional internationalisation strategies are increasingly oriented to blended and online transnational education and fuel the development of online solutions. They increase not only the accessibility, but also the quality of provisions by innovative international pedagogies.

Cases from selected countries

In this study, some examples on blended and online international higher education are found:

Finland

In *Finland*, universities and universities of applied sciences offer degree programmes in English. They also have double degrees with international partner institutions. There are no legal barriers related to international online or blended education. The Ministry of Education and Culture established a Team Finland Knowledge network to enhance Finnish education and research cooperation and the export of Finnish knowledge, expertise and educational innovation[93]. The network will operate in all parts of the world.

The University of Tampere (UTA) organizes a *Joint Master's Programme in Comparative Social Policy and Welfare* (Tampere, Vilnius, Linz)[94]. This is a blended programme, accessible for international students. It includes online courses, two face to face intensive programmes and virtual mobility schemes. The programme aims to enhance students' career prospects as highly qualified sociologists and social policy/welfare experts in national, European or international organizations. The students will be able to continue their studies at the PhD level.

More generally, the University of Tampere is also recognizing the need to include international online learning as a mandatory part of the curriculum. This will require long-term international partnerships.

[92] OECD (2013) Education Indicators in Focus: "How is International Student Mobility Shaping Up?"
[93] See: https://minedu.fi/en/article/-/asset_publisher/team-finland-knowledge-verkosto-lisaamaan-suomalaisen-osaamisen-nakyvyytta-ja-vauhdittamaan-vientia
[94] See: http://www.cosopo.lt

A particular example of virtual mobility at Tampere University is Coriolanus Online (Tampere, Coventry). It is the first part of the two-year Immersive Telepresence in Theatre project, which in 2017 continues with King Lear, another Shakespeare play[95]. Student actors of both universities cooperate with the support of a "telepresence" technology and virtual mobility. At first, this technology was called "virtuality", but telepresence is now the commonly used concept as the project uses real spaces which are joined via technology. Coriolanus Online brought the students from Tampere in direct contact with a living Shakespeare tradition in Coventry, instead of flying in experts from Coventry to teach and play in Tampere.

The Sakakunta University of Applied Sciences in Pori (SAMK) currently offers five online courses in English accessible for international students in partnership with institutions abroad in the areas of logistics, healthcare, welfare and tourism. The latter two also include virtual mobility schemes[96]. Virtual seminars and online learning communities are arranged.

Aalto Online Learning of Aalto University has around twenty online international courses and is piloting with 60-70 other online courses, targeting hundreds of courses by 2020. This is seen as a fresh start in their internationalisation efforts.

France

In *France*, universities develop a pro-active policy with regard to international education, supported by AUF (Alliance universitaire de la Francophonie) and IFIC (Institut de la francophonie pour l'ingénierie de la connaissance et la formation à distance). Online education is used as a tool enhancing international collaboration. The University of Lille has signed agreements with other institutions, e.g. for the development of *online curricula* in biology and in sustainable development, with a bilingual international team.

Portugal

In *Portugal*, the offering of *online courses* is considered as a support strategy for internationalization. In the case of traditional universities, face-to-face classes and education of international students have a follow-up at a distance.

At UAb the use of a *fully online pedagogical model* permits a considerable number of Portuguese speaking students to access its programmes from abroad, e.g. Latin-American and African countries. Furthermore, blended and virtual mobility is established between higher education institutions.

Catalonia

In *Catalonia,* UAB does not organise *international courses/programmes online* yet, but the Strategic Plan has provided the launch of online programmes next year, including the delivery

[95] See: http://telepresenceintheatre.coventry.domains/uncategorized/hello-world/
[96] See: http://www.samk.fi/en/research-and-cooperation/international-projects-and-partners/

of more than 20 *MOOCs* in English by the Postgraduate School on the Coursera platform. UAB is involved in several Erasmus+ projects. Most of these activities are supported by the UAB online platform.

URV is introducing an *online Ph.D. programme*. Also, coordinators of master programmes' can recognize online courses from abroad. International students demand master programmes in English. Currently, they have ten master programmes in English and they plan to have more programmes online. Quality assurance is guaranteed by the standard AQU procedures.

Austria

In *Austria* staff and student mobility is mainly organised within the framework of Erasmus+. To accommodate education to international students, universities intensify their efforts to make (more of) their lectures available in English. There is no kind of "virtual Erasmus" so far that would enable people to study international modules online or via distance learning. An exception are the *distance courses* taken at JKU from the FernUniversität Hagen by approx. 300 students through virtual mobility within their JKU degree programme.

For the future, universities consider the integration of online or blended courses from other international universities in their respective curricula.

Greece

In *Greece*, the Masters Programme in Neurosciences of the University of Athens is a good example of an international blended degree. HOU has *common online programmes* with two universities in Cyprus and one in Poland.

Next to these examples, we highlight some other good practices in blended or online international higher education.

Online transnational education

United Kingdom

Probably the oldest international distance education operation in Europe is the *University of London (*since 1865), which is federating 18 independent London universities and institutions. More than 50.000 students in 180 countries study at international programmes[97]. Students can take a course independently or be supported by one of the 120 partner universities in a worldwide network, some of which emerged from a former study centre and became a university. The University of London delivers online and flexible international courses in almost all study domains. It is an example of transnational online education.

[97] See: https://london.ac.uk/courses

Virtual exchange scheme with MOOCs

Early 2017, a virtual exchange alliance was launched based on online courses (MOOCs on Edx)[98]. Participating universities are: Delft University of Technology, École Polytechnique Fédérale de Lausanne, Leiden University, Rice University, the Australian National University, the University of Adelaide, Universidad Carlos III de Madrid, Université Catholique de Louvain, University of Queensland, UPMC Sorbonne Universités, Wageningen University & Research, Hong Kong University of Science and Technology.

Students take an online course at a partner university and gain credits for their degree. They learn at their own pace and at a time and place that suits to them. Students need a clear commitment to engage with the course and to stay with the programme, so that they don't miss out on the benefits and the partner universities are able to maintain high-standards of participation and completion. The final examination is face-to-face at each own university.

A Networked online curriculum

EDELNet *(European Distance Education in Law Network)*[99] is a long standing strategic partnership with the Universidad Nacional de Educación a Distancia (UNED), Fernuniversität Hagen and the Open Universiteit of the Netherlands, embracing the bachelor, master and doctoral level in law studies. It is implementing an ambitious scientific and pedagogic concept of blended active Learning and student oriented teaching. It facilitates a personal learning path with an emphasis on interdisciplinarity and intercultural communication skills as a basis for a better understanding of each other's legal cultures and practices throughout Europe and beyond. In order to achieve these goals, EDELNet comprises the development and implementation of virtual and face-to-face teaching and learning activities and courseware in key methodological and substantive areas of law, including language competences, intercultural communication skills and interdisciplinary methods of knowledge production applied to legal practice and scholarship. Face to face components are mainly Summer and Winter Schools.

A European Virtual Seminar

The European Virtual Seminar for Sustainable Development (EVS) exists more than 10 years, fostering an international, multidisciplinary dialogue on sustainable development among students from all over Europe by using modern ICT and the internet. In 2017-2018, the EVS was organised by Open University of the Netherlands (EVS coordinator), Carl von Ossietzky Universität Oldenburg, Charles University in Prague, FernUniversität Hagen, University of Graz, Universidade Aberta, University of Antwerp, University of Bucharest, University of Maribor, University of the Aegean. Every year, other universities can participate as well.

E-learning enables communication and interaction between students and teacher, and between students, to be time- and place-independent. The EVS might be described as a new

[98] See: https://www.tudelft.nl/studenten/onderwijs/virtual-exchange/ and http://www.anu.edu.au/students/careers-opportunities/global-programmes/virtual-exchange-alliance

[99] See: https://blog.fernuni-hagen.de/edelnet/about-us/

method to foster a dialogue between a learning community of geographically distributed students, and consists of the following components:

- learning community of students (and staff) of different nationalities and from different cultural and disciplinary backgrounds;
- learning process that supports collaboration between geographically distributed students;
- learning content that consists of authentic, current scientific or societal problems;
- learning technology based on modern ICT and the internet that facilitates collaboration, communication and interaction between students (and staff).

Topics for 2017-2018 were: Decoupling of Environmental Pressure from Quality of Life, Geoconservation in Hateg Country Dinosaur Geopark, Urban Waste Prevention, Innovation in European Nature Conservation Policy, Resilient Coastal Regions, and Sustainable Tourism and the Region.

A think tank

The *KU Leuven – Stellenbosch University Think Tank* is an extra-curricular and interuniversity honours programme in cooperation with Stellenbosch University (South Africa)[100]. The programme overarches all faculties. Thus, it has an eminently multidisciplinary character. Each year, both KU Leuven and Stellenbosch University select a maximum of 15 students out of all applications. The total group of 30 students will work together over the course of 10 months (from February to November) and will develop their own research project on a central theme. The participants are assisted by an interdisciplinary academic team of coaches, led by an academic coordinator. At the end of the project, the results and findings are presented to the public during a joint event.

The collaboration takes place via institutional online platforms and tools. In addition, both groups of students will meet each other twice a year: once during the spring semester for a short focus week and once during the fall semester for an intense workshop week, culminating in a concluding event that will give them the opportunity to present their findings to the public. The proceedings of the programme are in English.

Subjects so far were: Making the City of the Future 2015); Brave New World Merging technology and society (2016); Art & Science: An Enduring Relationship (2017); The Voice of the People: Izwi labantu – Stem van het volk – Vox Populi – Die stem van die mensen

General observations

In many countries, online international programmes and virtual mobility are not yet well developed compared to the Anglo-Saxon world, notably in the UK and Australia where they are part of an "educational export business model".

Nice examples of (partly) joint or networked master curricula are reported. It is suggested that institutional strategies will expand these initiatives. In some countries, like France and Finland, these

[100] See: https://www.kuleuven.be/english/international/thinkthank/index

might be embedded in national strategies. However, in most European countries there seems to be not enough national ambition and support to stimulate internationalization or to increase international student numbers. This is contrasting with the general trend of European cooperation and globalisation in other sectors of society.

MOOCs contributed to changing the scene of internationalisation online.

Virtual mobility is breaking through in all study domains, even in fine arts as demonstrated by the Coriolanus project. It should be noted that this is only possible when enough online courses are available, which is not the case. Only the distance teaching universities have a complete offer of online education in all areas. Cooperation with these universities is an opportunity, not only with regard to non-traditional target groups. Moreover, these universities offer expertise in online teaching and learning, also in an international context.

Interviewees recognise that new modes of teaching and learning increase the possibilities of international cooperation in partnerships and networks. Institutions are experimenting with (multi-partner) initiatives, for example by organising innovative international education ranging from virtual seminars, think tanks, discussion groups and projects to online/blended joint degree programmes with virtual mobility schemes.

Comments
Internationalised higher education could be enriched through virtual individual exchange, networked curricula and online mobility and cooperation between universities and businesses could be organised (Haywood et al., 2015).

Experiments with Nanodegrees (Udacity), flexible programmes and degrees of FutureLearn, Specializations (Coursera), MicroMasters, XSeries or Professional Certificates (edX), and short degrees with small credit units add to the opportunities of internationalisation in the very near future. This will lead to greater choice and more diversity in the models used in internationalisation. It will offer considerable opportunities for relationship building through international partnerships, networks and alliances.

EADTU has developed a Mobility Matrix discussing the opportunities of physical, blended and virtual mobility in collaborative networked and joint programmes[101], including joint doctorates. Also, a LERU advice paper was published in this matter[102].

European policies

Increased mobility, both physical and virtual, will be a major feature of European higher education as is shown in the new Erasmus plans of the European Commission.

This is stimulated by the policies and strategies of the European Commission. Following a recommendation of the EU Summit (14/12/2017), the "European Universities" initiative is taken.

[101] Ubachs, G. & Henderikx, P., The EADTU Mobility Matrix, 2018.
https://eadtu.eu/documents/Publications/VM/2018_-_EADTU_Mobility_Matrix.pdf
This mobility matrix will be completed with examples of good practice and innovative international pedagogies which will be produced by the Task Force Virtual Mobility of EADTU. See also some examples at https://www.distancelearningportal.com/articles/188/virtual-mobility-and-international-teaching-and-learning.html

[102] De Moor, B. & Henderikx, P., International curricula and student mobility, LERU Advice paper Nr.12, LERU, 2013. See: https://www.leru.org/files/International-Curricula-and-Student-Mobility-Full-paper.pdf

European universities are conceived as small alliances of universities, creating the possibility for students, doctoral students and staff to study, teach and do research in any of the partner institutions by joint and flexible curricula and mobility, be it physical, virtual or blended.

The European Commission is about to create a European-wide hub for online learning, blended/ virtual mobility, virtual campuses and collaborative exchange of best practices. This hub will be an instrument to promote online course/curriculum collaboration and virtual mobility in Europe. It will include: blended and digital learning initiatives, blended mobility, training for academic staff and collaborations between HEIs and employers.

EACEA recently published the report on The European Higher Education Area in 2018: Bologna Process Implementation Report[103] confirms that internationalisation is growing across the EHEA but that mobility flows vary considerably from country to country. This is related to substantial differences between countries with regard to for example domestic financial support being portable for credit and degree mobility.

Digital education is important for the further development of the European Area of Higher Education, as is also concluded by the conclusions of Council of Ministers in Paris[104].

Mobility and course and curriculum design

Blended and online learning activities can be organised at different stages in a curriculum. This depends entirely on the design and development of a course and curriculum. Virtual mobility creates flexible, scalable and cost-effective solutions for all types of curricula, especially in collaborative curricula. In principle, all students can participate in virtual mobility. Collaboration and mobility paths can involve multiple universities. International collaboration and mobility can be *physical, blended or completely online*[105].

Education is a design science[106]*.* International collaboration and mobility require a joint course or curriculum design. The educational design of collaborative international curricula and mobility will lead to innovative international policies.

International educational design is based on the standard principles of educational design[107]. In international collaboration and mobility, these principles are affected by the collaborative setting in a partnership:

- *Teaching and learning activities within a course or curriculum are distributed* over different partner institutions (e.g. lecture series and staff mobility, networked programmes) or can be jointly designed (e.g. intensive programmes, virtual seminars, joint courses, joint programmes, etc.).
- In international settings, *more flexibility is needed at the organisational level*, requiring asynchronous delivery because of different time zones and course tables, not excluding

[103] https://eacea.ec.europa.eu/national-policies/eurydice/content/european-higher-education-area-2018-bologna-process-implementation-report_en
[104] http://www.ehea2018.paris/Data/ElFinder/s2/Communique/EHEAParis2018-Communique-final.pdf
[105] See: Ubachs, G. & Henderikx, P., The EADTU Mobility Matrix, 2018. https://eadtu.eu/documents/Publications/VM/2018_-_EADTU_Mobility_Matrix.pdf
[106] Laurillard, D. (2012), Teaching as a design science. Routledge, New York, London
[107] See chapter 4.1

synchronous activities like virtual classrooms. In many cases, more flexibility is also needed because of different levels of prior knowledge.

- *International learning communities* are a particular asset for international education, e.g. in virtual seminars, projects, think tanks, especially also when international staff is integrated. Also, international resources can be brought together by students or international partner institutions, including systematic observations and non-published material.

A systematic approach in course and curriculum design and development will lead to *patterns of good practices or innovative pedagogies* in the field of international collaboration and mobility.

We are at the beginning of new developments, made possible by ICT-based modes of teaching and learning in international education.

Examples of innovative pedagogies in all three Bologna cycles are already shown above, among others:

- Open educational resources
- MOOCs
- Micromasters, nanodegrees
- Virtual exchange scheme with MOOCs
- The European Virtual Seminar
- Blended and online think tanks in a honours programme
- Virtual mobility in fine arts, using telepresence (Coriolanus Online)
- Networked online teaching staff mobility in social sciences
- Multi-level blended and online course collaboration and mobility
- Transnational online degree programmes
- Online short (postgraduate) degree programmes
- Online networked master programme with virtual mobility

Gradually, examples of good practice and established innovative pedagogies will be described in journals and repositories[108].

Recommendations

- National internationalisation policies and strategies for higher education should strengthen the policies of the European Commission with regard to "European Universities" as alliances to enhance the quality of higher education and to harness students with an international awareness and with international competences. Digital education as a complement to physical mobility will support this process and intensify the international learning experience for all students. National strategies should build a framework to promote, stimulate and activate internationalisation in universities.
- Universities should develop leadership with regard to the internationalisation of education and share this at all levels of the institution, meeting the needs of students studying and working in an international environment and developing an international citizenship.
- At the institutional level, international education should be part of mainstream course and curriculum design in education. Support should be given to programme coordinators and teaching staff to develop an international dimension in education, facilitating collaboration in

[108] One of the repositories will be based in EADTU as a result of the running Task Force Virtual Mobility of EADTU.

broader networks and consortia. This collaboration and networking will be facilitated by innovative international pedagogies.

- International relations offices should extend their activities to international curriculum and course development in connection with teaching and learning support services. Especially, they should focus on international collaborative pedagogies and innovative mobility formats.
- Digital internationalisation pedagogies can be blended or completely online, depending on the educational design, taking into account the quality of the learning activities and the needs for flexibility and scalability.
- Benefit of the opportunities with regard to the granularity of digital education. Online collaboration and mobility is possible for all organisational units: learning activities, modules, courses, MOOCs and short degrees, degree programmes (networked, joint) and for all qualification levels: foundation, bachelor, master and doctorate.
- Benefit from specific features of digital education which add to the quality and intensity of education, e.g. inquiry learning activities on the internet, communication with staff and peers, learning communities, e-assessment and feedback.
- Benefit from the flexibility of digital education in international education: next to synchronous, also asynchronous formats, taking into account different time zones and conflicting course tables; adaptiveness to different prior knowledge levels.
- Benefit from the scale and cost-effectiveness of digital modes of teaching and learning in international education. The larger the number of students, the lower the cost per head (lower variable cost). As a consequence, transnational (blended and) online education enables universities to multiply international student numbers while keeping quality under control.
- Benefit from the opportunities of networked and joint educational initiatives by digital education, involving multiple campuses simultaneously, e.g. in virtual seminars and think tanks, or in joint curricula in the framework of the "European universities" initiative.
- Organise on site staff training, bringing in external expertise and stimulate staff to experiment with MOOCs and online short degrees along their research interests.
- Create subject area communities and share online course materials when taking international academic initiatives.
- National policies should enable domestic financial support to be portable for credit and degree mobility.[109]

[109] https://eacea.ec.europa.eu/national-policies/eurydice/content/european-higher-education-area-2018-bologna-process-implementation-report_en

8. Governmental policies

The role of national governments is mainly to create favourable framework conditions to capitalize on the opportunities of digital education in higher education. Governments develop system level policies for higher education (8.1). In many countries, they have specific funding schemes for innovation (8.2). They organise also quality assurance and accreditation agencies to continuously improve education and to guarantee quality levels (8.3) As digital learning has an impact on all aspects of higher education, higher education systems, governmental initiatives are very important to drive higher education institutions to innovation and to stimulate and activate them. Without any government intervention, university leaders miss the alignment they need with the government and with other institutions.

8.1 Governmental policies – innovation at system level

Higher education systems and governmental policies show different profiles in European countries. As a consequence, the impact of digital education on universities is also different.

Cases from selected countries

France – state-led innovation for excellence

In *France,* the major instrument for innovative developments at the system level are the Excellence Initiatives (Initiatives d'excellence, Idex[110]), aiming at 5 à 10 initiatives with a fund of 7,7 milliard €, enabling French universities to compete with the best universities worldwide. These initiatives should lead to an international radiance, a strong cooperation between universities and research organisations and a strong regional coherence. This is resulting in a restructuring of the French university landscape through merging universities. Collaborations could take three forms, depending on decreasing integration features[111]: the merging of several institutions into one, a community of universities (COMUE) and an association of institutions. More universities are opting for the merging option. All have an institutional development contract with the state. The contract is also stipulating new strategies for research and education, including the implementation of new modes of teaching and learning.

Aix-Marseille University was one of the first French excellence initiatives (IDEX): By the AMIDEX[112] programme, the three universities in Aix-Marseille merged into AMU (AMU, 2012). Education reform is a main focus of the new institution and funding is provided. AMU wants to promote active teaching and favours sharing educational expertise and practices. It is aiming at hybrid education, enriched in-class learning and participation in FOAD (open and distance learning).

The new University Lille Nord-Europe (ULNE, 2018) will be realised as a merger between three universities (Lille 1, 2, 3). The long-term educational strategy is to integrate initial education and continuing education, implementing a continuum of innovative educational methods (flipped classrooms, MOOCs, SPOCs, design thinking, learning analytics, adaptive programmes, etc.). Digital teaching will have an important role as one of the main objectives of the I-Site

[110] http://www.enseignementsup-recherche.gouv.fr/cid51351/initiatives-d-excellence.html
http://www.enseignementsup-recherche.gouv.fr/cid101570/pia-1-initiatives-d-excellence-idex.html

[111] Loi n° 2013-660 du 22 juillet 2013 relative à l'enseignement supérieur et à la recherche (Law n° 2013-660 of 22 July 2013 relating to Higher Education and Research)
https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000027735009

[112] Amidex and the Foundation http://amidex.univ-amu.fr/fr/accueil

project[113]. The Centre for Educational and Digital Innovation will disseminate this to all educational programmes. ULNE hopes to become a global benchmark in the area of digital education within 10 years in a partnership with the University of Leuven.

Finland – innovation and collaboration

In *Finland*, the Ministry of Education and Culture has developed a vision on higher education and research in a Strategic Programme, which is the basis for negotiations on performance agreements with the higher education institutions for 2017-2020. The main goal is to enhance the competitiveness of Finnish higher education by collaboration between excellent research and innovation groups in so-called Key Areas.

Universities in Finland have a strong autonomy. The government gives only general guidelines for the development of higher education. Innovation happens bottom up, but also top down. Current policy objectives in the Finnish higher education include digitalizing learning environments.

The Ministry is monitoring the universities by performance agreements. This is encouraging higher education institutions to collaborate and to define their core fields in order to profile themselves. The amount of the strategic funding is 12% of the total funding for the universities and 5% for the universities of applied sciences. The Key Project funding is the most important funding component for new modes of teaching and learning as well. The Ministry of Education and Culture follows actively how digitalization is happening in education and research. However, since the general funding for mainstream degree education is cut, all institutions are struggling with limited resources for mainstream degree education as well as for innovation.

In Finland, online and distance education are a natural part of the regular activities of a university. Hence, no specific framework for online and distance education is provided. Open university education is defined in the legislation as having the same learning objectives as degree education. In 2016, in open education 369 975 credits were awarded by universities and 204 107 credits by the universities of applied sciences. A lot of open higher education is online.

As part of higher education reform, the Ministry of Education and Culture prepared a new collaboration model. Universities and universities of applied sciences can organise education together and can order courses from each other. However, they must organise the main part of a degree programme themselves, based on their educational accountability. This new cooperation model was accepted by the Parliament in mid-December 2017 and will come into effect in January 2019.

Denmark – non-interventionist university autonomy

[113] http://idex-lille-nord-europe.fr/index.php/2017/03/13/une-dotation-de-500-millions-deuros-pour-construire-luniversite-de-lille-nord-europe/

In *Denmark*, the Ministry of Higher Education and Science is shifting its focus towards a stronger emphasis on education. The Ministry has no intention of actively intervening in how higher education institutions organise their educational offerings and on how they teach. This also applies to blended and online teaching and learning. In this respect, the institutions are autonomous.

The Ministry has a strong focus on the quality of teaching, with references to the match between student enrolment and educational programme, to study completion and job rates after the first year of graduation. For example, programmes with job rates below average can enrol less students in the next year. The Ministry supports institutional efforts on quality in teaching, but local initiatives are to be funded within institutional budgets.

It is up to the higher education institutions to develop strategies and initiatives for blended and online education. No national programmes or visions are formulated by the Ministry. The Accreditation Institute has identified some online educational formats that could potentially be utilised to develop new educational programmes, e.g. online courses for international students and collaborative online courses with different universities involved. These ideas are not converted into national strategies, but provide inspiration for institutions. It is up to each institution to further develop them.

Catalonia – negotiated innovation

In *Catalonia*, currently the main objective of the government is to improve the performance of the Catalan universities in order to become excellent institutions in a global context. The legal frameworks are the Catalan university law as well as the Spanish organic law for universities.

The Catalan government promotes the use of ICT both in education and research, but leaves decisions regarding innovation to the universities.

However, one of the current priorities is a new programme on educational innovation. A set of actions is supporting innovation in teaching and learning. Innovation programmes are agreed with the universities through the CIC (Catalan Interuniversity Council). Universities and government have a singular relationship, the government only ruling after negotiation with the universities. The government gives support by providing instruments and funding. One of the outcomes is also avoiding regulations restricting innovative developments.

The main decision of the *Catalan* Government regarding online education was the creation of the Universitat Oberta de Catalunya in 1995, embracing a disruptive educational model. The intensive use of educational technology and the Internet, and a new governance model were the main elements of this successful project. Nowadays, undergraduate online education is almost only provided by UOC, postgraduate online and blended programmes are provided at most Catalan universities.

The government promoted for two years (2015-2017) the creation of MOOCs through the UCATx[114] with calls for proposals inviting universities to develop MOOCs. This fund offered

[114] http://www.csuc.cat/ca/cas-exit/ucatx-la-plataforma-de-mooc-de-les-universitats-catalanes

initial seed money for MOOC development.UCATX is organised by CSUC, which is the consortium of the government and Catalan universities delivering technological services to institutions.

Austria – state supported funding

In *Austria*, there are no barriers for blended and online education from a legal point of view, since the legal framework provides positive possibilities to organise it. The government even requests universities to offer more online education as an overall policy goal. However, online/blended courses and students are not specifically mentioned in the performance agreements. This topic is currently discussed in the framework of the Studyplace Funding ("Studienplatzfinanzierung"). This funding model defines the number of study places available, to be further negotiated in performance agreements. The study place regulations are based on a standard student, completing 30 ECTS in a semester.

The law on Austrian Universities (UG 2002) also promotes the development of blended and online learning. However, from a legal point of view, the full-time student still is the standard reference for a standard curriculum with a standard study duration. As a matter of fact, this standard does no longer reflect the student body of nowadays universities as only every tenth or eleventh student is studying full-time. Since no legal status of a "part-time student" exists (like in Germany), only 4 to 5 % of the students are registered as a part-time student, while many more are studying part-time. Also, the differentiation between student cohorts becomes very weak. However,

Introducing the part-time status in Austria would cause severe problems, particularly regarding funding and scholarships. In Austria, a student has to complete at least 16 ECTS points per study year to be counted for funding. Moreover, most curricula don't foresee the attendance of part-time students who work many hours a week. Regular programmes consist of three years for a bachelor, two years for a master degree, but don't offer flexible (blended and online) alternatives for longer study paths to part-time students.

Also, the funding of online and distance education for non-traditional target groups, where the average student follows less than 30 ECTS, is therefore an issue.

At the other hand, Austria provides structural funding for innovation in higher education (see 8.2)

Portugal – in transition

In *Portugal*, there is a clear awareness of the need to regulate blended and online education, but the Ministry of Science, Technology and Higher Education has still to develop a strategic vision. Hence, there is a certain degree of ambiguity in the political discourse concerning educational innovation, particularly on blended and online education. This ambiguity is the result of the multiplicity of national players involved in the political process on this subject. It

is urgent to construct a framework for the regulation of blended and online education that combines unity/diversity and flexibility/structure. Even though guidelines of international institutions, such as the OECD, have a strong influence, they are not linearly transposed into the national context.

The development of blended and online courses (and other initiatives) seems to be hindered by a gap in the law. Legal regulations on accreditation and recognition continue to conceive online learning as a subsystem of face-to-face teaching, not as an equal modality like in many other countries (see Belgium, Flanders). Hence, there is an urgent need for legal regulations and terms of reference for online and distance education, equivalent to face-to-face education. This is needed to withdraw online learning courses from a certain "underground status".

Strategies to facilitate innovation processes in higher education are also conditioned by the autonomy of Portuguese higher education institutions, enshrined in the legislation. In order to achieve a process of modernization of higher education, teachers need to change practices, attitudes and conceptions. The main obstacles are found within the institutions themselves: much of the resistance to teaching modalities other than traditional face-to-face teaching comes from the teaching staff. One of the measures mentioned is to promote pedagogical innovation through project funding, similarly to what is done in research (see also section 4.3).

The Universidade Aberta (UAb) exists already 30 years and is currently a fully online university, despite the legal gaps in the education system. However, the accreditation process for UAb's formal uses exactly the same criteria and indicators as for face-to-face education, even though the pedagogical model and methodology are totally different[115].

This is much discussed with the Agency of Evaluation and Accreditation of Higher Education (A3ES), where a number of other issues on the organisation of higher education are also debated, e.g. the distinction of courses offered in daytime and in evening/weekend classes. Both the government and the accreditation agency A3ES defend that the accreditation process for an online course and for a face-to-face course should be different. In a short term, this needs a specific legislation, regulating the responsibility and framework for different actors: higher education institutions, the accreditation agency and the government, allowing different scenarios for different situations.

Greece – state and EU supported innovation

In 2017, the *Greek* government has regulated that blended and online education can officially be organised in <u>all</u> universities of the country. It provides the possibility for all Greek universities to provide all their masters' degrees in a blended way. More specifically, up to 35% of the provision of each master's degree may take place through online teaching methods and tools. In fact, this legalisation confirmed already an existing practice in many universities, organising "covered" distance teaching. Even the larger universities (National University and National Polytechnic in Athens, and Aristotle University in Thessaloniki) already invest in

[115] For example, the information system of the A3ES asks to fill in the Working Regime (Daytime/After working hours/Others) and the Premises where the Study Programme will be lectured.

alternative modes of teaching and learning, c.q. distance education). It is expected that this new regulation will cause an unprecedented and tough competition between universities. Nevertheless, the governmental policy will have positive consequences on higher education in the coming years.

Also, the universities can provide short degree programmes for continuous education, using only distance teaching methods and tools (see also section 5). It's the first time that a short degree can be offered completely online, using asynchronous technologies. At the other hand, there is still no possibility to use online distance modes of teaching and learning at undergraduate level (bachelor level).

As such, the *Greek* Ministry considers digital higher education as a reality and a necessity. Blended learning is recognised as a crucial factor for the survival of small, peripheric universities. So, the encouragement of blended and online distance education is a sort of "forced policy" for the Ministry of Education, which at the same time doesn't want to discourage face-to-face education, neither the presence of students on the campuses and the cities of conventional universities. In practice, the Hellenic Open University is the main provider of online education in Greece.

Still, there is a lack of regulations regarding blended and online education. The Ministry recognises this, explaining it as a consequence of the early development of distance higher education in Greece. The law of 2017 on online and distance education does not provide many details or principles on the new possibilities of blended and online/distance education. The National Agency for Quality Assurance in Universities (ADIP) identified this gap and asked for regulations by the Ministry, but ADIP was not backed by the Greek Rectors' Conference, which preferred this not to be too precisely regulated.

General observations

Some countries stimulate innovation related to blended and online education by higher education policies and strategies. Others don't develop such strategies and leave this open to the autonomy of universities. Most universities have influence on governmental policies trough intermediate organisations such as a rectors' conference.

Governmental policies can have a system impact on the uptake of new forms of education. This impact is even strengthened when they are supported by massive governmental actions and operations, e.g. regarding educational excellence funding, platforms for curriculum collaboration, sharing resources (e.g., OERS) or MOOCs delivery. In this study, France is a pronounced example of strong national policies and actions.

Mergers of institutions are a momentum to develop new policies and strategies and to implement large scale-change across participating institutions.

In many countries, the mature uptake and structured implementation of online and blended education is still hindered by conflicting regulations. These can be related to funding, quality assurance, performance agreements, requirements for study-time and -place, etc.

Comments

National higher education policies and strategies in Europe are confronted with issues of high numbers of students, quality assurance and cost. Educational strategies are developed to respond to these issues, notably related to study progress and completion, reflecting the efficiency of the system, but also with regard to access to educational provisions and the (international) competitiveness of the system. In many countries, this is translated in a partial performance-based funding. By some governments, national strategies of blended and online education are developed in this context. In other countries, state-support agencies develop such strategies after consultation of stakeholders.

In all countries, university autonomy is felt as crucial good. Institutional policies are influenced by governmental policies and frameworks, but universities define themselves including their institutional mission, policies and strategies. All universities modernise their educational provisions as student numbers are growing. The attention for the quality of education is growing, also by the quality culture which is assured by internal and external quality systems. Educational quality becomes also more valued in staff careers.

Although in some countries, governments develop national strategies with regard blended and online education, eventually by national agencies, others have a “non-intervention” attitude. They consider new modes of teaching and learning as part of the institutional responsibility. However, in some areas new regulations and frameworks are needed as new modes of teaching and learning transform the system. Regulations should take into account that blended and online teaching and learning are part of the solution with regard to the issues mentioned above (student numbers, quality, cost). Blended and online education and face to face education should be considered as equivalent modes of education.

8.2 Funding schemes for innovation

In Europe, governmental funding schemes for innovation are as different as higher education systems and governmental policies. As shown below, large funding schemes are linked to strong central policies.

This section doesn’t consider institutional funding schemes for innovation by the allocation of mainstream funds to faculties, project funding or seed money for smaller individual staff initiatives. They are linked to institutional strategies (section 1).

Cases from selected countries

France

France has a strong governmental policy in educational innovation since many years. It is driven by initiatives like the Universités Numériques Thématiques, recently completed with the French MOOC platform, named together France Université Numérique (FUN). As already mentioned, France is deploying the Excellence Initiatives (Idex) with a high impact on education and educational innovation. It has also established Excellence Initiatives for Innovative Education ("Initiatives d'excellence en formations innovantes", IDEFI) with an international jury. France is massively investing in change and innovation in higher education. In excellence funding, universities with an excellence statute will benefit more of such policy than others. However, the national structures of France Université Numérique (universités

numériques thématiques, MOOC platform) are an instrument for all universities and they are publicly accessible.

Austria

In *Austria*, the Ministry provides a 100 million Euro fund for the structural development of universities (including IT-structure) and innovation projects. About 35 million € is allocated to education with a national structural fund for university infrastructure (called "Innovationsstiftung für Bildung"[116]). There will be an additional funding via the Innovation Fund for Education with an endowment of € 50 Mio, targeted to universities as well. Different categories of "Edutech" will then nurture new modes of teaching and learning.

Furthermore, there is a separate and comprehensive chapter on "teaching" in the three-year-performance agreements, contractually agreed upon by the ministry and the respective universities. In these agreements, also core educational processes of universities are described and calculated, such as quality assurance and the continuous professional development of staff. Performance agreements therefore are an instrument to improve teaching and learning. With regard to the "digitalisation of universities", a bonus is foreseen in the performance agreements for a curriculum including at least 20% e-learning in 2019-2021.

The Studyplace Funding ("Studienplatzfinanzierung") is a new model of university funding and will be implemented in 2019. This concept is already realized within the universities of applied sciences. Key figures will be based on student numbers and teaching features, calculated according to a certain ratio (besides research). There will be extra categories for "digitalisation" and "social inclusion", relating to specific programmes and target groups. This should contribute to the requirements of the European Commission in the "Education and Training 2020" objectives and the Modernization Agenda. However, this will further limit the access to the universities (enrolment caps already exist in certain programmes).

Also, regional policies are an important factor regarding funding of higher education in Austria.

Greece

In *Greece*, since ten years, two large inter-university projects funded by the European Union, have built the basis for the transition to blended and online education. The "Open Digital Courses" project supported all universities to develop digital material to accompany traditional face-to-face lectures, and render the students (even at undergraduate level) familiar with blended learning. The "Kallipos" project funded the development of 600 e-books by teaching staff of all universities. It is estimated that 30% of all faculty members of the academic staff in Greek universities were involved in one or both projects, which means that the staff of "conventional" universities is prepared for the transition to blended and online/distance teaching. Additionally, about 3.000 members of Greek universities have been employed as

[116] https://innovationsstiftung-bildung.at/

tutors at the Hellenic Open University since the year 2000. As a result, half of the faculty in Greece is experienced in online and blended education.

General observations

Some European countries have massive funding schemes for system level change and educational innovation. Of course, this corresponds with strong governmental policies. This is especially the case where excellence funding is practiced (*France*)

Funding for educational innovation is often embedded in general governmental policies like strengthening the potential of people, identifying and fostering talent (*Catalonia*), enhancing the quality of education and teaching also related to the future job market (*Denmark, Austria*) and to secure the competitiveness of higher education by collaboration between HEIs (*Finland*).

Performance agreements between government and higher education institutions are often used to include specific innovation strategies and to raise the quality and efficiency of higher education (e.g., the Netherlands, Finland, Austria). Increasingly, new modes of teaching and learning are part of these performance agreements.

In some countries, governmental funding schemes are weak or absent and HEIs find resources through participation in European projects. In Greece, European funding has been very relevant for the transition of Greek universities to blended, online and distance education, which has supported universities to facilitate access to universities from remote areas and from the islands.

Comments

In most European countries, public authorities are the primary funders of higher education. Funding frameworks, in which budgets are channelled to institutions, vary from country to country (Jongbloed, 2010; Estermann, 2013). The funding inequality in university systems is a barrier for an equal development of universities in European countries[117]. Since this has also consequences for the economic and social developments in the EU, it should be considered that the European Structural Funds are used to support the innovation agenda European-wide.

Funding regimes should stimulate educational innovation in universities by the increased use of technology in teaching and learning. This doesn't necessarily require a high additional cost compared with the total cost of higher education systems. It is more a matter of a visionary policy making and developing strategies in a dialogue with universities and stakeholders. This would be a best investment the European Union and national governments can do for universities.

8.3 Quality assurance

European universities are responsible for internal quality assurance of their educational provisions. Quality assurance agencies are responsible for external quality assurance. Agencies focus on educational degree programmes and/or institutional quality frameworks and procedures. In many countries, specific approaches and criteria for blended and online education are not yet adopted, neither in institutions nor in agencies.

Cases from selected countries

[117] http://www.eua.eu/publicfundingobservatory

Related to the role of national quality and accreditation agencies, differences between member states are observed.

Catalonia

In *Catalonia,* the general requirements for programme accreditation are coming from the Agency for Quality of the Catalan University System (AQU). Universities can propose blended and online programmes, demonstrating that they are feasible, attractive, demanded and sustainable. During the accreditation process, they have to deliver evidence about these requirements, taking into account the teaching mode. There are no plans to regulate this more specifically. There are not yet specific criteria for blended or online programmes in the system.

AQU is also responsible for the accreditation of university professors (Docentia[118]).

Austria

In *Austria,* accreditation is the task of the "Agency for Quality Assurance and Accreditation Austria". Every 7 years, audits are organised for every programme made. The awareness on the need for a systemic quality assurance is rather recent. This is related to the professionalization of teaching, considering teaching as a business field on its own. The Agency requires that the quality level of blended and online education corresponds with the level in traditional face-to-face education. Specific methods and standards have still to be developed. At the policy-level, the recommendations of the Austrian Rectors' Conference (UNIKO) on improving the quality of university education should be mentioned[119]. A working group on the quality of teaching elaborated further recommendations.

An "Atlas of Good Teaching "[120] offers a sample of best practices in different categories of innovative teaching and learning and it hosts a facility for exchanging ideas and experiences. Updates are done by the Ministry, institutions and teachers. Also, every three years data and reports on the social characteristics of students are published. The latest report highlighted specific questions related to study progress, mobility and to specific target groups.

The Forum New Media in Austria (FNMA[121]) is in regular consultation with the government too. FNMA is an umbrella organisation of universities and universities of applied sciences. FNMA published an e-learning report (2016[122]) as well as several valuable contributions and recommendations on OERSs[123]. With respect to accommodating repositories (e. g. for OERSs, MOOCs), university libraries and the Austrian Libraries' Consortium are important as well. Guidelines on OERSs are developed in cooperation with FNMA.

[118] http://www.aneca.es/Programas-de-evaluacion/Evaluacion-institucional/DOCENTIA
[119] http://www.hochschulplan.at/wp-content/uploads/2015/03/Bericht-der-HSK-zur-Verbesserung-der-Qualit%c3%a4t-hochschulischer-Lehre_20151.pdf
[120] http://www.gutelehre.at/
[121] http://www.fnm-austria.at/
[122] http://www.fnm-austria.at/fileadmin/user_upload/documents/Studie/E-Learning-Studie_2016.pdf
[123] http://www.fnm-austria.at/publikationen

Denmark

The *Danish* Accreditation Institute supports the development of educational programmes through the accreditation process. Another task of the accreditation institution is to survey international trends. As a part of this task, the institution has recently published a report on MOOCs[124]. They have examined the conditions and opportunities for offering MOOCs and other forms of open and online education in Danish Higher Education. The report has a focus on quality of MOOCs and how MOOCs can support and enhance traditional education.

Portugal

In *Portugal*, the Agency of Evaluation and Accreditation of Higher Education (A3ES) is the accreditation body for higher education. Legally, this can only operate within the regulation frameworks for face to face education and can't take decisions on new modes of education. The agency has no basis for action to overcome the impasse created by the lack of legal framework on online and distance education. It is the government's responsibility to resolve this situation together with the institutions. The Agency can work with the government to create a specific legislation. With regard to online and distance education, the Agency has already published a book on Cross Border Education and Services[125] (2016) that addresses the role of online and distance education is in this context.

Finland

In *Finland,* by law the assessment of quality belongs to the educational responsibilities of universities. This is also outlined in the licenses of the universities of applied sciences. Institutions have an internal quality management system with quality audits on a yearly basis, concerning a variety of topics one at a time. Additionally, self-assessments of teaching and learning, educational services and the management are systematically and frequently organised.

The Finnish Education Evaluation Centre (FINEEC) is an independent governmental agency, responsible for the external auditing of the quality of institutions. The three key evaluation types of FINEEC are the audits of quality systems of higher education institutions, thematic evaluations in the education system and degree programme reviews.

Every six years an institutional evaluation of a university is performed by FINEEC. It evaluates how comprehensive and effective the quality management meets the strategic and operational objectives of the institution.

To support the quality of Finnish higher education, the government promotes the digitalization of the higher education sector by funding the Key Projects in the Governmental Strategic

[124] See https://openuped.eu/15-english-content/news/178-new-report-from-the-danish-accreditation-institution-on-moocs-quality-and-perspectives and http://akkr.dk/publikationer/moocs-kvalitet-og-perspektiver/

[125] Joao Rosa et al., Cross-border higher eduaction and quality assurance, MacMillan palgrave, 2016. See: https://www.palgrave.com/de/book/9781137594716

Programme (see also previous sections). International co-operation will also strengthen the quality of Finnish higher education.

General observations

In all European countries, quality assurance is in place in institutions and quality assurance agencies. However, specific guidelines and criteria or not yet adopted in internal and external quality assurance systems. Blended and online education are often assessed with the same criteria as for face to face education, although practice is different.

In some countries the accreditation organisation has additional responsibilities like the accreditation of professors on teaching (e.g., Catalonia), conducting surveys amongst students and employees (e.g., Catalonia, Denmark) and publishing trend and policy reports (e.g., Catalonia, Denmark).

Comments

In quality assurance, different kinds of tensions are reported (e.g., EADTU-ENQA PLA, 2017)

- The tension between high level standards that are independent of teaching mode (face to face, blended, online, etc.) and detailed indicators for blended and online teaching and learning
- The tension between external (national/international) quality assurance and internal quality assurance
- The tension between a compliance with standards/criteria (retrospective) and the enhancement of processes (prospective)
- The tension between content (components and product) and process and context

The major challenge with regard to quality assurance of higher education in the future is to find the right balance between the assessment of high quality learning outcomes, the quality of the learning processes leading to those outcomes and the quality of institutional interventions leading to continuous improvement and innovation of the institution.

ENQA has set up a working group to look into these new developments and how new modes of teaching and learning can have implications for the European Standards and Guidelines (ESG), in particular the role of agencies in quality reviews for blended and online / distance programmes. This Working Group has finished its report[126]. The general conclusion is that "on one hand, quality assurance agencies should develop external review methodologies that take into consideration the particularities of e-learning, while on the other hand, traditional institutions providing e-learning or blended programmes should adapt their internal quality assurance systems in order to guarantee the quality of their teaching and learning processes". The report is a reference for both higher education institutions and quality assurance agencies as well as for experts in review panels. It is also important that quality assurance agencies share good practices between them.

EADTU has developed a quality assurance instrument and manual[127] for quality benchmarking in blended and online education, embracing all course design, curriculum design, student support, staff support and strategic management.

[126] Huertas, E.(ed.), Considerations for quality assurance of e-learning provision, ENQA, 2018. See: http://www.enqa.eu/indirme/papers-and-reports/occasional-papers/Considerations%20for%20QA%20of%20e-learning%20provision.pdf

[127] https://e-xcellencelabel.eadtu.eu/tools/manual

EADTU and ENQA collaborate already a long time and have started a dialogue on developments of blended and online education in a shared responsibility to stimulate innovation in higher education.

Universities should also undertake institutional evaluation and research in order to assess innovation and to improve teaching. Practices of new modes of teaching and learning would be more evidence-based. Quality assurance agencies might support them in this.

8.4 Recommendations

New, digital modes of teaching and learning will affect higher education practices, policies and strategies in the three main areas of provision in higher education. Main policies should focus on:

- Innovating degree education, facing higher student numbers and a lower staff/student ratios, extending the learning environment and intensifying education (see section 4)
- Upscaling continuing education for career development (CPD) and for personal development, responding to urgent needs in the economy and in society (see section 5)
- OERS and MOOCs, transferring knowledge and skills to all and creating a culture of lifelong learning (see section 6).

It is recommended that governments:

- Develop national policies and strategies and create policies and strategies regarding the development of these three areas of provisions. Make the structures of these areas permeable in order to valorise and maximize innovation in all three areas;
- Organise a national strategic working group/council/agency involving all stakeholders (university, students, social partners) and experts in order to capture the state of affairs, current needs and opportunities of innovative modes of teaching and learning in higher education;
- Support online platforms for sharing online courses and curricula, including online short degrees, OERS and MOOCs. Organise access to these facilities to learners and to the labour market;
- Define the funding statute for full-time, part-time and online/distance students on an equal basis to stimulate innovation and lifelong learning
- Develop drivers for innovation and change, encouraging and accelerating innovation, e.g. by (project) funding schemes and career development incentives;
- Stimulate or organise continuous professional development of teaching staff and stimulate institutional leadership for continuous innovation.
- Define regulations and quality and accreditation frameworks, taking into consideration the particularities of digital learning and adapting quality assurance systems and stimulating educational innovation in universities by the increased use of technology in teaching and learning;
- Stimulate institutional evaluation and research of new modes of teaching and learning.

These developments should be stimulated and activated by national governments as part of the *Bologna Process* in order to accelerate strategic efforts and developments in all European countries in a lifelong learning perspective. Member states have to align and engage in order to respond to the needs of society and to harmonize provisions and qualifications.

At the European level, the funding inequality of higher education systems a barrier for an equal development of universities should be on discussed at the highest level. It should be considered that the European Structural Funds are to be considered as an instrument to support the innovation agenda European-wide.

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Annex 1: CPL Questionnaire

CPL Questionnaire Case Studies

Data collection guidelines and roadmap

18/01/2017

EADTU

I. Institutional cases

Institutional cases

This questionnaire supports the national experts to create a picture of the state of the art of new modes of teaching and learning in an institution as well as the development of a vision and institutional strategies. It also seeks to evaluate governmental policies, strategies and frameworks from an institutional perspective in the respective countries. The latter will be used in the governmental case studies and the case studies concerning intermediate structures.

Objectives:

- To explore current innovations in the institutions with regard to the implementation of new modes of teaching and learning in mainstream degree education as well as for open and flexible education for non-traditional (e.g. adult) target groups and for international education
- To investigate the ambition level, vision and strategies of the institution concerning the integration of new modes of teaching and learning and/or blended learning (in 5-10 years, ~2025)
- To identify strengths and barriers within the institution for the implementation of new modes of teaching and learning
- To identify strengths and barriers in governmental policies from an institutional perspective, which influence the implementation of new modes of teaching and learning
- To identify possible governmental policies, strategies and frameworks which would better enable institutions to implement new modes of teaching and learning

Documents about institutional strategies and the implementation of new modes of teaching and learning:

Please, collect t documents on strategies and plans if available:

- Institutional strategies for education and new modes of teaching and learning
- The implementation of new pedagogies in the institutions
- Main research and innovation strands concerning new modes of teaching and learning within the institution
- Strategies and implementation of open and flexible education, OERs, MOOCs, CPD, facilitated by new modes of teaching and learning
- International policy and new modes of teaching and learning

Persons to be interviewed on site:

An institutional contact person should be appointed to prepare and organise the site visit with the national expert. The institutional contact point might be someone, who has an overall insight in the higher education institution (e.g. director teaching and learning) and is able to organise the site visit program to be completed in one day. A series of persons will be interviewed, each with a different focus:

- Focus on teaching and learning: Service for Teaching and Learning, R&I departments, Program Directors, Staff – 1,5h
- Focus on open and flexible education, MOOCs, OERs: Service for Teaching and Learning, Center for Distance Education, Departments involved in MOOCs and OERs, Staff - 1h
- Focus on international education: Director International Policy, Vice-Rector International Policy – 1h
- Focus on students: mainstream bachelor and master students, part-time students, non-traditional (adult) students – 1h
- Focus on institutional policy: Vice-Rector Education and eventually Vice-Rector International Policy – 1,5h
- Focus on governmental policy: Vice-Rector Education and eventually Vice-Rector International Policy – (time included on former point)

For each focus, the contact person is free to invite one or more people mentioned in the table above or similar, depending on the structure of the institution and the expertise of these persons. **Questions will be sent beforehand to the contact person to allow the institution to prepare the site visit as much as possible.**

On average the interviews will last between 1 and 1,5 hours. As such some 6 hours of interviewing will cover the day's programme, to be organised by the institutional contact point.

Guidelines for the site visit:

1. Focus on teaching and learning in mainstream degree education (on campus)

Service for Teaching and Learning, R&I Departments, Program Directors, Staff (2,0h)

Lead question 1: Identify most innovative practices involving new pedagogies in new modes of teaching and learning in degree education: e.g. blended/online courses and programs, embracing student-centered learning, a better/in depth acquisition of knowledge through well-conceived learning activities, the flipped classroom, the building of knowledge through the use of online resources, discussion groups involving peer students and staff, blended/online collaborative projects and practice, constructive knowledge building, social/collaborative/ problem-based learning, new approaches to assessment, etc. What is the state of the art in the institution? Which good practice will most substantially contribute to meeting challenges concerning the quality of the learning experience; linking research, innovation and education; student numbers; graduation time; the cost of education?

- Has the implementation of ICT in your institution affected at all pedagogical approaches in your degree programmes?
- If so, identify three examples of courses/curricula in degree programmes, which practice innovative digital/blended teaching and learning. How do they contribute to innovation? Do they enhance the quality of teaching and learning: new pedagogies as described above? Do they link in a new way with developing research skills, innovation skills?
- Are innovative pedagogies in the institution bound to particular study domains or faculties or are they wide-spread over all faculties?
- Is there some evidence that new modes of teaching and learning solve issues of study success and study progress in a degree program? Of dealing with large student numbers?
- Is there evidence that new modes of teaching and learning can be a factor in the cost of a course/program in the short to medium term?
- Is learning analytics practiced?

Lead question 2: Describe the actual institutional organisation as a support structure for new modes of teaching and learning and evaluate its effectiveness:

- How is the support for educational innovation for new modes of teaching and learning organised in your university?
- Is it current practice that a (central) teaching and learning service supports the development of courses and curricula taught in new modes of teaching and learning? Does this happen on request from course or program directors?
- Is innovation top-down or bottom-up?
- Is there a standardized approach to learning/course production implemented across the institution? Is collaborative course development practiced, stimulated in the institution? If so, how?

- Is all staff systematically trained in new pedagogies dealing with new modes of teaching and learning/blended education? If not all staff, what is the staff development policy, e.g. on a voluntary basis?
- Does the current institutional electronic learning environment satisfy the needs of teachers and students? Would you like to change the current environment? Is there a policy to accommodate staff with learning environments, which suit better to their course?
- Are new modes of teaching and learning incorporated in the institutional quality assurance framework?

Lead question 3: Investigate the innovative capacity and resilience of the institution with regard to education.

- Does the institution formally (e.g. through an annual review) take stock of patterns of good practice in new modes of teaching and learning or blended courses - both internally and externally - and are they systematically disseminated throughout the institution?
- Are new pedagogies nurtured by research and innovation in this domain from groups within the institution? From elsewhere?
- Is there enough institutional capacity in your institution to accelerate the implementation of new modes of teaching and learning in the next five or ten years? Or to meet new challenges, e.g. MOOCs?
- What are the main barriers for the implementation of new modes of teaching and learning?

Lead question 4: Which arrangements and incentives would accelerate the implementation of new modes of teaching and learning in your institution?

- At the staff and department level: appropriate learning environments, tools; motivation, training
- At the institutional level: pedagogical, organisational
- At the governmental level: funding aspects, recognition
- Which plans and measures would you propose?

2. Focus on open and flexible education

Service for Teaching and Learning, Center for Distance Education, Departments involved in MOOCs and OERs, Staff (1,5h)

Lead question 1: Describe the organisation of online and distance education:

- Does the institution organise distance education programs for off campus target groups in the country, region? Eventually for part-time students? Degree programs, corporate programs/ workplace-based learning, CPD courses?
- How many students are registered in these online and distance programs?
- Does the institution set up a specific organisation/department for distance education to develop courses and programs and to deliver them to distance students (information, guidance, facilitation of interaction with staff and peer students, organisation of tutoring, eventually study centers in the region, tests/assignments and feedback, etc.)?
- Are there links with employment (e.g. work-based learning)?
- Which are the main challenges and barriers for online and distance education in your institution?
- Does online and distance education for off campus students connect with a governmental plan or framework?

Lead question 2: Describe the organisation of Open Educational Resources:

- Does the institution currently publish OERs? Have they published in the past and now ceased?
- Does the institution adopt a strategy and plan for publishing OERs?
- What are the most important reasons for the institution to publish OERs: visibility, service to society, opening up education, continuous professional education, facilitating the choice for a study, international education,…
- Does this connect with governmental initiatives, frameworks?
- What are eventual barriers to publish OERs?
- Are OERs from elsewhere used in courses/programs in the institution? To what extent (if known)?

Lead question 3: Describe the organisation of MOOCs:

- Does the institution teach MOOCs?
- Does it adopt a strategy or plan for MOOCs?
- What are the most important reasons for the institution to teach MOOCs: visibility, service to society, opening up education, continuous professional education, facilitating the study choice of students, international education,…
- How is the development and delivery of MOOCs supported?
- Does this connect with governmental initiatives, frameworks?
- What are eventual barriers to teach MOOCs?

Lead question 4: Which arrangements and incentives would accelerate the implementation of open and flexible education in your institution?

- At the staff and department level: learning environments, tools; motivation, training
- At the institutional level: pedagogical, organisational
- At the governmental level: funding aspects, recognition of studies
- Which plans and measures would you propose at all these levels?

3. Focus on international education

Director International Policy, Vice-Rector International Policy (1,0h)

Lead question 1: Does the institution involve online/blended international courses/curricula in its international policy:

- Does the institution organise international courses/programs online/ in blended form, accessible for international students?
- Does the institution organise international courses/programs online/in blended form in partnership with institutions abroad (collaborative programs)?
- Do some programs organise international virtual seminars/learning communities/ discussion groups/projects online?
- Does the institution organise virtual/blended mobility schemes? In combination with the Erasmus scheme?
- Would the institution recognize/stimulate courses, taken in another institution in the world? What are the opportunities and barriers for doing so? Does this also apply to MOOCs?
- What are the major opportunities and barriers for international online/blended education in your institution?
- Are there legal barriers or barriers related to the funding, quality assurance or accreditation for such initiatives?

Lead question 2: Which arrangements and incentives with regard to new modes of teaching and learning would support international education in your institution?

- At the staff and department level: awareness raising, new approaches to international/collaborative course and curriculum development and (blended/on line) mobility; new types of international partnerships; adapted learning environments, tools; training of staff
- At the institutional level: institutional strategies concerning international programs and related mobility; technical and pedagogical support for new types of partnerships involving collaborative courses/ curricula and distance courses/curricula
- At the governmental level: funding aspects, quality assurance and accreditation aspects
- Which plans, arrangements and measures would you propose at the institutional level, the governmental level?

4. Focus on institutional policy: vision, strategies, frameworks

Vice-Rector Education and eventually Vice-Rector International Policy (focus 4 and 5= 1,5h)

Lead question 1 - Institutional vision and strategies: how does the institutional organisation support the continuous innovation of all aspects of teaching and learning by digital technologies and blended approaches?

- Has the institution developed a strategic institutional plan/framework for online/blended teaching and learning?
- Does this include open and flexible education (distance education, CPD, OERs, MOOCs,…)
- Does this include international education?
- Does the institution provide incentives, rewards for the implementation of online/blended teaching and learning? Project funding? Does it boost teaching staff's careers?
- Does the institution promote (bottom up and innovative) leadership in new modes of teaching and learning:
    - Leadership in new pedagogies
    - Leadership in subject-related course design: for statistics, law, medicine, engineering, etc.
    - Leadership for the support of international education with new modes of teaching and learning
    - Leadership with regard to the development of open and flexible education and the use of OERs and MOOCs
    - Leadership with regard to quality benchmarking in this area
    - Leadership in research and innovation about new modes of teaching and learning

- Does the institution operate like a space for open innovation in education and new modes of teaching and learning, bringing together an institutional knowledge body and disseminating/exploiting it institution-wide.
- Does the institution promote R&D in online/blended teaching and learning?

Lead question 2 - Explore institutional expectations and ambitions with regard to the new modes of teaching and learning (online/blended):

- What are the institutional expectations with regard to the number of courses taught in blended/online teaching and learning? What will be the picture of institution with this regard in the future (in 5-10 years, ~2025?
- Will this change the quality of the learning experience? The courses? Student recruitment? Retention? Time to graduation?
- Will this facilitate a better implementation of the knowledge triangle between education, research and innovation in higher education?
- Will this change dealing with student numbers? Interaction with students?
- Will this change cost models of institutions?
- What are the opportunities and barriers internally?
- How will the institution accelerate the implementation of new modes of teaching and learning?

5. Focus on the relationship between the institution and governmental policy with respect to new modes of teaching and learning

Vice-Rector Education and eventually Vice-Rector International Policy (focus 4and 5=1,5h)

Lead question 1: Do governmental initiatives currently promote new modes of teaching and learning in mainstream degree education? Opportunities, barriers, incentives

- Are new modes of teaching and learning legally recognized?
- Are online students/courses included in funding rules?
- Are there issues with regard to quality assurance or accreditation of online learning?
- Does the institution contribute to governmental policy development, framework building? Is it involved?
- Does the institution connect with current governmental policy for online/blended teaching and learning? Do you benefit from Incentives, opportunities given by the government?
- Are there barriers concerning the implementation of online/blended teaching and learning, which can be removed by the government?
- Does the government provide a framework for open and flexible education, distance education, MOOCs? Does it promote opening up education to off campus target groups through distance education, CPD, corporate training, OERs, MOOCs?
- Does the government stimulate and activate an international courses/programmes, where institutions play a European and global role in some areas?
- Does also the government invest in the continuous innovation of higher education: Is the government sensitive for new developments in the area of new modes of teaching and learning/blended education and does it promote the field by supporting research and innovation, sharing good practices, awareness raising, professional development and policy reports?
- Do intermediate support organisations support the implementation of new modes of teaching and learning in mainstream education, open and flexible distance education, international education? Does the government provide support and funding for doing so?

Lead question 2: Which suggestions of good policy would the institution do to the government?

- Do you expect that governmental visions, strategies and documents inspire or influence institutional policies? Or do you prefer that the government leaves all policy issues and challenges to the autonomy of the institutions, as long as it recognizes institutional initiatives ?
- If you were in a government position, what concrete measures would you support/recommend, which you believe could make a substantial difference in the adoption of new modes of teaching and learning?

6. Focus on students

Mainstream bachelor and master students, non-traditional (adult) students (1h)

Lead question 1: Investigate how students currently appreciate the impact of new modes of teaching and learning on the learning experience

- Are students satisfied with the current implementation of new modes of teaching and learning? The quality of the learning experience? Organisational aspects?
- What do they see as the main added value of online/blended teaching and learning?
- Which are the main complaints of students concerning the implementation of new modes of teaching and learning?

Lead question 2: Which arrangements and incentives would accelerate the implementation of new modes of teaching and learning in the eyes of the students?

- At the staff and department level: enriched learning environments, tools; staff training?
- At the institutional level: new pedagogies, organisational aspects
- At the governmental level: funding aspects, recognition, quality assurance
- Which proposals would students do for accelerating the process?

II. Governmental case studies

Governmental cases

This questionnaire supports the national experts to investigate the governmental policy concerning innovation in higher education, involving new modes of teaching and learning. It also seeks to evaluate current governmental strategies, frameworks and incentives. The site visit will come after the institutional ones, allowing real life institutional aspects to materialize the lead questions.

Objectives of the case study:

- Identify current policies and strategies concerning innovation and new modes of teaching and learning in mainstream higher education (bachelors, masters)
- Explore policies and barriers with regard to the implementation of new modes of teaching and learning in higher education, e.g. with regard to funding, study awards, recognition, quality assurance and accreditation
- Identify a systemic policy with regard to open and flexible education, e.g. distance education, OERs and MOOCs, continuous professional development and skills development. How is accessibility, flexibility and scalability realized anchored in the higher education system for adult students?
- Identify how the government supports research and innovation in the sector
- Investigate how national policy connects with the EU modernization agenda of higher education
- Explore possible visions and strategies on the future of higher education and new modes of teaching and learning, which are useful for recommendations to institutions, governments and the EU

Documents about governmental policy and new modes of teaching and learning:

- Proceedings from official seminars, conferences, workshops
- Reports to the government from advise groups,/committees, experts, councils, official organisations
- Agreements and programmes, accepted or prepared by the government
- Policy frameworks for innovation in higher education and new modes of teaching and learning
- Legal regulations with regard to new modes of teaching and learning
- Policy documents with regard to open and flexible education: distance education, OERs, MOOCs

Persons to be interviewed on site:

- Director-general Higher Education
- Cabinet Minister of Education

For each focus, these persons are free to invite one or more experts from the ministry. **Questions will be sent beforehand to allow the ministry to prepare the site visit as much as possible.**

On average the interview will last between 1,5 and 2 hours.

Guidelines:

1. Focus on awareness raising

Lead question: Did the government organise or support conferences, seminars or other events with regard to new modes of teaching in higher education?

2. Focus on policy development, framework building:

Lead question: Did the government develop a policy for innovation in higher education, involving new modes of teaching and learning?

- Did it publish reports, advises, ministerial communications, monitoring data about new modes of teaching and learning?
- Did it develop strategies, frameworks or programs with regard to new modes of teaching and learning?
- Did it discuss the implementation of new modes of teaching and learning with the Rectors' Council, the University College Council or other representative organisations? What are the main outcomes?

3. Focus on specific legal regulations concerning new modes of teaching and learning:

Lead question 1: Are there still challenges to be met at the national or regional level with regard to the recognition of online/blended learning?

Lead question 2: Are there still issues to be solved concerning new modes of teaching and learning and quality assurance or accreditation agenda?

Lead question 3: Are there issues with regard to the certification, degree awarding for online/blended leaning?

4. Focus on funding rules: general, specific incentives, project funding, institutional performance rules

Lead question: Are new modes of teaching and learning included in the funding rules for higher education?

- Do funding rules stimulate innovation in higher education through new modes of teaching and learning?

- Does the government provide project funding to facilitate the implementation of new modes of teaching and learning?
- Are new modes of teaching and learning part of funding/performance agreements between the government and higher education institutions?

5. Focus on intermediate organisations:

Lead question: Does the government organise or support intermediate organisations, which coordinate course development for online/blended higher education, accommodate repositories (e.g. for OERs, MOOCs), train teaching staff, monitor developments in institutions, etc.? Does this influence an effective achievement of governmental strategies, frameworks?

6. Focus on open and flexible education for off campus target groups:

Lead question 1: Does the government have a specific framework for online and distance education? What is the participation rate of adults in higher education (25 plus)? Are new modes of teaching and learning promoted to enhance accessibility, scalability, flexibility and quality in this area?

Lead question 2: Does the government/ministry pay special attention to MOOCs and OERs? Did it develop a framework for MOOC and OERs?

Lead question 3: Does the government stimulate continuous professional development (CPD) and skills development at the higher education level, using new modes of teaching and learning?

Lead question 4: Are there legal barriers for participating in open and flexible education? Are there issues of recognition, quality assurance or accreditation? Does the government develop views on these issues?

7. Focus on research and innovation:

Lead question: Which are the main centres for research and innovation on new modes of teaching and learning in the country? Does the government provide funding for research and innovation in higher education? Does it organise specific, medium or large scale R&I programs in the sector?

8. Focus on plans for the future:

Lead question: what do you think should be done to accelerate the modernization agenda for higher education?

- How could you accelerate the modernization agenda for higher education in your country?
- What would then be your main strategies?
- What would be your policy programs and tools?
- What recommendations would you envisage for institutions, national governments and the EU?

9. Barriers

Lead question: What are the main barriers to accelerate the modernization agenda?

- At the national or regional policy level?
- At the institutional level?
- What are your policy suggestions to overcome these barriers?
- What can the EU do?

III. Intermediate organisation case studies

Intermediate organisations case studies

Depending on the country, intermediate organisations can be specialized institutions for the development of ICT in higher education, virtual higher education, online and distance learning, MOOCs and OERs, etc.

They can also be Rectors' Councils, University Colleges' Councils or other relevant organisations and committees with strong views on new modes of teaching and learning. In this case not all questions below are relevant.

This questionnaire supports the national contact point with guidelines for the interview.

Objectives of the case study:

- Investigate challenges, opportunities and barriers for implementing new modes of teaching and learning in the country
- Identify the policies, strategies, objectives, structure, governance and funding of the organisation
- Identify the governance and funding of the organisation
- Identify work programs of the organisation
- Investigate how governmental policy is implemented through the organisation
- Investigate how institutional needs and priorities are dealt with by the organisation
- Identify quality assurance approaches and instruments are practiced in the organisation
- Evaluate the quantitative and qualitative impact of the organisation
- Investigate the future of higher education in Europe, the role of new modes of teaching and learning and how governments can stimulate and activate the modernization agenda

Documents of the organisation:

- policy, strategy documents and annual report of the organisation
- advises or recommendations for the government
- advises and recommendations for higher education institutions and staff
- studies and monitors concerning new modes of teaching and learning
- other relevant documents

Persons to be interviewed:

- the director or president of such organisations or committees

For each focus, these persons are free to invite one or more experts from their organisation, depending on their expertise...

Questions will be sent beforehand to allow the organisation to prepare the site visit as much as possible.

On average the interview will last between 2 and 3 hours.

Guidelines:

1. Focus: national challenges, opportunities, barriers

Lead question: What are the main challenges, opportunities and barriers with regard to implementing new modes of teaching and learning in the country?

2. Focus on strategies and governance of the organisation

Lead questions:
- What are the main policies, strategies, frameworks and objectives of the organisation with regard to new modes of teaching and learning?
- Who is governing the organisation: representatives of public authorities, higher education institutions, other stakeholders?
- How is the organisation funded? By the government? Jointly by the participating universities?

3. Focus on balance top-down/bottom-up processes

Lead questions: Are the objectives and programmes of the organisation conceived by the government and/or by the universities or other stakeholders? To which extent each?

4. Focus on services

Lead question: What kind of services does the organisation deliver to the government, higher education institutions, other stakeholders (e.g. students), e.g policy reports, staff training, collaborative course development, course delivery, students guidance,…)?

5. Focus on quality assurance

Lead question: Which approaches does the organisation practice in assuring the quality of its activities? Which instruments / tools does it use?

6. Focus on impact

Lead questions:
- What is the quantitative impact measured, e.g. number of courses, number of students per courses, use of courses by colleagues of other institutions, etc.
- What can the impact be described in a qualitative way: on the innovation culture of institutions, on decisions with regard to new pedagogies in institutions, on regional development, etc.?

7. Focus on the future of European universities and the role of the government

Lead questions:
- How will new modes of teaching and learning accelerate the modernization agenda of European higher education? How can they meet challenges of students numbers, quality and cost? How can governments stimulate these developments?
- If you were in a government position, what concrete measures would you support/recommend, which you believe could make a substantial difference in the adoption of new modes of teaching and learning?

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