



hochschulforum
digitalisierung

Background Paper | December 2018

BOLOGNA DIGITAL 2020

Towards a digital dimension in the Bologna Process

Dr. Dominic Orr · FiBS Research
Florian Rampelt · Stifterverband

Version 2: 12 December 2018

CONTENT

1. TOWARDS A ‘BOLOGNA DIGITAL 2020’	1
2. CONCEPTUAL FRAMEWORK.....	3
2.1 Principles	3
2.2 Digital-enhancement for key processes in higher education.....	3
3. A PROACTIVE PREPARATION AND ADMISSION SYSTEM	5
3.1 Introduction to the topic.....	5
3.2 The potential of digitalisation	5
3.3 Recommendations from the first version of Bologna Digital.....	6
3.4 Questions for the workshop	6
4. FOCUSING ON SKILLS FOR THE DIGITAL AGE	7
4.1 Introduction to the topic.....	7
4.2 Potential of digitalisation	8
4.3 Recommendations from the first version of Bologna Digital.....	9
4.4 Questions for the workshop	9
5. TAKING ADVANTAGE OF VIRTUAL EXCHANGE AND MOBILITY.....	10
5.1 Introduction to the topic.....	10
5.2 The potential of digitalisation	10
5.3 Recommendations from the first version of Bologna Digital.....	12
5.4 Questions for the workshop	12
6. FACILITATING RECOGNITION OF (PRIOR) STUDENT LEARNING	13
6.1 Introduction to the topic.....	13
6.2 The potential of digitalisation	14
6.3 Recommendations from the first version of Bologna Digital.....	16
6.4 Questions for the workshop	17
7. STRATEGIES FOR TEACHING AND LEARNING IN THE DIGITAL AGE	18
7.1 Introduction to the topic.....	18
7.2 Challenges of digitalisation	18
7.3 Recommendations from the first version of Bologna Digital.....	19
7.4 Questions for the workshop	20
8. QUALITY ASSURANCE	21
8.1 Introduction to the topic.....	21
8.2 Challenges of digitalisation	21
8.3 Recommendations from the first version of Bologna Digital.....	22
8.4 Questions for the workshop	22
REFERENCES	23
WORKSHOP AGENDA	25
IMPRINT.....	26

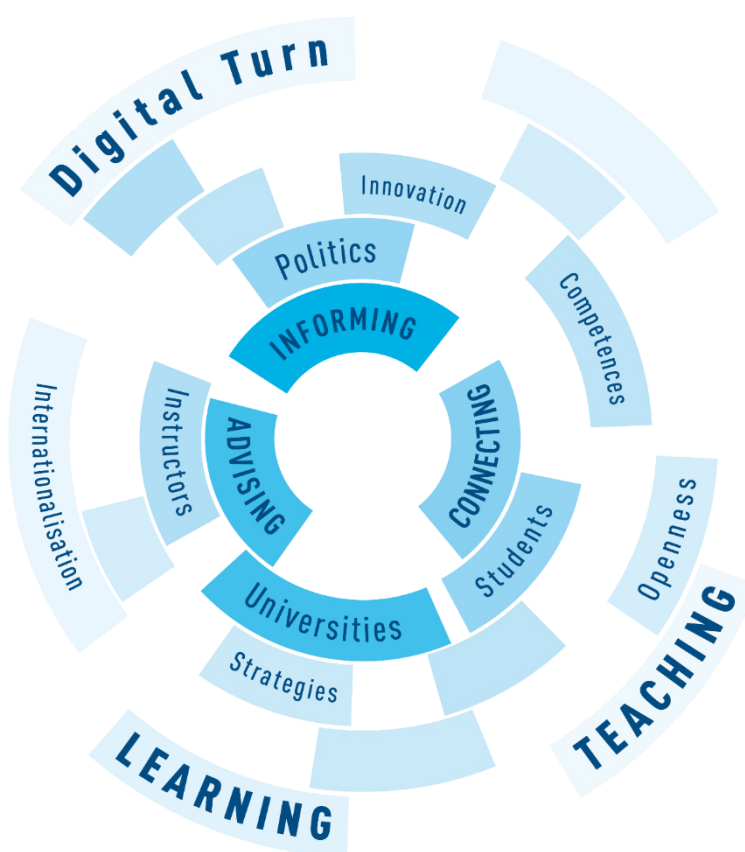
Hochschulforum Digitalisierung (HFD)

German Forum For Higher Education in The Digital Age

Hochschulforum Digitalisierung (HFD) orchestrates the discourse on higher education in the digital age. As an innovation driver, it informs, advises and connects stakeholders from higher education institutions, politics, business and civil society.

Founded in 2014, HFD is a joint initiative by Stifterverband für die Deutsche Wissenschaft, CHE Centre for Higher Education and the German Rectors' Conference (HRK). It is sponsored by Germany's Federal Ministry of Education and Research (BMBF).

Further information is available at <https://hochschulforumdigitalisierung.de/en>.



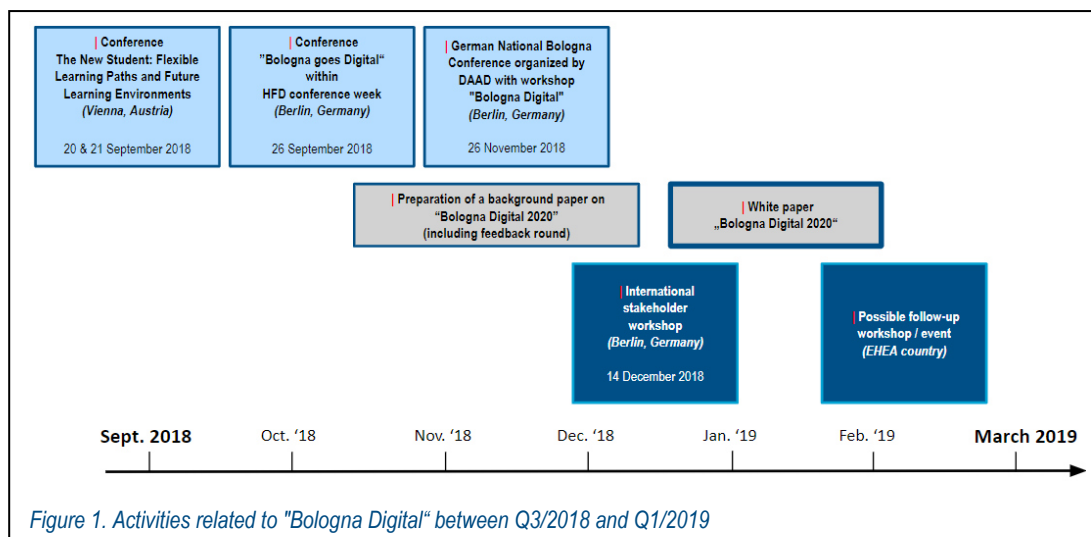
1. TOWARDS A 'BOLOGNA DIGITAL 2020'

Europe needs new visions for contemporary higher education in the digital age. Digital transformation is not so much an additional challenge, but an effective means to address key challenges for higher education in the 21st century. On this basis and under the slogan 'Bologna Digital', an international team of experts, coordinated by the German Forum for Higher Education in the Digital Age (Hochschulforum Digitalisierung) developed initial impulses in the run-up to this year's Bologna Ministerial Conference in Paris in spring 2018.

The aim of this background paper and further activities on "Bologna Digital 2020" is to continue and further elaborate the debate around a 'Bologna Digital' after the Ministerial Conference in Paris 2018.

As a first step, the existing position paper has been further developed and disseminated as a background paper for feedback in preparation for an international workshop (this document), which takes place in December 2018. The workshop invites European experts and stakeholders to comment on selected topics and positions and further develop joint approaches on making best use of digitalisation in the European Higher Education Area (EHEA). The workshop gathers university representatives, European higher education stakeholders, governmental staff from different member states and other stakeholders active in European higher education. The workshop is sponsored by the German Federal Ministry of Education and Research (BMBF) as part of the European activities of Hochschulforum Digitalisierung.

Based on the outcomes of the workshop, a joint final paper will be produced in the form of a White Paper until Q2/2019. This paper will highlight major topics and measures to be focused on by 2020, when the next Bologna Ministerial Meeting takes place in Rome. It also will provide practical examples from throughout Europe and beyond and thus help shape further possible European, national and institutional activities.



As in many political circles, digitalisation is seen as an additional topic or as an additional challenge in connection to higher education reform, but not as an integral part of higher education provision in a digital world. An expression of this attitude can be found in the final report of the Bologna Working Group 3 'Policy development for new EHEA goals'. Here digitalisation in university teaching is seen as a challenge from the environment:

*"Teaching must cope with new challenges such as increasing student enrolment or the digitalisation of education, society and economy by new methods for teaching and learning [...]."*¹

¹ http://www.ehea.info/media.ehea.info/file/2018_Paris/72/7/MEN_conf-EHEA_WG3_03_950727.pdf

In contrast, a more inclusive discussion was expressed early 2018 in the Position paper 'Bologna Digital' (Orr, van der Hijden, Rampelt, Röwert, & Suter, 2018b), which was endorsed by several organisations (HFD, Kiron, FiBS, EADTU, ICDE, Groningen Declaration Network).² The authors argue:

"(...) Digitalisation has not been ignored within the Bologna Process. Policy-makers, individual higher education institutions and other education providers have been active. However, the full potential of digitalisation has not been reached on systemic level. This is partly due to digitalisation being viewed as an additional challenge, rather than a means to meet existing challenges for higher education."

While this argument is neither original nor new, the paper was praised in preparation for the ministerial meeting of the Bologna signatory countries in April 2018 for its clarity and for its emphasis on the fact that the current goals of the Bologna Process can be better achieved through harnessing digital technology. One of the first European events focussing on higher education following the Paris Communiqué and organised under the Austrian European Presidency took on this view to discuss the opportunities for flexibility presented through digitalisation (Unger & Zaussinger, 2018).

The European Commission has recently communicated an increased focus on education in the digital age. Already in 2016 its communication on modernising education stated: "Digital transformation is changing the job market and requiring new skill sets. Digital technologies will also offer new ways of learning provided that there is adequate access to these technologies. To reap the benefits of these trends, education and training systems need to respond better to these changing realities." (European Commission, 2016) In 2018 it launched the Digital Education Action Plan, which sets out three priorities: making better use of digital technology for teaching and learning; developing relevant digital competences and skills for the digital transformation; and improving education through better data analysis and foresight.³

The final communiqué of the Paris Ministerial Conference similarly set a new focus on the possibilities of digitalisation (*Paris communiqué*, 2018):

*"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** [emphasis given by the authors]."*

This is promising and leads to the expectation that the Bologna Process will maintain a more open understanding and focus on digitalisation in the period leading up to the next ministerial conference in Rome in 2020. The aim of this initiative is to galvanise debate and activities around this in the coming months and years.

There are a few digitalisation initiatives and activities in European countries which have a similar focus to the discussion as the German Forum for Higher Education in the Digital Age (Hochschulforum Digitalisierung/HFD). Certainly, it makes sense to build such European exchange platforms and bring similar organisations and initiatives together to discover similarities and differences in approaches to supporting digitalisation in national higher education systems and to discuss opportunities for European cooperation.

² <https://hochschulforumdigitalisierung.de/en/bologna-digital-0>

³ https://ec.europa.eu/education/education-in-the-eu/digital-education-action-plan_en

2. CONCEPTUAL FRAMEWORK

2.1 PRINCIPLES

The conceptual framework used in this Background Paper is based on the following three preconditions:

- The background paper is intended to lead to strategic discussions that understand digitalisation as part of overall strategies for teaching and learning. The focus remains on teaching and learning, as this is also the focus of the Bologna Process. Administration and research are considered to the extent that they are directly related to the strategic further development of teaching and learning.
- The background paper should offer a pathway between the current situation in higher education and future developments, when digitalisation is viewed more holistically. In doing so, it should be sensitive to developments that lead to parts of the higher education provision being offered cooperatively by educational institutions (e.g. through the new "European Universities" initiatives) or omitted (e.g. MOOC providers, where learning achievements cannot be directly recognised by the MOOC provider as ECTS, but this is done by an established university).
- Furthermore, the background paper should contain a concept that is relevant to all 48 Bologna member countries, as this will be necessary for it to have supranational relevance.

2.2 DIGITAL-ENHANCEMENT FOR KEY PROCESSES IN HIGHER EDUCATION

This Background Paper follows the definition of digitalisation provided by Randall et al. as a result of their literature and policy review in the Nordic region (Randall, Berlina, Teräs, & Rinne, 2018). According to them, digitalisation is

"[t]he transformation of all sectors of our economy, government and society based on the large-scale adoption of existing and emerging digital technologies."

The internet and digital networks are the means to connect disparate information and communication channels and are changing how society is organised and works. Therefore, it is not so much the technology, but the new information nodes and the forms of their connection, which allow processes to be organised differently (Castells, 2010; Cerwal, 2017). In terms of the educational role of higher education, digitalisation enables new forms of learning and new access routes to information, knowledge and expertise. Digitalisation of higher education thus is a "transformative process that substantially influences all activities of higher education institutions" (Rampelt et al., 2018).

As early as 2015, the EHEA ministers have made a strong connection between teaching and learning at higher education institutions and this process of digital transformation:

"Enhancing the quality and relevance of learning and teaching is the main mission of the EHEA. We will encourage and support higher education institutions and staff in promoting pedagogical innovation in student-centred learning environments and in fully exploiting the potential benefits of digital technologies for learning and teaching." (Yerevan Communiqué, 2015)

When in April 2018 the position paper 'Bologna Digital' was published, it reconfirmed the focus on teaching and learning but identified some further action lines that are closely related to this. The paper accordingly provided recommendations for harnessing the promise of digitalisation for seven key action lines in the Bologna Process.

1. Opening up higher education to a diverse population
2. Recognition of non-formal (digital) learning
3. Admission process
4. Teaching and learning
5. Degrees and qualifications
6. Internationalisation and mobility
7. Quality assurance

The focal points have proved to be helpful for the discourse on the topic. However, it also became clear that some topics could be summarised if necessary and others may be added based on feedback and suggestions from different stakeholders.

The background paper was therefore placed on a stronger conceptual basis. One major framework used for the development of this background paper is a model developed within the OOFAT study (Orr, Weller, & Farrow, 2018). This concept aggregates higher education provision into three key processes and looks to how digitalisation can offer more flexibility and more inclusive processes, while providing personalised support:

1. Providing access to and delivery of learning opportunities.
2. Developing learning content and providing learning support.
3. Recognising and certifying learning.

Not all of these processes have to be developed and offered at a higher education institution. Future developments in higher education will come from the fact that providers omit certain processes (e.g. they offer learning content, but not the certification of learning) or cooperate for certain processes (e.g. learning content is developed jointly). Based on this streamlining of key processes in higher education and substantial feedback from different stakeholders, six topics were identified as priorities for this background paper:

1. **Preparation and admission**
2. **Skills for the digital age**
3. **Virtual exchange and mobility**
4. **Recognition of (prior) student learning**
5. **Quality assurance**
6. **Strategies for teaching and learning**

The following chapters further elaborate on these respective main topics. In addition to a brief introductory section in each chapter, the aim is to point out relevant guiding questions for further discussion during the workshop in Berlin on 14 December 2018.

3. A PROACTIVE PREPARATION AND ADMISSION SYSTEM

3.1 INTRODUCTION TO THE TOPIC

Ensuring that higher education is open for all is a key goal of the 'social dimension agenda' within the Bologna Process, which first entered the Bologna process in 2001 with the Prague Communiqué. In 21st century society, the ability to access and succeed in higher education is central to social mobility and economic sustainability for European countries. The question of who goes on to higher education and who does not, who is steered towards it and who is steered away from it, is thus a major issue in forming dynamic and progressive societies (Orr, Usher, Haj, Atherton, & Geanta, 2017). Whilst admission systems have the task of selecting those who have the potential to succeed in higher education, they can also limit such opportunities for certain social groups. Therefore, admission systems can be assessed on their capability to provide an efficient and effective route to study success, but also on the *inclusiveness of this process*.

Digital study orientation and preparation services can strengthen informed decisions on admission and increase permeability. Well-designed and well-guided transition programmes should become part of a holistic admission process. They can help learners prepare for the demands of their studies, but also adapt to the new learning environment (Rampelt, Niedermeier, Rówert, Wallor, & Berthold, 2018). They might start before enrolment on a programme of study (as access or bridging courses) or be offered alongside the main study programme in a student's first year of studies (as introductory and supporting programmes). In an ideal case they would be proactive and directly supportive of students' individual needs.

Many HEIs offer such programmes in different formats. They vary from being immersion days for secondary school pupils, to summer schools before the start of the first semester and foundation courses provided alongside the first year of studies. Currently they tend to require physical presence on-campus.

3.2 THE POTENTIAL OF DIGITALISATION

The design and provision of good preparation and introductory programmes is confronted by a double challenge: ***Can such programmes be personalised enough to be useful to individual students and at the same time by offered at the necessary scale to support all students requiring this support?*** Certainly, online courses coupled with student support services have the potential to meet this double challenge.

We know that around 40% of HEIs in the EHEA are using MOOCs and this is probably an underestimate (Jansen & Konings, 2017). Such courses can be used by HEIs as appetizers for study programmes and attract local and international students into their programmes. In this way, students can see the basic structure of the study programme and get an impression of the knowledge and competences they will gain from such studies. In this way, such courses can be used as dynamic programme catalogues.

Moreover, students from underrepresented groups are frequently insecure about their study programme decisions and digitally-based bridging and support programmes can help to alleviate their worries or present opportunities for study orientation (Ubachs & Lizzie, 2018, p. 48 f.).

If such courses are to aid study preparation and orientation, they will also need to offer counselling and support services. Digitalisation can also help to make such provisions scalable by harnessing the techniques of machine

learning to provide recommendations and by utilising social-bots in order to deal with at least the easiest questions of inquiring students.

Additionally, such programmes might be used to smooth the transition process on admission to higher education, by recognising credits gained in the online course as part of the full study programme, once a student is enrolled as has been done for instance by the Kiron higher education platform (Rampelt et al., 2018). The EADTU survey showed that many HEIs with MOOCs were open to giving credits for learning units, which could be officially recognised as part of a Bachelor programme (Jansen & Konings, 2017).

3.3 RECOMMENDATIONS FROM THE FIRST VERSION OF BOLOGNA DIGITAL

The first version of Bologna Digital made 17 recommendations in total. The numbers below refer to the specific recommendations in the original document (Link: <https://hochschulforumdigitalisierung.de/en/bologna-digital-0>).

- 1) Higher education institutions are encouraged to consider making induction courses for their study programmes available online (e.g. through MOOCs), including adequate support mechanisms, allowing new students to be better informed and better prepared for their studies.
- 2) Governments and the EU are invited to provide funding for such digital solutions to open up higher education and to help ensure study success for non-traditional learners.

3.4 QUESTIONS FOR THE WORKSHOP

A focus on preparation programmes:

- I. *What is the current impact of preparation programmes (physical and online). Who are they aimed at and what makes them successful?*
- II. *Are there new providers of such programmes outside of the normal higher education system? How do they interact with higher education institutions? What are their success factors?*

A focus on an integrative solution:

- III. *Can online programme provision be used to help provide tangible information and orientation for students (and especially for underrepresented groups)? Which fields of study would be the focus? Which (offline) support services would be necessary additionally?*
- IV. *Can HEIs be encouraged to consider participation in an (online) preparatory as part of the whole admission process, thus lowering the admission requirements and providing a second chance to students looking for alternative routes into higher education? What are examples and success factors?*
- V. *Can HEIs be encouraged to award credits for competences gained through (online) preparatory and transitional learning, thus giving students a head-start into their programmes? What examples are there and what are the success factors?*
- VI. *Would this be an area which could particularly benefit from developments related to the EU's Higher Education Hub⁴ – i.e. with materials exchange and collaboration between institutions in different countries?*
- VII. *On which regional, national or international platforms should such offers generally be made available?*

⁴ https://ec.europa.eu/education/education-in-the-eu/european-education-area/digital-education-action-plan-action-4-higher-education-hub_en

4. FOCUSING ON SKILLS FOR THE DIGITAL AGE

4.1 INTRODUCTION TO THE TOPIC

Students attending higher education expect to acquire skills and knowledge, which will empower them through personal and professional development to succeed in their future life. In the past, this topic area has been termed the ‘employability agenda’, but recently policymakers have refocussed this area and now tend to refer to the ‘skills agenda’. The ‘skills agenda’ from the European Commission states:

“With the right skills, people are equipped for good-quality jobs and can fulfil their potential as confident, active citizens. In a fast-changing global economy, skills will to a great extent determine competitiveness and the capacity to drive innovation. They are a pull factor for investment and a catalyst in the virtuous circle of job creation and growth. They are key to social cohesion.” (European Commission, 2016)

A focus on skills requires a distinction between two types: specific and general. Specific skill sets are those required for a particular field of work or discipline (such as engineering or law) and provide a basic foundation of knowledge and practice for effectiveness in the workplace. The identification and transmission of such knowledge and skills depends on there being an agreed consensus on what is required in a particular field. This then makes up the content of course curricula. The challenge in a digital world is that technological change leads to new demands on people in the labour market and the need for higher education curricula to be regularly reviewed for their relevance. These specific skill sets must be combined with general skill sets consisting of fundamental skills (such as numeracy and literacy) and transversal skills (such as team-working, problem-solving, communication and reflection). Learners should be able to apply their mastery of such skills to familiar and to new settings. Transversal skills are often referred to as 21st century skills, since they are gaining importance in the context of automation and developments in artificial intelligence (Bialik & Fadel, 2018).

The OECD project Education 2030 has identified three further categories of competencies for a global, interconnected world – the ‘Transformative Competencies’ – that together address the growing need for young people to be innovative, responsible and aware. They are: creating new value, reconciling tensions and dilemmas, and taking responsibility.

A recent report for the engineering sector in Germany emphasised how both specific and general skill sets need to be combined in people’s professional profiles (Eckert et al., 2018): “In the future there will be a greater need for graduates with hybrid skills; in other words, domain know-how in an engineering discipline paired with solid basic knowledge in digital disciplines.” This can be stated as a requirement for all fields of study.

Besides discipline-specific and general skills and competencies, the Digital World also requires graduates of higher education to have acquired mastery in using the opportunities of digitalisation for good. In most recent studies, the type of skills required by a person are clustered around assumptions on how they will apply them in the future (cf. Working Group on Education, 2017).

Basic functional digital skills

This is about having the basic operational skills for digital devices to be able to use them effectively as a medium for simple information retrieval and modification, including having sufficient knowledge of privacy and security issues. Whilst this appears a very simple skill, successful application is based a lot on experiential and social learning and the pace of change requires constant adaptation and re-evaluation of how each device operates.

Generic digital skills

This is the core of digital device usage for most users. It involves harnessing digital devices to use, interpret and create numeric and literary information sources for communication and collaboration with others. Major areas of usage stretch from daily life and presence in social media, to working in teams and communities and, increasingly in the future, to interacting with machines and dashboards in production processes and the delivery of services. This is a central set of competences, which must be integrated into learning curriculums.

Higher level skills: using digital technology in empowering and transformative ways

This set of skills is more focused on manipulating how a device works (e.g. especially through coding) and what type of operations it can perform. With the further development of computer technologies, the number of levels at which manipulation is taking place will increase (from core programming, e.g. developing new operating systems, to surface programming, e.g. manipulating outputs through higher-level language programming onto of existing elements). However, a key competence in this domain, which is relevant to all persons using digital media is what is termed 'computational thinking', i.e. understanding what the device or the coding is doing, even if a person is not executing (and might not be in a position to execute) this change themselves. This key competence is beginning to enter curricula through coding lessons and camps.

An important challenge associated with all three of these competency domains is the importance of experiential learning in authentic situations. This is a challenge for learning settings both in terms of didactics providing opportunities for such learning, but also for the provision of technical infrastructure. One German concept has termed this combination 'Curriculum 4.0':

"As a curriculum 4.0, we understand a curriculum that takes up the process of digital transformation in a targeted manner, both at the level of content and the skills and competences to be imparted. (...) We [view] digital change in the context of curriculum development holistically as a technical, didactic and content challenge." (Michel et al., 2018)

4.2 POTENTIAL OF DIGITALISATION

This topic area makes it clear that the new tools and learning opportunities presented by digitalisation should be harnessed to fulfil this skills agenda. This requires efforts in three areas: **content, learning experience and recognition of learning**.

Standardised content for learning should be regularly updated and should be enriched through content from innovative fields of practice in society. This calls for more agile learning content development and could benefit from using OER (open educational resources), which are often collaboratively developed and are expected to be modified through use.

The learning experience should give students sufficient opportunities to apply all three types of skill sets together, for instance in problem-based settings. This can be done through closer interaction with real-case scenarios, but also through simulation experiments benefitting from virtual and augmented reality.

But even if students have attained the knowledge and skills to secure their future, is this apparent to third parties? Standard qualifications are the normal form of credential as evidence of attained a certain educational level in a disciplinary area and of having achieved a certain amount of learning. However, the skills and competencies attained are usually implicit. Digital certificates, which can better connect statements about a person to the criteria and evidence they used to obtain these certificates, could contribute to providing a more comprehensive skills profile. Open Digital Badges could be an appropriate technology here. This is how they are being used by some universities in Italy with the Bestr service from CINECA. Similarly, there is the 21st Century Badges from the Education Design Lab in USA, which are being used in multiple universities and colleges in the region.

4.3 RECOMMENDATIONS FROM THE FIRST VERSION OF BOLOGNA DIGITAL

The first version of Bologna Digital made 17 recommendations in total. The numbers below refer to the specific recommendations in the original document.

[This topic was not covered in the first position paper, so there are no recommendations related to it.]

4.4 QUESTIONS FOR THE WORKSHOP

Renewing the curriculum:

- I. What examples are there of the 'skills agenda' being fully and explicitly embedded in higher education curricula?
- II. Which skills or learning objectives are central in the digital age? How long do they remain relevant in highly dynamic working and living environments?
- III. Can compulsory modules be required / set up for all courses of study?

Comprehensive skills and competency profiles:

- IV. What examples are there of additional certificates or documents being used to more comprehensively document what students have learnt.
- V. Are there preconditions, promoting or limiting factors, which might affect the use of such competency profiles

5. TAKING ADVANTAGE OF VIRTUAL EXCHANGE AND MOBILITY

5.1 INTRODUCTION TO THE TOPIC

The internationalisation and mobility of students and staff within the EHEA is seen as a key route to a person's formation as a European and global citizen and to improving social cohesion between populations of different nations. Typically, a distinction is made between cross-border mobility and 'internationalisation at home', although both aspects can be seen as interlinked. In the first case, the focus is on cross-border mobility of people, as captured in the international statistics. In the second case, the aim is to develop an international awareness through the curriculum at the home institution. Yet, digital transformation does also have a major influence on exchange opportunities. The EADTU has recently developed a matrix that distinguishes three major forms of mobility: physical exchange mobility, virtual exchange mobility and open virtual exchange mobility (Ubachs & Henderikx, 2018).

The Erasmus programme and various national initiatives have been highly effective in supporting physical movement of students and staff within the European region (European Commission, 2017). Indeed, there is a Bologna benchmark for more than 20% of graduates of tertiary education within the EHEA region to have experienced foreign studies by 2020.

The EUROSTUDENT data from 2018 shows that this 20% average might indeed have been achieved in 2017 (Hauschildt, Vögtle, & Gwosć, 2018b). However, even then, this means that one in five students and even fewer staff take part in such mobility programmes. There is **no 'mobility for all'** – and more importantly non-traditional students are least likely to be internationally mobile during their studies (Orr, 2012). The additional financial burden associated with enrolment abroad remains the main obstacle for students who do not plan to enrol abroad: 62 % of these students perceive financial restrictions to be a (big) obstacle to enrolment abroad. Almost half (47 %) find the separation from partner, children and friends to present an obstacle; followed by a possible loss of a paid job (35 %) and a lack of motivation (30 %) (Hauschildt, Vögtle, & Gwosć, 2018a).

The Bologna Implementation Report from 2018 therefore concludes: "This calls for improving attention to the mobility participation of students from under-represented groups throughout the EHEA." (European Commission/EACEA/Eurydice, 2018, p. 274)

Good internationalisation strategies involve close cooperation between sending and hosting institutions to create "**mobility windows**" (Ferencz, Hauschildt, & Garam, 2013), which might provide a link between physical mobility and integration of international experiences in the home curriculum (Ferencz & Orr, 2013). Moreover, such initiatives must consider both students and staff in higher education to ensure a good programme.

5.2 THE POTENTIAL OF DIGITALISATION

Participation rates for European students on mobility and exchange programmes have risen, but they continue to exclude some parts of the student population, unable or unwilling to be away from home for an extended period of time. Digital technologies can play a role here in **promoting virtual connections between citizens, fostering network-based learning and enriching physical mobility**.

Online solutions are not necessarily an alternative to physical mobility but can complement physical mobility and/or create new internationalisation experiences. Used well within a didactic concept, they can strengthen the

links between study programmes at the 'home' HEI and those in other countries. Stronger links facilitate more intensive exchange even with shorter periods abroad – when being chosen more frequently (Haaristo & Orr, 2014) – than the standard six to twelve months for student enrolment, which is currently considered necessary for a full exchange period. Moreover, for some students this could be offered as a substitute for going abroad. Some networks of universities have also extended their online courses to include virtual exchanges (see Box 1).

Programme research has shown that students gain through mobility programmes by increasing their resilience in new situations and becoming more open-minded and curious, they feel more confident and ready to take on new challenges after the period abroad, feel more tolerant to other people's behaviours and with all of this better able to cooperate with people from different backgrounds and cultures (European Commission, 2017, p. 20). Harnessing the technologies of social media, video conferencing and virtual teamwork can be used to achieve similar learning outcomes and staff can benefit from working together with colleagues from different HEIs to enrich the overall teaching and learning offer for these students. Especially regarding the focused support and preparation of physically mobility, digital technologies and exchange measures can help students and staff to be better prepared for their period abroad.

The Erasmus+ Virtual Exchange programme aims to harness tools to enable virtual exchange without physical travel.⁵ Working with youth organisations and HEIs, the programme is open to any young person aged 18-30 residing in Europe and the Southern Mediterranean. The focus is on non-formal learning and graduates may open an official open badge detailing what they have learnt. Such credentials could be recognised in higher education as part of a formal course programme (see next section on recognition).

BOX 1: A cooperative learning programme from a group of universities in different countries

A consortium of 12 international universities with large-scale distance learning provision have taken on the challenge of providing a virtual exchange programme with a new initiative. Starting from the assumption that not everyone can or will undertake physical exchange programmes, they are developing a virtual exchange programme for 18 study courses.

The partners are:

- Delft University of Technology, the Netherlands
- École Polytechnique Fédérale de Lausanne, Switzerland
- Hong Kong University of Science and Technology, Hong Kong
- Leiden University, the Netherlands
- Rice University, USA
- The Australian National University, Australia
- The University of Adelaide, Australia

See: <https://www.tudelft.nl/studenten/onderwijs/virtual-exchange/>

⁵ <https://europa.eu/youth/erasmusvirtual>

5.3 RECOMMENDATIONS FROM THE FIRST VERSION OF BOLOGNA DIGITAL

The first version of Bologna Digital made 17 recommendations in total. The numbers below refer to the specific recommendations in the original document.

- 14) Higher education institutions are encouraged to make better use of virtual exchange opportunities as an addition to physical exchange programmes for students and staff.
- 15) Higher education institutions are encouraged to consider making induction courses for their study programmes available online (e.g. through MOOCs), allowing international students to be better informed and better prepared for their on-campus studies abroad.

5.4 QUESTIONS FOR THE WORKSHOP

In preparation for the workshop, please provide first responses to the following questions and, where possible, provide examples or statistics for specific practices.

A focus on supporting physical mobility programmes:

- I. What are the limiting factors for successful student and staff mobility and how can these be reduced by using digital discussion groups and networks?*
- II. How are such digital services being used: (a) to support student and staff preparation for a period of mobility abroad and (b) to encourage a continuation of exchange after the period abroad? Can you provide specific examples of each?*
- III. Are there limiting factors to making more short-term mobility opportunities available to students?*

A focus on online solutions:

- IV. What is the potential of online solutions as alternative to physical mobility? Can such programmes reach the same or similar learning outcomes? What would be the preconditions for this to happen? Can you provide examples?*
- V. Should virtual exchange programmes focus more on subject-related courses or on transversal skills?*

6. FACILITATING RECOGNITION OF (PRIOR) STUDENT LEARNING

6.1 INTRODUCTION TO THE TOPIC

The function of examinations and certificates in society is to simplify the transition between social systems (Waterkamp, 2000) – between different educational levels (i.e. schooling and tertiary education) and later between the educational system and the labour market. In general terms, the central questions here are: what knowledge and competences a person brings from an institution (educational institution, company, etc.) to the new institution and how he or she can prove this – or rather: how this is **formally recognised**.

These questions are particularly relevant to the Bologna Process in two specific contexts: for recognition of prior learning on accessing higher education and for improving the information about graduates when they are exiting higher education. Additionally, when students learn part of their study programme in a different higher education institution (e.g. during mobility programmes) it is helpful to have a flexible recognition system, which is based on smaller units than whole study programmes.

In the first case, the discussion focusses on recognition of prior learning (RPL), in the second on ‘employability’ and in the third on ‘credit points’. Common to all these practical usages is the need for **clear documentation of learning outcomes**. A focus on learning outcomes leaves more flexibility for the issue of where those outcomes were acquired – in a foreign university, in the labour market or on a learning platform (e.g. as a MOOC).

The EHEA has reached an agreement on standards between countries on what constitutes a higher education study programme – with the four cycles of study (short-cycles, Bachelor, Master and Doctoral programmes) commonly understood throughout Europe. Furthermore, the European Credit Transfer System (ECTS) has been established to enable mobile students to have their achievement during a period abroad recognised when they return to their home higher education institution. Additionally, the Bologna Communiqués have emphasised that such developments also require a clearer focus in curricula on learning outcomes.

However, recognition remains a challenge for higher education in the EHEA and this must be confronted through new reforms. A German overview paper argues that there are two principal issues, the first being easier to deal with than the latter (Rampelt et al., 2018):⁶

- If the learning was offered by the higher education institution where the student is enrolled or at least in an HEI as part of a partnership agreement between two or more institutions, recognition should be relatively easy and may in fact be supported through the Lisbon Accord. Such a case is common within Erasmus exchange agreements and may be extended to MOOCs, if they are offered by partnering universities (see example in previous section).
- If the (non-formal) learning is not offered by an accredited HEI, there are less specific regulations on recognition at the moment, although the prominence of the Bologna agendas on widening participation and lifelong learning do exert some pressure on HEIs to enable recognition here.

According to the Trends 2018 report of the EUA, three-quarters of all HEIs responding to their survey state that all of their courses are aligned to specific learning outcomes – a rise from around half in 2010 (Gaebel & Zhang, 2018, p. 35 ff.). Furthermore, HEIs state that recognition of credits or degrees from other institutions has become

⁶ English language version of the paper expected December 2018.

easier (73% agree at least to some extent), cooperation among teaching staff has improved (75%), recognition of prior learning has become easier (68%) and learning pathways have become more flexible.

So, the systems are already in place. However, a critical view from the student perspective complains that implementation of recognition is still weak and often based on single-case decisions. The 2018 publication from ESU entitled “Bologna with student eyes” states (European Students’ Union, 2018):

“In the large number of national contexts such recognition is still not available to students and there seems to be no improvement since the previous Ministerial Communiqué. Lack of trust in validation procedures being seen as the main barrier to development of recognition of prior learning is probably a signal that detailed, reliable and transparent procedures need to be developed and promoted in order to stimulate recognition authorities to improve their recognition of prior learning.”

The challenge for recognition is, therefore, to find a way of simplifying exchange through good documentation and good information exchange. Digitalisation offers potentials in these areas.

6.2 THE POTENTIAL OF DIGITALISATION

Developments related to increased mobility of students, widening pathways into higher education and widening learning pathways through higher education to include both physical and digital provisions present clear challenges to higher education. These call for a more comprehensive and seamless recognition of learners’ competences. Especially the recognition of prior digital learning (RPDL) shows potential for opening up universities, but it requires transparency and has to abide by the regulations set by those within the system in order to build trust.

Digital solutions can help:

- The exchange of quality-assured information on what was learnt by a student between one learning place and another (HEI to HEI or MOOC to/and HEI).
- To document learning in a standardised format, which can assist the exchange of information without being reliant on curricular standards.

Exchange of data for recognition of credits

In general terms, digital solutions call for common digital student data depositories, which will make the exchange of information about students on their learning achievements easier, more efficient and more transparent. The Groningen Declaration focusses on this technical-operative topic and highlights the need to pay attention to the issues of ownership of data sets, privacy rights and identification, access, compatibility, comparability, acceptance, and recognition.⁷ An example of such a data depository with a focus on mobile students is the EMREX project.⁸ EMREX is a solution to electronic transfer of student records between higher education institutions in Europe being trailed by five European countries currently. The biggest benefit of EMREX is seen in the increased transparency, quality and reliability of information about student records of achievement, which will facilitate recognition between higher education institutions. There are also further initiatives looking to streamline data flows between institutions – some of the most well-known ones are focussing in this issue within the context of Erasmus exchange programmes, such as Erasmus Without Paper (EWP),⁹ Erasmus Dashboard¹⁰ and the Online Learning Agreement.¹¹ A more ambitious initiative is now being taken by the European Commission with the

⁷ <https://www.groningendeclaration.org/>

⁸ <http://www.emrex.eu/>

⁹ <https://www.erasmuswithoutpaper.eu>

¹⁰ <https://www.erasmus-dashboard.eu/intro>

¹¹ <https://www.learning-agreement.eu/start/>

efforts to establish the EU Student eCard. This initiative is just starting with the aim to have a fully operational system across Europe by 2025 (European Commission, 2018).

There are other European wide initiatives looking into the integration of micro-credentials into higher education services. The project MicroHE is currently reviewing requirements and the feasibility of such systems, including the application of blockchain technologies for robustness and reliability. The micro-credentials being developed should have the capability to be aligned to the existing ECTS standards.¹²

Credentials and Documentation

More comprehensive recognition will also require new formats for displaying learning achievements, which go far beyond the idea of a digital transcript of courses and acquired ECTS points. More comprehensive profiles are especially relevant for the following cases:

- For the purpose of widening participation: for informal and non-formal learning acquired before entering higher education, especially when the learner has a lower than normally required level of formal education or this formal education was acquired a long time ago.
- For the purpose of highlighting transversal and 21st skills, which are implicit, but not explicit to the main curriculum, e.g. communication skills, teamwork, creativity, political engagement.

A credential, in its most essential form, is a statement awarded from one party to another describing the latter's qualities. Credentials are used for the purpose of proving to a third party that the holder qualifies for something. An educational credential is typically awarded by a responsible and authorized body that attests that an individual has achieved specific learning outcomes or attained a defined level of knowledge or skill relative to a given standard. (ACE, 2016, p. 5)

Currently different technologies are used with digital badges being amongst the most prominent. The Horizon Report on educational technology in higher education considers the integration of alternative credential schemes into higher education a 'solvable challenge' (Adams Becker et al., 2017). As an example, all digital badge solutions have the same general characteristics, since global specifications are managed through the IMS Global Learning Consortium. Open Badges contain detailed metadata about achievements: Who earned a badge, who issued it, what were the awarding criteria and the context? Earners and issuers have unique identifiers and the openness of the standards allows the badges to be saved on multiple platforms (e.g. in the HEIs learning management system like Canvas, in professional networks like LinkedIn and other platform services). Prominent examples are: Bestr from Italy, Open Badge Factory from Finland, Badgr and Credly from the USA. Indeed, the open badge standards is already being offered for the Erasmus+ Virtual Exchange programme through the Open Badge Factory.¹³

Quality of Credentials

If new forms of documentation are being used, this leads to some challenges for quality assurance and recognition – i.e. finding the similarities between the 'alternative credential' and common credentials.

In general, the standards that exist for formal recognition and quality assurance in higher education can and should also be applicable to any new forms of (open) learning, certification and credentialization. This means, that when assessing credentials as a proof for the quality of (open) learning, key elements of a qualification should always be considered, with learning outcomes being the most important criterion (Nuffic, 2016).

¹² <https://microcredentials.eu/>

¹³ https://europa.eu/youth/erasmusvirtual/erasmus-virtual-exchange-badges_en

As part of the PARADIGMS project the Dutch ENIC-NARIC NUFFIC has recently released a criteria framework which aims to solve this problem (NUFFIC, 2018). The detailed criteria could, indeed, be applied to both virtual and physical programmes. The authors recommended seven criteria:

1. Quality of the study programme – this criterion focusses on the legitimacy of the awarding organisation, i.e. Is it well-known and accepted by third-parties? Does it use internal and external quality assurance mechanisms?
2. Verification of the certificate – this criterion focusses on whether the certification can be independently verified, i.e. Can it be externally found and checked (as a badge it would have its own URL)? Does it have a watermarked signature etc?
3. Level of the study programme – this criterion is about assessing what level of education outcome was demonstrated through the certificate? This can be reviewed directly in the curriculum or implied through access requirements.
4. Learning outcomes – this criterion relates to details on the envisaged learning outcomes and how these might be aligned with the outcomes of more standard study programmes.
5. Workload (volume) – this criterion uses study hours and similar to try and align the outcome with similar outcomes from more standard study programmes.
6. The way study results are tested – this criterion seeks to ensure that the stated outcomes were actually proven through some kind of assessment.
7. Identification of the participant – this criterion looks to evidence that the holder of the credential is also the person who demonstrated their competencies and knowledge to achieve it.

Based on this, the OEPass project (Camilleri & Rampelt, 2018) has slightly adapted the model suggested by NUFFIC for the evaluation of the necessary elements of the credential statement (see figure 3).

	Learning Outcomes	Quality of Learning	Level of Learning	Workload of Learning	Assessment of Learning Outcomes	Identity of Learner	Identity & Reputation of Issuer
Credential	<ul style="list-style-type: none"> Red Orange Green No Info 	<ul style="list-style-type: none"> Red Orange Green No Info 	<ul style="list-style-type: none"> Red Orange Green No Info 	<ul style="list-style-type: none"> Red Orange Green No Info 	<ul style="list-style-type: none"> Red Orange Green No Info 	<ul style="list-style-type: none"> Red Orange Green No Info 	<ul style="list-style-type: none"> Red Orange Green No Info

Figure 3: Elements of a Credential Statement (Camilleri & Rampelt, 2018, p. 5)

When using such criteria to evaluate the quality of a credential it also has to be clear, though, that high quality credentials can have different characteristics and do not necessarily need to comply with all criteria to the same extent (also see Nuffic, 2018).

6.3 RECOMMENDATIONS FROM THE FIRST VERSION OF BOLOGNA DIGITAL

The first version of Bologna Digital made 17 recommendations in total. The numbers below refer to the specific recommendations in the original document.

- 3) HEIs are encouraged to develop and publish procedures (steps to take) for the assessment and recognition of prior (digital) learning achieved through different forms of (open) online education building upon quality assurance to be done by MOOC providers. This can also facilitate the gradual integration of non-traditional learners into full programmes of study and allow for more flexible student journeys.
- 4) HEIs are invited to publish a list of MOOCs and micro-credentials, which they can accept as part of their degree programmes and to accordingly develop transparent digital recognition management solutions.

- 5) HEIs are encouraged to discontinue paper-based admission processes and expand the use of electronic student data in order to inform, secure and speed up recognition and admission processes, based on the principles laid down in the Groningen Declaration.
- 6) Governments and the EU are invited to support the establishment and networking of centralised (national) electronic depositories of student data (in line with the principles laid down in the Groningen Declaration) and implement adequate measures to ensure a high level of data security and protection.
- 7) The EU Student Card proposed by the European Commission should be considered a (virtual) Lifelong Learning Card facilitating admission decisions on a much wider scale.
- 12) Higher education institutions are encouraged to make use of digital solutions (e.g. digital badges) to ensure a more detailed documentation of the knowledge, skills, competences and experience gained by students during their learning progress.
- 13) The EU is encouraged to continue working with governments and stakeholders on envisioning and implementing European-wide solutions, with high acceptance in the labour market (e.g. Europass reform)

6.4 QUESTIONS FOR THE WORKSHOP

In preparation for the workshop, please provide first responses to the following questions and, where possible, provide examples or statistics for specific practices.

A focus on interoperable student data repositories for university learning:

- I. How realistic is the use of common student data repositories for international exchange students? Can this merge achievements in virtual mobility and physical mobility periods? Do we have emerging solutions on national and/or European level? What are the limiting factors?*
- II. How realistic is a whole student record in a common student data repositories? Would this really be advantageous students? Would this be a digital transcript of the so-called 'diploma supplement' or would it move closer to developments of the new 'Europass' CV?*

A focus on recognition:

- III. Could digital solutions such as (open) badges or recognition management platforms help to scale current recognition of prior learning practices, which are often decided on a case-by-case basis? Can you provide examples to justify your responses?*
- IV. What criteria are needed for the recognition of prior digital learning? In your opinion, is there a need for revising existing standards and Bologna tools?*
- V. Who should define the quality of non-formal learning? Do HEIs need (digital) centralized support in order to reduce efforts and make better informed recognition decisions?*

7. STRATEGIES FOR TEACHING AND LEARNING IN THE DIGITAL AGE

7.1 INTRODUCTION TO THE TOPIC

A new vision for contemporary higher education must necessarily provide a clear understanding on how digital technologies can enrich the student experience in the European Higher Education Area. This requires strategic approaches to teaching and learning on national as well as institutional level. The first rounds of the Bologna Process aimed to increase the quality of learning and teaching by indirect means – focussing on structural reforms to standardise and harmonise structures and processes around study conditions. While individual academic autonomy for the implementation of concepts for teaching is the backbone of the EHEA, there is further need to acknowledge that major improvements to ensure and enhance the quality and relevance of learning and teaching can only take place in an ecosystem of strong institutional and national support.

Related reform and adaptation can only be implemented in higher education through concerted efforts at three levels – national, institutional and individual levels. The institutional level is the remit of the management and leadership of a HEI, where the objective is to react adequately to changes in the institutional environment. This requires changes to processes and encouragement of specific behaviours by academics and administrative staff through organisational change which is enabling and encouraging. Higher education policy and state regulations are an important part of the environment of a higher education institution. Institutions and the behaviours of staff in higher education are governed by regulations, incentive-setting and monitoring instruments set by higher education policy.

Put more succinctly, the combination between state-level policy and strategic efforts of higher education institutions set common goals and directions, focuses efforts, defines organisational structures and provides a certain stability to institutional responses (Mintzberg, Ahlstrand, & Lampel, 2009). So, whilst higher education institutions should be developing strategies for higher education in the digital age to fully harness the opportunities and limit the risks of digital technologies, state policy should work to ensure that the environment within which higher education institutions operate is supportive of digitalisation.

In the context of new public management, higher education institutions have been actively using strategy to secure collective and coherent responses to changes in their environment, including adoption of the Bologna Process structures (Jongbloed, 2015); and the challenges of 'Bologna Digital' should be treated in the same way.

7.2 CHALLENGES OF DIGITALISATION

A European analysis on strategic development in higher education institutions commissioned by the European Commission and the OECD in the context of the HEI Innovate initiative (see box), warn against a 'tick-box' approach to implementing change (Gibb, Hofer, & Klofsten, 2018). The challenge for strategies for higher education in the digital age is that this approach is common if there is a main focus on provision of infrastructure and digital devices. Innovation research warns against this: if the focus is primarily on technological innovation, social innovations (changes to people and processes) are understood mainly in their functional relationship to this (Howaldt, 2009; Howaldt & Schwarz, 2010). Instead – and as argued in the introduction to this paper – digital-enhancement in the sense of 'Bologna Digital' requires: "...a holistic, well-designed and integrated strategy that considers technologies as a key enabler and addresses specific, relevant institutional issues and requirements." (Gibb et al., 2018, p. 7; Kelly & Hess, 2013).

According to the EUA Trends study, around half of all responding HEIs affirmed (“Yes, it is the case”) that digital learning was “becoming part of the institutional strategy” and just under half affirmed that digital learning was now being used more strategically (Gaebel & Zhang, 2018). This is good news, although it currently tells us little of how embedded digitally-enhanced teaching and learning are. It does, however, put an important emphasis on digitalisation being part of holistic strategic approaches rather than isolated digitalisation strategies.

The challenge of digitalisation is to find a way to embed it into the whole operation of the higher education institution. That is to say that the goal of strategies for higher education in the digital age should not be the provision of digital services, but the improvement of teaching and learning through digitalisation. This objective requires a high level of cooperation throughout the institution, which brings together the various parts of the HEI’s operation to ensure that all perspectives on objectives and capacities are considered:

- a strategic vision, which emphasises specific teaching and learning objectives (such as those presented in the previous chapters)
- involvement of teaching and administrative staff, staff in on-campus computer centres and libraries and student representatives in the design and implementation of strategies
- capacity-building efforts for teaching and administrative staff
- a common monitoring framework

Since most HEIs will be dealing with this challenge and looking for solutions at the same time, the opportunity for sharing and exchanging knowledge and indeed best practices should be considered.

As mentioned above, national policy frameworks are also a key enabler in this context – and if they have not been adapted to the impacts of digitalisation such as flexibility and personalisation of support, they can also be an inhibitor. Therefore, it is vital that policies (strategies) are also launched at national level, which support and promote a digitally-enhanced provision of higher education.

The Bologna Process Implementation Report found that most higher education systems have a national strategy or policies in place on the use of digital technologies in learning and teaching (European Commission/EACEA/Eurydice, 2018). Four countries (Estonia, Germany, Italy, and the Netherlands) have a specific strategy on the use of digitally-based teaching and learning methods in higher education and 21 promote and support institutions in making the use of new technologies mainstream. However, only seven systems provide new resources for staff training on this (Croatia, Czech Republic, Finland, France, Germany, Kazakhstan, and Poland).

This level of reporting provides only minimal insight into whether and how governments are truly supporting ‘Bologna Digital’ becoming a reality. This leads to the conclusion that there is not a monitoring framework currently being used, which provides sufficient insights into how ‘Bologna Digital’ strategies and policies are structured and how effective they are.

7.3 RECOMMENDATIONS FROM THE FIRST VERSION OF BOLOGNA DIGITAL

The first version of Bologna Digital made 17 recommendations in total. The numbers below refer to the specific recommendations in the original document.

- 8) Higher education institutions are encouraged to consider making the use of digitally-enhanced learning environments an important institutional strategy in order to enhance the learning experience and success of all learners they serve.
- 9) Higher education institutions are encouraged to collaborate in developing digitally- enhanced learning environments (e.g. making use of and further developing open educational resources) to ensure peer learning and quality improvements between higher education institutions.
- 10) Governments and the EU are invited to provide funding to higher education institutions and other stakeholders to support teaching staff's pedagogical innovations.
- 11) Stakeholders are invited to explore the idea of creating a Europe-wide platform for digital higher education and enhanced cooperation (one-stop-shop).

7.4 QUESTIONS FOR THE WORKSHOP

In preparation for the workshop, please provide first responses to the following questions and, where possible, provide examples or statistics for specific practices.

A focus on supporting didactics and professionalisation of teaching staff

- I. *Can clear recommendations be made on the appropriate approach to digitally-enhanced teaching and learning?*
- II. *How can the professionalisation of teaching staff be implemented in the context of academics with a high level of professional and organisational autonomy?*

A focus on monitoring:

- III. *Should a reporting system be developed at Bologna-level (BFUG) to capture the strategic activities of HEIs and states in the area of Bologna Digital? (Could this be provided like a traffic-like system used for the previous 'Bologna Scoreboards' and captured through the BFUG survey)?*
- IV. *Would it be useful to collect 'good practice' examples of integrated strategies for higher education in the digital age?*
- V. *Would it be possible to set up a framework of enabling factors for national higher education policies of digitalisation in higher education? This could be based on the EUA's Autonomy Observatory.¹⁴*

A focus on opportunities for cooperation and collaboration

- VI. *Higher education is increasingly competitive. What are the real chances of collaboration in the development of common strategies and of sharing common learning materials?*

A focus on strategy development

- VII. *Do higher education institutions need (governmental) support for their strategy development with a focus on teaching and learning in the digital age? If yes, what would such support schemes look like?*

¹⁴ <https://www.university-autonomy.eu/>

8. QUALITY ASSURANCE

8.1 INTRODUCTION TO THE TOPIC

The establishment of quality assurance as a key element to higher education provision has been one of the success stories of the Bologna Process. Quality assurance systems were seldom in 1999, when the Bologna Declaration was signed, but today there is a consensus that quality assurance is necessary to ensure accountability and support enhancement and 22 countries have established external quality assurance agencies since the Bologna Process was launched (European Commission/EACEA/Eurydice, 2018). The agencies have the remit to assure the transparency of provision and to set threshold norms, which must be fulfilled by higher education providers for the learning experience. These relate to infrastructure, staffing levels and qualifications, methods for developing curricula, but they also pay attention to performance indicators such as student completion rates and student satisfaction. It is recognized that quality assurance has been a key element in trust-building for higher education within society and for recognition between member states of the EHEA (Szabo & Tück, 2018). This development has been facilitated by the European Association for Quality Assurance in Higher Education (ENQA), the European Quality Assurance Register for Higher Education (EQAR) and formalized in the European Standards and Guidelines for Quality Assurance across the European Higher Education Area. The challenge for quality assurance currently, is that it has been focussed on assuring the institutional integrity of higher education provisions and has paid less attention to learning outcomes and other performance indicators (Hazelkorn, 2018). It has also not yet sufficiently looked into standards for digital technologies used for teaching, learning and recognition (Camilleri, Rampelt, 2018).

Ensuring and improving the quality of teaching and learning for all students in higher education is a central challenge for institutions and policy-makers, but current forms of quality assurance are very institution-centred. This type of quality assurance will be significantly challenged, if provision of learning units (leading e.g. to micro-credentials) is not directly aligned to individual HEIs, which have already received positive quality assurance reviews.

8.2 CHALLENGES OF DIGITALISATION

Within the framework of the Bologna Process, clear standards and guidelines (ESG) have been established. Its relevance and usefulness for digital approaches and technologies is, however, often still subject to great uncertainty. Existing criteria and measures for quality assurance must accordingly be renewed and supplemented, to take appropriate account of digitalisation in teaching and learning and to ensure security and transparency for all status groups. If digital learning leads to students acquiring learning in many different settings, a less institution-focussed provision could also lead to the requirement for a more learner-centred quality assurance framework. Additionally, quality standards for digital technologies used at HEIs need to be discussed.

It is not yet clear which new criteria will be necessary. The new Digital Education Agenda remind us, for instance, that a learning provision which is largely digital, must also ensure that the learner has sufficient access to adequate digital infrastructure and has sufficient digital literacy skills – otherwise a digital provision will only increase socio-structural divides in society (European Commission, 2018).

But perhaps it is possible to align these new demands on quality assurance with efforts in other circumstances to provide more learner-centred quality assurance. In this case, digital platforms may prove advantageous, since they offer the chance to capture relevant data through activities on the learning platform instead of indirectly through surveys. This, however, also requires transparent standards for such platforms and data processing.

8.3 RECOMMENDATIONS FROM THE FIRST VERSION OF BOLOGNA DIGITAL

The first version of Bologna Digital made 17 recommendations in total. The numbers below refer to the specific recommendations in the original document.

- 16) Stakeholders and public authorities (EHEA, EU) are encouraged to work together and identify a set of quality criteria (rubrics) and quality indicators that would help higher education institutions, students and accreditors gauge the quality and relevance of online learning provisions and alternative learning credentials.
- 17) Governments and the EHEA are encouraged to review current quality assurance measures and to extend these to include appropriate procedures for new forms of (online) lifelong learning. In this context, governments and stakeholders could encourage the creation of one or more dedicated European agencies, focusing on assessing digital lifelong learning offerings, e.g. MOOCs.

8.4 QUESTIONS FOR THE WORKSHOP

In preparation for the workshop, please provide first responses to the following questions and, where possible, provide examples or statistics for specific practices.

- I. *How significant will the use of online learning be for further developments of quality assurance within the Bologna Process? Which aspects emerging with digital provision have already been clarified with the existing standards and guidelines?*
- II. *Will quality assurance of new online providers be implemented as a separate system, integrated into the current system or will it be carried out indirectly by HEIs, which have already achieved a formal quality assurance from the national system?*
- III. *What new quality standards may be needed in dealing with digital technologies?*
- IV. *Which technological standards would be indispensable for interoperability and usability?*

REFERENCES

- Adams Becker, S., Cummins, M., Davis, A., Freeman, A., Hall Gieseinger, C., & Ananthanarayanan, V. (2017). NMC Horizon Report Higher Education Edition 2017. [https://doi.org/ISBN 978-0-9977215-7-7](https://doi.org/ISBN%20978-0-9977215-7-7)
- Arbeitsgruppe Curriculum 4.0 (2018). Curriculumentwicklung und Kompetenzen für das digitale Zeitalter – Thesen und Empfehlungen der AG Curriculum 4.0 des Hochschulforum Digitalisierung. Arbeitspapier Nr. 39. Berlin: Hochschulforums Digitalisierung. Retrieved from https://hochschulforumdigitalisierung.de/sites/default/files/dateien/HFD_AP_Nr39_Empfehlungen_der_AG_4_0_WEB.pdf
- Behle, H., & Maher, S. (2018). Measuring “Teaching Excellence” and “Learning Gain” in the United Kingdom. Beiträge Zur Hochschul-forschung, 2, 48–67. Retrieved from http://www.bzh.bayern.de/uploads/media/2_2018_Behle_Maher.pdf
- Bialik, M., & Fadel, C. (2018). Knowledge for the Age of Artificial Intelligence: What Should Students Learn? Retrieved from http://curriculumredesign.org/wp-content/uploads/CCR_Knowledge_FINAL_January_2018.pdf
- Camilleri, A., Rampelt, F. (2018). Assuring the Quality of Credentials to support Learning Innovation. Vienna: 13th European Quality Assurance Forum „Broadening the scope of QA“. Retrieved from <https://eua.eu/resources/publications/790:assuring-the-quality-of-credentials-to-support-learning-innovation.html>
- Castells, M. (2010). The Rise of the Network Society. Massachusetts: Blackwell Publishing. <https://doi.org/10.2307/1252090>
- Cerwal, P. (Ed.). (2017). Ericsson Mobility Report. Retrieved from [https://www.ericsson.com/assets/local/mobility-report/docu-ments/2017/ericsson-mobility-report-june-2017.pdf](https://www.ericsson.com/assets/local/mobility-report/documents/2017/ericsson-mobility-report-june-2017.pdf)
- Eckert, N., Gallenkämper, J., Heiß, H.-U., Kreulich, K., Mooraj, M., Müller, C., ... Spiegelberg, G. (2018). Smart Germany - Engineer-ing education for the digital transformation (Discussion paper for the VDI Quality Dialogue).
- European Commission/EACEA/Eurydice. (2018). The European Higher Education Area in 2018: Bologna Process Implementation Report. Cham: Education, Audiovisual and Culture Executive Agency. <https://doi.org/10.2797/63509>
- European Commission. (2016a). Improving and Modernising Education. Retrieved from <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016DC0941&from=EN>
- European Commission. (2016b). A new skills agenda for Europe. Com/2016/0381. Retrieved from <http://www.ipex.eu/IPEXL-WEB/dossier/document/COM20160381.do>
- European Commission. (2017). Erasmus+ Enriching lives, opening minds. Annual Report 2016. European Union. Retrieved from <https://publications.europa.eu/en/publication-detail/-/publication/49350560-0d56-11e8-966a-01aa75ed71a1/language-en>
- European Commission. (2018). Communication on the Digital Education Action Plan. Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0022&from=EN>
- European Students' Union. (2018). Bologna with student eyes. ESU. Retrieved from [https://www.esu-online.org/wp-content/up-loads/2018/06/BWSE-2018_web_Pages.pdf](https://www.esu-online.org/wp-content/uploads/2018/06/BWSE-2018_web_Pages.pdf)
- Ferencz, I., Hauschildt, K., & Garam, I. (2013). Mobility Windows – From concept to practice. Lemmens.
- Ferencz, I., & Orr, D. (2013). Types of mobility windows. In I. Ferencz, K. Hauschildt, & I. Garam (Eds.), Mobility Windows - From con-cept to practice (pp. 37–47). Lemmens.
- Gaebel, M., & Zhang, T. (2018). Trends 2018 – Learning and teaching in the EHEA. European University Association. Retrieved from <https://eua.eu/resources/publications/757:trends-2018-learning-and-teaching-in-the-european-higher-education-area.html>
- Gibb, A., Hofer, A.-R., & Klofsten, M. (2018). The entrepreneurial higher education institution: a review of the concept and its rele-vance today. Retrieved from https://heinnovate.eu/sites/default/files/heinnovate_concept_note.pdf
- Haaristo, H.-S., & Orr, D. (2014). Student and Staff Mobility in Times of Crisis. DAAD. Retrieved from https://eu.daad.de/me-dien/eu/publikationen/studien/2014-mobility_in_times_of_crisis.pdf
- Hauschildt, K., Vögtle, E. M., & Gwosć, C. (2018a). EUROSTUDENT VI. Overview and selected findings. wbv Media. <https://doi.org/10.3278/104-274w>
- Hauschildt, K., Vögtle, E. M., & Gwosć, C. (2018b). Social and Economic Conditions of Student Life in Europe. W. Bertelsmann. <https://doi.org/10.3278/6001920cw>
- Hazelkorn, E. (2018). The Accountability and Transparency Agenda: Emerging Issues in the Global Era. In A. Curaj, L. Deca, & R. Pricopie (Eds.), European Higher Education Area: The Impact of Past and Future Policies (pp. 423–439). Cham: Springer Interna-tional Publishing. <https://doi.org/10.1007/978-3-319-77407-7>
- Howaldt, J. (2009). Vom Wandel des Innovationsverständnisses von der Industrie- zur Wissensgesellschaft.
- Howaldt, J., & Schwarz, M. (2010). Social Innovation: Concepts, research fields and international trends. ZWE TU-Dortmund. Re-trieved from http://www.asprea.org/images/IMO_Trendstudie_Howaldt_englisch_Final_ds.pdf
- Jansen, D., & Konings, L. (2017). MOOC Strategies of European Institutions. EADTU. Retrieved from <https://eadtu.eu/home/policy-areas/open-education-and-moocs/publications/413-mooc-strategies-of-european-institutions>

- Jongbloed, B. (2015). Universities as hybrid organizations: Trends, drivers, and challenges for the European university. *International Review of Public Administration*, 45(3), 207–225. <https://doi.org/10.1080/00208825.2015.1006027>
- Kelly, A. P., & Hess, F. M. (2013). Beyond retrofitting - innovation in higher education. Hudson Institution Initiative on Future Innovation. Retrieved from [http://www.hudson.org/content/research/attachments/attachment/1121/beyond_retrofitting-innovation_in_higher_ed_\(kelly-hess_june_2013\).pdf](http://www.hudson.org/content/research/attachments/attachment/1121/beyond_retrofitting-innovation_in_higher_ed_(kelly-hess_june_2013).pdf)
- Michel, A., Baumgartner, P., Brei, C., Hesse, F., Kuhn, S., Pohlenz, P., Quade, S., Seidl, T., Spinath, B. (2018). Framework zur Entwicklung von Curricula im Zeitalter der digitalen Transformation. Berlin: Hochschulforum Digitalisierung. Retrieved from https://hochschulforumdigitalisierung.de/sites/default/files/dateien/Diskussionspapier1_Framework_Curriculumentwicklung.pdf
- Mintzberg, H., Ahlstrand, B., & Lampel, J. (2009). *Strategy Safari: The Complete Guide Through the Wilds of Strategic Management*. FT Prentice Hall.
- NUFFIC. (2018). Oops a MOOC! Dealing with eclectic learning in credential evaluation (Policy paper No. 2). Retrieved from <https://www.nuffic.nl/documents/321/oops-a-mooc.pdf>
- Orr, D. (2012). Mobility is not for all. (B. Wächter, Q. K. H. Lam, & I. Ferencz, Eds.), *Tying it all together. Excellence, mobility, funding and the social dimension in higher education*. Bonn: Lemmens. Retrieved from http://www.aca-secretariat.be/fileadmin/aca_docs/images/members/ACA_2012_Tying_it_together..pdf
- Orr, D., Usher, A., Haj, C., Atherton, G., & Geanta, I. (2017). Study on the impact of admission systems on higher education outcomes Volume I: Comparative report (Vol. I). <https://doi.org/10.2766/698050>
- Orr, D., van der Hijden, P., Rampelt, F., Röwert, R., & Suter, R. (2018a). Digitalisation as powerful means for the Bologna Process in European higher education to meet its goals. Retrieved from <https://www.iau-tech.net/single-post/2018/04/09/Digitalisation-as-powerful-means-for-the-Bologna-Process-in-European-higher-education-to-meet-its-goals>
- Orr, D., van der Hijden, P., Rampelt, F., Röwert, R., & Suter, R. (2018b). Position Paper "Bologna Digital." Retrieved from <https://hochschulforumdigitalisierung.de/en/bologna-digital-0>
- Orr, D., Weller, M., & Farrow, R. (2018). Models for online, open, flexible and technology enhanced higher education across the globe – a comparative analysis. *International Council for Open and Distance Education*. Retrieved from https://oerhub.net/OOFAT/wp-content/uploads/2018/04/Models-report-April-2018_final.pdf
- Paris Communiqué. (2018). Retrieved from <http://www.ehea2018.paris/Data/EIFinder/s2/Communique/EHEAParis2018-Communique-final.pdf>
- Rampelt, F., Birkammerer, H., Ghannam, M., Röwert, R., Suter, R. (2018a). Geflüchtete als Pioniere innovativer Zugangswege. In: *Flucht und Studium*. Ausgabe 2/2018. Berlin: uni-assist e. V. Retrieved from <https://www.researchgate.net/publication/329400616>
- Rampelt, F., Birkammerer, H., Röwert, R., Suter, R. (2018b). Opening up Higher Education in the Digital Age. On the Potential to Unite the Social Dimension and the Digitalisation of Higher Education in Europe. In: *Internationalisation of Higher Education – Developments in the European Higher Education Area and Worldwide*. Issue 3. pp. 27 - 42. DUZ Academic Publishers. Retrieved from <https://www.ehea-journal.eu/en/handbuch/gliederung/#/Beitragsdetailansicht/689/2433>
- Rampelt, F., Niedermeier, H., Röwert, R., Wallor, L., Berthold, C. (2018c). Digital anerkannt. Möglichkeiten und Verfahren zur Anerkennung und Anrechnung von in MOOCs erworbenen Kompetenzen. Arbeitspapier Nr. 34. Berlin: Hochschulforum Digitalisierung. Retrieved from https://hochschulforumdigitalisierung.de/sites/default/files/dateien/HFD_AP_34_Digital_Anerkannt.pdf
- Rampelt, F., Orr, D., Suter, S. (2018d). "Bologna Digital" – den Europäischen Hochschulraum durch digitale Lösungen stärken. Retrieved from <https://hochschulforumdigitalisierung.de/de/blog/bologna-digital-positions-papier-europaeischer-hochschulraum>
- Randall, L., Berlina, A., Teräs, J., & Rinne, T. (2018). Digitalisation as a tool for sustainable Nordic regional development (Discussion paper prepared for Nordic thematic group for innovative and resilient regions). Retrieved from http://www.nordregio.org/wp-content/uploads/2017/04/Digitalisation_Discussion-Paper_Jan-31.pdf
- Schmid, U., & Baeßler, B. (2016). Strategieoptionen Für Hochschulen im digitalen Zeitalter (No. 29). Retrieved from https://hochschulforumdigitalisierung.de/sites/default/files/dateien/HFD_AP_Nr29_Strategieoptionen_fuer_Hochschulen_im_digitalen_Zeitalter.pdf
- Szabo, M., & Tück, C. (2018). Fostering Trust and Transparency Through Quality Assurance. In A. Curaj, L. Deca, & R. Pricopie (Eds.), *European Higher Education Area: The Impact of Past and Future Policies* (pp. 569–587). Cham: Springer International Publishing. <https://doi.org/10.1007/978-3-319-77407-7>
- Ubachs, G., & Henderikx, P. (2018). EADTU Mobility Matrix, (pp. 26). Maastricht, NL: EADTU. Retrieved from <https://tinyurl.com/EADTU-mobility-matrix>
- Ubachs, G., & Lizzie, K. (Eds.). (2018). *The Envisioning Report for Empowering Universities*. EADTU. Retrieved from http://empower.eadtu.eu/images/report/The_Envisioning_Report_for_Empowering_Universities_2nd_edition_2018.pdf#page=24
- Unger, M., & Zaussinger, S. (2018). Background Paper - The New Student: Flexible Learning Paths and Future Learning Environments. Institute for Advanced Studies. Retrieved from <https://www.eu2018.at/calendar-events/political-events/thenewstudent.html>
- Yerevan Communiqué. (2015). Retrieved from <https://enqa.eu/wp-content/uploads/2015/06/Yerevan-Communique.pdf>

WORKSHOP AGENDA



Expert Workshop “Bologna Digital 2020”

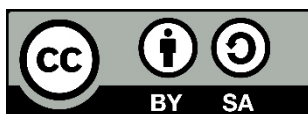
Friday, December 14th 2018

[Allianz Forum, Pariser Platz 6, 10117 Berlin](#) (Room E.042)

- | | |
|----------------------|--|
| 9:30 - 9:45 | Welcome & Introductory Remarks
<i>Oliver Janoschka, Hochschulforum Digitalisierung</i> |
| 9:45 - 11:00 | Introduction to “Bologna Digital 2020”
<i>Florian Rampelt, Hochschulforum Digitalisierung</i>
<i>Dominic Orr, FiBS Research</i> |
| 11:00 - 11:15 | Coffee break |
| | World Café (Each participant chooses 3 of 6 topics in total) |
| 11:15 - 11:45 | World Café Session 1
<i>All 6 topic areas – discuss guiding questions, collect examples of good practice</i> |
| 11:45 - 12:15 | World Café Session 2
<i>All 6 topic areas – discuss guiding questions, collect examples of good practice</i> |
| 12:15 - 12:45 | World Café Session 3
<i>All 6 topic areas – discuss guiding questions, collect examples of good practice</i> |
| 12:45 - 13:30 | Lunch break |
| 13:30 - 15:30 | Presentation and Discussion of Results from the 6 Topic Areas
<i>20 minutes per presentation and discussion.</i> |
| 15:30 - 15:45 | Coffee break |
| 15:45 - 16:30 | Discussion of Policy Recommendations |
| 16:30 - 17:00 | Next Steps |
| from 18:00 | Dinner (HABEL am Reichstag, Luisenstraße 19, 10117 Berlin) |

Final Agenda, 09/12/2018

IMPRINT



This work is accessible under a Creative Commons licenses of the type Attribution ShareAlike CC BY-SA 4.0 International. To inspect a copy of this license, please consult <http://creativecommons.org/licenses/by-sa/4.0/>. Exempted from this license are organisational logos and, if tagged, individual images and visualisations.

Cite as

Orr, D., Rampelt, F. (2018). Bologna Digital 2020. Towards a digital dimension in the Bologna Process. Background Paper. Berlin: Hochschulforum Digitalisierung. 2nd, revised version.

Published by

Hochschulforum Digitalisierung at Stifterverband für die Deutsche Wissenschaft e.V.
Hauptstadtbüro · Pariser Platz 6 · 10117 Berlin · T 030 322982-520 · info@hochschulforumdigitalisierung.de

Publishing House

Edition Stifterverband – Verwaltungsgesellschaft für Wissenschaftspflege mbH
Barkhovenallee 1 · 45239 Essen · T 0201 8401-0 · mail@stifterverband.de

Graphics & Layout

atelier hauer + dörfler gmbh · Charlottenstraße 17 · 10117 Berlin

Photos

Cover: [shutterstock.com](https://www.shutterstock.com); Chapter separators: [unsplash.com](https://www.unsplash.com)

Hochschulforum Digitalisierung (HFD) orchestrates the discourse on higher education in the digital age. As an innovation driver, it informs, advises and connects stakeholders from higher education institutions, politics, business and society.

Founded in 2014, HFD is a joint initiative by Stifterverband für die Deutsche Wissenschaft, CHE Centre for Higher Education and the German Rectors' Conference (HRK). It is sponsored by Germany's Federal Ministry of Education and Research (BMBF).

www.hochschulforumdigitalisierung.de/en