"Bologna Digital"—Actively Shaping the Digital Transformation in European Higher Education

Dominic Orr, Florian Rampelt, and Alexander Knoth

1 Introduction—The Challenge of Digitalisation

Digitalisation has been a hot topic in policy and the media for the last few years. At its most ambitious, it should lead to: "The transformation of all sectors of our economy, government and society based on the large-scale adoption of existing and emerging digital technologies." (Randall et al. 2018). But this citation, although helpful, also highlights the challenge. Digitalisation does not specify what type of goals it is ultimately following—aside from the "adoption" of technologies. It does not answer the 'why' question. Furthermore, it also doesn't answer the 'how' question—i.e. how this "transformation" will happen. This insight uncovers a first set of key factors to consider in the context of digitalisation in higher education.

It might be said that on a theoretical and strategic level, the term 'digitalisation' is conceptually empty—well nearly. In his recent book on digitalisation in society, the sociologist Armin Nassehi charts 'digitalisation' as a social process which began with modern society's wish to create sociological types through quantitatively classifying information—in order to build the societal institutions and practices which make up our daily lives: e.g. to build tax systems, health systems, legal systems and the education system (Nassehi 2019). With the increasing amount of information, even more categories can be constructed, and societal institutions further differenti-

D. Orr (✉)
Kiron Open Higher Education, Berlin, Germany
e-mail: dominicjorr@gmail.com

F. Rampelt
Stifterverband/Hochschulforum Digitalisierung, Berlin, Germany
e-mail: florian.rampelt@stifterverband.de

A. Knoth
German Academic Exchange Service/DAAD, Berlin, Germany
e-mail: knoth@daad.de

A. Curaj et al. (eds.), *European Higher Education Area: Challenges for a New Decade*,
https://doi.org/10.1007/978-3-030-56316-5_36

ated. This uncovers opportunities for creating new user groups, for developing new practices and can lead to social and economic change.

However, digitalisation is usually seen in connection with technical innovations—as best shown with the term "blockchain", which could currently be characterised as an innovation trying to find a problem to solve (YouTube could be viewed as an early example of this, too). Many of these types of innovation have been documented for higher education annually in the Horizon Trends reports (cf. Adams Becker et al. 2017). This has been typical for the innovation debate in most societal fields. In his analysis entitled "The innovations of society", Walter Rammert criticises this narrow view of innovation (Rammert 2010). He shows that no technical innovation would have had an effect without accompanying changes in societal processes and vice versa. So what this means is that reports such as the Horizon Trends Report and similar may increase the awareness of the potential for innovation, but they do not link current practice to these technologies. This would be a key precondition for ensuring that digitalisation can really unfold the types of potential expected of it. A shorthand way of saying this is that digitalisation should be seen as a social innovation.

There is a second set of key factors which are important to consider in the context of digitalisation. These refer to the type of organisational structures common in a higher education system. A central tenet of governance concepts for higher education that were developed in the European Higher Education Area (EHEA) in the early 1990s was the objective to ensure that HEIs could be autonomous institutions, steered, but not directly governed by the state. They should also diversify their funding streams and develop sharper institutional profiles along the lines of being entrepreneurial universities. However, the university is a special organizational form with several organisational tiers that are only loosely linked, and this makes a coherent strategy difficult (Jongbloed 2015; Stensaker & Benner 2013). This situation is no different for digitalisation, which indeed presents new opportunities for further profile building—but does not solve this inherent challenge of the organisational form 'university' (Orr et al. 2019b; Schmid & Baeßler 2016).

This fact may explain a central finding from a German study on digitalisation in the university. According to a study by Gilch et al., although 44% rate the significance of digitalisation for their institution as 'high', only a fifth of the universities in Germany rate the overall level of digitalisation as 'quite high' (Gilch et al. 2019)—see Fig. 1. This problem leads to the current development in the field of digitalisation of universities: most universities are increasingly incorporating digital technology into existing processes (Orr et al. 2019b). In organizational theory, this is called an 'operational approach' (Evans & Wurster 1997). But technology also enables completely new models in higher education, which represent a transformation of higher education—a 'strategic approach' (ibid.). These strategic approaches are currently largely developing outside or on the edge of the university system (Orr et al. 2019a).

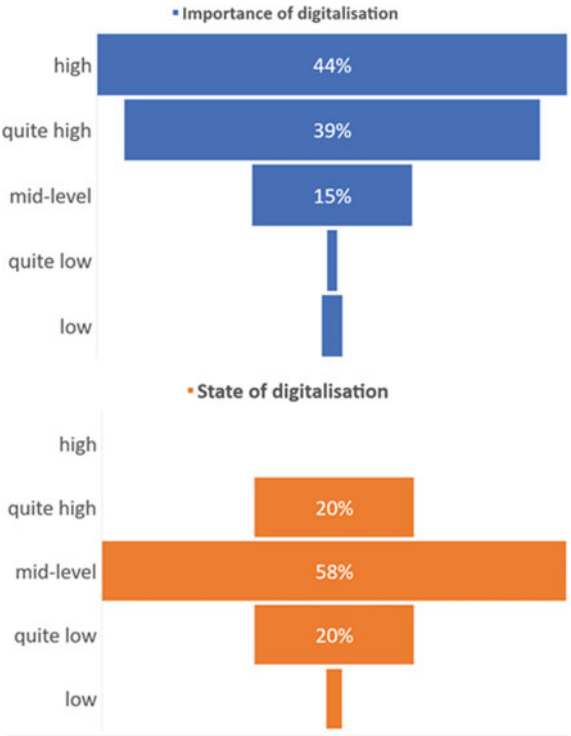

Fig. 1 A comparison between the status of digitalisation and the state of digitalisation in German universities, 2019 *Source* Gilch et al. (2019)

2 How Directed Policy and Strategy Might Help

Within the context of the Bologna Process, the potential of digitalisation for improving learning has been recognised. Indeed, the Yerevan Communiqué of 2015 stated: "We will encourage and support HEIs 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)

However, as argued in the previous section, this can only happen if the 'why' and 'how' questions are more clearly defined. This paper describes the initiative entitled 'Bologna Digital', which was launched in 2017 by the authors and some of their colleagues, with the goal of further specifying this potential.

'Bologna Digital' was a process initiated by a small group of authors,[1] who were active in the area of higher education research, policy and practice and unilaterally felt that the topic of digitalisation in higher education was not being given enough attention in the European Higher Education Area. The initiators were concerned that this

[1] These people were, in alphabetical order: Alexander Knoth (University of Potsdam, then DAAD), Dominic Orr (FiBS Research, then Kiron), Florian Rampelt (Kiron, then Hochschulforum Digitalisierung), Ronny Röwert (Kiron), Renata Suter (Kiron) and Peter van der Hijden (external consultant).

important topic was being neglected in the agenda-setting parts of the Bologna Process (in the Bologna Follow-up Group and the thematic working groups),[2] although digitalisation had a lot to offer for fulfilling the main objectives of the Bologna Process. Moreover, the group had noticed a development whereby technologies were being applied within HEIs but not in a systematic way, which meant that digitalisation would not be able to fulfil its potential for improving teaching and learning for students in Europe. For this reason, the authors chose to launch a White Paper in 2019 as an agenda framing instrument, in the hope that this might lead to digitalisation entering the European higher education discussions in a more systematic and strategic way. With this, the authors followed a common route encouraged by the mantra of evidence-based policy, but with few certain rules for securing success (Oliver & Cairney 2019).

The White Paper entitled "Bologna Digital 2020" (Rampelt et al. 2019) was drafted by the authors of this article after two international expert workshops in 2018 and 2019 and published in May 2019. It goes back to a first iteration of a paper from early 2018.

Right from its first iteration, the drafting process of the paper followed the rules of agenda-setting laid down by John Kingdon is his classic theory of 'policy windows' (Kingdon 1993). Here Kingdon argues for an evolutionary approach to understanding policy implementation under the assumption that at any one time, there are competing issues, which could attain a policy focus, but only some of these actually do. His approach predicts that the success of an issue becoming a policy focus relies on the confluence of three 'streams'. They are: problem definition, policy streams and political streams.

Problem definition: According to Kingdon, under certain conditions, special configurations of social issues come to be recognised as a 'problem' by policymakers. To achieve this aim, the authors structured the White Paper around issues that had been highlighted in recent ministerial communiques as continuing challenges that needed to be solved to improve teaching and learning within the Bologna Process. An example is the goal of achieving a higher education system which reflects the diversity of national populations. Countless studies in the past had shown that this had not been achieved (Hauschildt et al. 2018; Orr & Mishra 2015) and the goal had been regularly expressed under the term "social dimension" in most of the ministerial communiques of the last 15 years (Yerevan Communiqué 2015).

Policy streams: Within a set social space, there are many problems which could be linked together in the form of a policy with a clear goal for change. Kingdon theorises that, at a certain time, some of these gain more attention than others. The authors of the White Paper were convinced that many policymakers and institutional leaders were, in fact, worried about the issue of digitalisation, but were not aware of how to utilise it in the higher education space. Perhaps they were even afflicted by the state of affairs described by technology adoption theory. It states: "The most important thing to observe [about technology adoption] is that at any point in time

[2]For a debate of the agenda-setting and soft governance approach within the Bologna Process see: (Deca & Harmsen 2019).

the choice being made is not a choice between adopting and not adopting but a choice between adopting now or deferring the decision until later."(Hall & Khan 2003) So, it was the goal of the White Paper to make a clear link between the (unfulfilled) goals of the Bologna Process and the potentials held by digitalisation in order to encourage practice.

Indeed, digitalisation is a difficult topic to formulate as a policy that can achieve sufficient support. This is partly because the last ten years have been dominated in the educational space by the argument that higher education is broken and needs to be disrupted through digitalisation in order to fix it (Barber et al. 2013). There was a dominance of what can be termed a "Silicon Valley narrative" which highlighted the potential of technology to revolutionise sectors and expected very little of current incumbent institutions (Weller 2015). For instance, Christensen took his analysis of the difficulty for established institutions to adopt new innovations and applied it to higher education. He suggested that new entrants to the market could serve learners better through less "fussiness" about formal educational prerequisites and more agility (Christensen 1997; Christensen & Eyring 2011). It goes without saying that in most countries the 'policy window' for such a radical programme will be tightly shut.

The Bologna Digital initiative was, however, able to link to an emerging change in the general perspective on digitalisation. This change is perhaps best exemplified by the most recent Horizon Report from 2019. While this report has for nearly two decades been singularly focused on the new technologies expected to be adopted in the near future (see above), this year's edition places an emphasis on "rethinking how institutions work" (Alexander et al. 2019) and recognises that there is likely to be a slow evolution of organisational and procedural change in higher education not a radical disruption. Within the European space, the Trends Report from 2018 published by the European University Association showed a growing interest in the application of digitalisation to teaching and learning by the membership universities, who now "tend to see digitally-enhanced learning as a strategic element in developing and innovating learning and teaching" (Gaebel & Zhang 2018).

Political stream: The Bologna Process has been typified as a 'policy forum'. It sets out an agreed programme of action at the ministerial meetings every three years, and this plan is used to structure the work of working groups in the following three years. However, there are no sanctions foreseen within the process for countries that do not follow this programme. That is to say that it can only implement 'soft governance' (Deca & Harmsen 2019). That means that actual policy change will only happen at national level in the 48 member states, so the Bologna Digital initiative and White Paper too would not be able to directly affect policy but could only hope to shape it on national and institutional level. For this reason, the initiators aimed to involve national networks in the dissemination of their ideas and used national examples in the White Paper.

The next sections will lay out the main components of the Bologna Digital initiative. In Sect. 2, the authors present one of the six focal areas of the White Paper to show how Bologna goals were linked to the potential of digitalisation.

With this approach, the authors recognised two aspects about the discourse on digitalisation in higher education, which can be aligned to the policy space described by Matland. His model combines the dimensions of policy goal conflict and ambiguity of practice (Matland 1995). Firstly, regarding goal conflict, this tends to be high in the case of digitalisation as it is not yet agreed what central objectives should be pursued through digitally enhanced higher education. To this aim, the White Paper aimed to reduce the level of goal conflict by aligning its objectives to the central Bologna objectives. Secondly, regarding ambiguity on where and how to use digitalisation, it is also high, and this has led to many individual experiments, projects and small-scale initiatives. However, for a policy to be formalised and become more impactful, it should reduce the level of practice ambiguity. This can be achieved by highlighting examples of practice and encouraging peer learning. Section 3 describes approaches to peer learning by key stakeholders, which the initiators of Bologna Digital are linking to in order to shape a clear and less ambiguous policy and practice space for digitalisation within the EHEA. The final section presents some of the first outcomes and next steps connected with the Bologna Digital initiative.

3 Bologna Digital: Linking Bologna Goals to the Potential of Digitalisation

Using the framework described above, the Bologna Process initiators focused on the following key question for agenda-setting: *What are the needs and priorities of different stakeholders in the discourse on digitalisation in European higher education and how can they be linked to create a policy inertia, which leads to better integration of digitalisation in European higher education?*

Based on the streamlining of key processes in higher education and substantial feedback from different stakeholders during two workshops and an online consultation phase, six focus topics were identified and discussed as first priorities for the Bologna Digital discourse:

1. More Proactive Preparation, Admission and Transition
2. Skills for the Digital Age
3. New Mobility Patterns: Virtual Exchange and Blended Mobility
4. Recognition of (Prior) Learning
5. Quality Assurance
6. Strategies for teaching and learning

These were chosen as a focus for the White Paper to serve the purpose of consolidating support. To provide an insight into the White Paper discussion and the findings that have followed, one of these six focus areas is briefly presented in the following subsection.

3.1 Quality Assurance in the Context of New Providers and New Credentials

The establishment of quality assurance as a key element to higher education provision has been one of the success stories of the Bologna Process. It is also one of the key areas, which is being challenged by the digitalisation of learning provision.

In fact, 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 twenty-two countries have established external quality assurance agencies since the Bologna Process was launched (European Commission 2018). The agencies have the remit to assure the transparency of provision and to set threshold norms that 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).

But digital approaches to learning provision remain subject to uncertainty—and this is why the authors chose it as a key issue for the White Paper. On the one hand, new forms of learning provision enable more flexible and more personal learning support. On the other hand, there are concerns about degree mills (i.e. providers with low-quality learning provision and assessment), fraud (i.e. the verification that a person really did complete a course or programme) and indeed lack of control and oversight in the formal education system. The White Paper argues that within the framework of the Bologna Process, clear standards and guidelines (cf. European Standards and Guidelines) have been established and these can be applied to digital learning in principle. But also that quality assurance systems will need to be adapted (cf. Huertas et al. 2018).

Existing criteria and measures for quality assurance must be renewed and supplemented to take appropriate account of digitalisation in teaching and learning and to ensure security and transparency for all student groups. If digital learning leads to students acquiring learning in many different settings, this less institution-focussed provision means that quality assurance must also be less institution-focussed and more learner-centric. Additionally, quality standards for digital technologies (and data) used in HEIs need to be discussed, as they contribute to the real *de facto* learning environment of the learner.

The White Paper also makes a link between quality assurance and recognition of learning, which have traditionally been seen within the Bologna Process as two separate (but linked) topic areas but which merge more strongly under the learner-centric perspective. In this context, stakeholders have discussed new methods and quality standards for qualification, certification and credentialing in recent years (Camilleri and Rampelt 2018).

A particularly interesting topic is the various concepts for so-called 'microcredentials'—i.e. small chunks of learning for which learners can obtain recognisable credentials. The European MOOC Consortium led by major MOOC platforms in Europe[3] had already suggested a 'Common Microcredential Framework (CMF)'. The White Paper adopted this concept but aimed to make it fit better into the existing Bologna study structures by proposing it as a new 'Fifth Cycle', to complement the existing short cycle, bachelor, master and doctorate cycles (first, second, third and fourth cycles, respectively).

So, the aim was to make a clear link between the challenges posed by digital learning and the capabilities and limitations of current quality assurance and recognition practices. In this way, the authors hoped to 'soften' the challenge of digitalisation and encourage work which would lead to trust-systems that could also be applied to digital learning.

4 Encouraging Peer Learning and Exchange to Shape Policy and Practice

There are two things we know about the topic of higher education and digitalisation: (1) higher education is multi-layer with a large amount of responsibility for activity at a low hierarchical level within universities and colleges, i.e. at faculty, school and individual level (Chou et al. 2017; Jongbloed 2015; Kogan & Becher 1980) and (2) innovation and digital transformation in teaching and learning is occurring at present, but it is just seldom reaching a widespread and organisational or strategic levels, e.g. it is more likely to remain the domain of projects (Orr et al. 2019b).

It is for this reason that an initiative hoping to change the mainstream higher education sector through new digitally enhanced policies and practices should try to link to these initiatives and 'pull them in' to the debates on strategic change on institutional and system level in the formal sector. This requires a so-called 'bottom-up' approach. The starting point of this approach is to support practitioners in the field, and its clear advantage is that it can benefit from the self-directed motivation of the initiators and their networks and is very focused on specific contexts in the field. This approach must then adopt activities to spread practices from a small group of active enthusiasts to the mainstream.

Bottom-up and 'grassroots' initiatives, being focused on their own context of practical implementation in the field, tend to have the disadvantage that they lack a realistic view of the whole system, and this might inhibit an adoption of their practices at scale (Punie et al. 2013). Furthermore, specific administrative or regulatory procedures might further restriction such adoption.

So, the Bologna Digital initiative focussed on the question: *Which approaches have proven to be particularly effective and transferable so far?* To this aim, the initiative used the White Paper to disseminate information about good practices in the

[3] See: https://emc.eadtu.eu/partners.

field, while sketching key elements of the whole education system, including quality assurance and strategy building, to increase awareness of potentials, possible limitations and key success factors. Moreover, the initiative has additionally worked to foster network structures which encourage peer-learning and peer-exchange, e.g. in the hope spreading knowledge on how regulative and administrative issues that tend to clash with new digital initiatives can be overcome. The initiative consequently functions as a 'Living Lab', bringing together different stakeholders, gathering insights and examples and developing concrete outcomes for the future of European higher education. The initiators of Bologna Digital are actively involved in the following two peer learning approaches with the aim of achieving a cross-over from bottom-up practice to top-down strategy and policy.

4.1 HFD—Enabling Peer-to-Peer-Learning and Strategic Cooperation in Germany

Since its inception, the Bologna process has supported a kind of "educational cooperation" (Bologna Declaration 1999) that focuses on working together on strategic issues and learning from each other. This applies not only to the need for interinstitutional and intergovernmental cooperation but in particular to the need to work together on an individual level among key stakeholders.

In Germany, the Hochschulforum Digitalisierung (HFD) provides such networks for collaboration to different higher education stakeholders from students to teachers to HEI leadership (Hochschulforum Digitalisierung 2017). Among other activities, it has developed a unique peer-to-peer strategy approach for German HEIs. This peer-to-peer strategy consultation service is a developmental tool geared to HEIs that want to actively shape the digital transformation in higher education and strategically reinforce the digitalisation of teaching and learning. Accordingly, it is addressed in a targeted manner to HEI leadership and each HEI's individual profile and goals. Central to this free-of-charge programme are so-called peer experts, who accompany the HEI by contributing their own practical experience in the strategy process. From 2017 to 2019, more than one hundred different HEIs from Germany applied for the opportunity. A regular series of conferences allow for an even broader dissemination of the peer-to-peer-approach (Hochschulforum Digitalisierung)

The HFD work has become closely aligned to similar activities in the Netherlands by SURF. SURF is the collaborative organisation for IT in education and research and in 2017, SURF, the Association of Universities in the Netherlands (VSNU) and the Netherlands Association of Universities of Applied Sciences (Vereniging Hogescholen, VH) presented the 'Acceleration Agenda for Innovation in Education'. This agenda intends to promote digital change in Dutch higher education and is, therefore, a perfect partner to HFD for enabling cross-country peer learning in this field.

4.2 DAAD—Enabling Peer Learning Within International Networks

The German Academic Exchange Service (DAAD), supported by the Federal Ministry of Education and Research (BMBF) has recently developed a new funding instrument for HEIs and their international networks to foster collaboration through digitalisation. Digitalisation allows better networking and connectivity, but even with unconstrained information and data flows, the local conditions for access to higher education and open learning opportunities are usually limited to single institutions. Therefore, the programme "International mobility and cooperation through digitalisation" aims to strengthen cross-campus cooperation in Europe and beyond. Core to the programme is the removal of organizational obstacles, development of common standards and the implementation of interoperability of IT infrastructures. This initiative too includes a peer-to-peer learning approach within supported HEI networks to facilitate methodological skills development for faculty, lecturers and staff in order to develop shared and networked curricula. These objectives mirror and build on the Bologna Digital discourse.

Beyond these close links, Bologna Digital is becoming a reference point for the work of other organisations. For instance, the European Association of Institutions in Higher Education (EURASHE) is among several stakeholders who support peer learning across national and institutional borders. During in peer-to-peer activity in Warsaw (March 2019), they made explicit reference to Bologna Digital.[4]

5 Conclusion: The Topic of Digitalisation as an Enrichment for the Bologna Process and Its Future Relevance

All current theories on policy development concur that policymaking is not a linear process and policies and agendas will always be weighed up against each other. For this reason, it is also difficult to fully evaluate whether a specific initiative like Bologna Digital can really influence the policy building process and practice in higher education.

However, there are signs that this initiative has made it easier for policy and practice to work on the topic and, in this way, has contributed to minimising policy goal conflict and ambiguity of practice by making direct links to common themes from within the Bologna Process and providing realised examples of practice.

The current White Paper is partially based on a Position Paper that stimulated the discourse on digitisation in the European Higher Education Area as early as 2017. This first paper was shorter than the current White Paper and aimed explicitly at influencing the discussions leading up to the Ministerial Communiqué within

[4]More information here: https://www.eurashe.eu/calendar/reversed-peer-learning-activity-learning-teaching-in-professional-higher-education-phe/.

the Bologna Process, which was released in May 2018. This version was able to obtain endorsements from the European Association of Distance Teaching Universities (EADTU), the Groningen Declaration Network (GDN) and the International Council for Open and Distance Education (ICDE), and it was being discussed within Bologna circles in the lead up to the ministerial conference. It appears that the work of the Bologna Digital initiative helped enrich and broaden the scope of discussion on teaching and learning and the Bologna goals in general as well as digitalisation in particular. Certainly, the draft communiqué from December 2017 had much less to say about digitalisation than the final communiqué from May 2018 (as evidenced by internal documents). The latter presented in more detail the opportunities digitalisation presents for teaching and learning and the need to adjust some of the regulations to facilitate the benefits. This may be the most that can be achieved within the complex negotiations for a ministerial communiqué agreed by 48 ministers responsible for higher education.

Also, in preparation for the work programme of the Bologna Follow-Up Group 2018–2020, there were discussions on how digitalisation could be taken forward in the next working period. It was decided that it should be a transversal topic for all work. This agreed with the principle of 'digital second' in the work of the Bologna Digital initiative, i.e. focussing on the social innovation regarding teaching and learning first, then thinking of how digitalisation can contribute to solving it (Rampelt et al. 2018).

Even with an interim assessment of the Bologna Digital initiative, there may be first lessons that can be learnt for other similar initiatives.

A heavy top-down approach to agenda-setting contains the risk that neither policymakers nor HEIs will explicitly take up the challenge of an integrative approach to digitalisation. That is why the Bologna Digital initiative and the White Paper specifically focus on encouraging activities in practice, to build a ground-swell of engagement and a wide exchange of successful practices.

Bologna Digital can be seen as an initiative which aims to combine discussions on top-down policy design and strategy development with bottom-up goal-setting and practice learning. With this combined approach, the initiative aims to create a stable policy framework and to recognise the practice space for implementing digitally enhanced higher education provision. Moreover, it wants to be an initiative supported and co-initiated by various strong actors in their respective national contexts. The informal character of the Bologna Digital initiative has increased the flexibility through which it can align with and encourages activities. However, it is of particular relevance that the results of such informal processes are transferred into the formal framework and the bodies of the Bologna Process. This is achieved, for example, through concrete impulses for the relevant working groups, in this case, especially the Advisory Group on Teaching and Learning, among others.[5]

On reflection, it is clear that the timing of the initiative (an important factor in the Kingdon model) was particularly opportune to achieving (at least in part) the

[5]More information here: http://www.ehea.info/Upload/AG2_Learning_Teaching_2_Hearing_2.pdf.

Bologna Digital goals. The intention is that the link between Bologna goals and the potential of digitalisation will be even more visible in the communiques to come. But, the real impact of the initiative can only be assessed in the future. Certainly, on an informal level, it is noticeable that the topics and recommendations are already being broadly discussed. The initiators hope this also contributes directly to strengthening the future of the Bologna Process, as cooperation and collaboration will become even more central to higher education in the coming decade.

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/ISBN978-0-9977215-7-7

Alexander, B., Ashford-Rowe, K., Barajas-Murphy, N., Dobbin, G., Knott, J., McCormack, M., Pomerantz, J., Seilhamer, R., & Weber, N. (2019). EDUCAUSE Horizon Report: 2019 Higher Education Edition. Educause. https://library.educause.edu/-/media/files/library/2019/4/2019horizonreport.pdf?la=en&hash=C8E8D444AF372E705FA1BF9D4FF0DD4CC6F0FDD1

Barber, M., Donnelly, K., Rizvi, S., & Summers, L. (2013). An avalanche is coming. *Higher Education and the revolution ahead*, *73*.

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:assuringthe-quality-of-credentials-to-support-learning-innovation.html

Chou, M.-H., Jungblut, J., Ravinet, P., & Vukasovic, M. (2017). Higher education governance and policy: an introduction to multi-issue, multi-level and multi- actor dynamics. Policy and Society, 4035(March), 1–15. https://doi.org/10.1080/14494035.201.1287999

Christensen, C. M. (1997). The innovator's dilemma: when new technologies cause great firms to fail. Harvard Business School Press.

Christensen, C. M., & Eyring, H. J. (2011). The Innovative University: Changing the DNA of Higher Education from the Inside Out. Jossey-Bass Inc.

Deca, L., & Harmsen, R. (2019). Taking Stock of the Bologna Process at 20: The Possibilities and Limits of Soft Law Governance. Annual Conference of the Canadian Political Science Association. https://orbilu.uni.lu/bitstream/10993/39753/1/Deca%20and%20Harmsen%20-%20Bologna%20Stocktaking%20-%20final.pdf

European Commission/EACEA/Eurydice. (2018). The European higher education area in 2018: Bologna Process implementation report. Publications Office of the European Union. https://doi.org/10.2797/63509

Evans, P., & Wurster, T. S. (1997). Strategy and the New Economics of Information. Harvard Business Review. https://hbr.org/1997/09/strategy-and-the-new-economics-of-information

Gaebel, M., & Zhang, T. (2018). Trends 2018 - Learning and teaching in the European Higher Education Area. European University Association.

Gilch, H., Beise, A. S., Krempkow, R., Müller, M., Stratmann, F., & Wannemacher, K. (2019). Digitalisierung der Hochschulen - Ergebnisse einer Schwerpunktstudie für die Expertenkommission Forschung und Innovation (No. 12). Expertenkommission Forschung und Innovation. https://www.e-fi.de/fileadmin/Innovationsstudien_2019/StuDIS_14_2019.pdf

Hall, B. H., & Khan, B. (2003). *Adoption of New Technology*. In New Economy Handbook (pp. 1–19).

Hauschildt, K., Vögtle, E. M., & Gwosć, C. (2018). Social and Economic Conditions of Student Life in Europe. W. Bertelsmann. https://doi.org/10.3278/6001920cw

Hochschulforum Digitalisierung (2017). The Digital Turn – Pathways for Higher Education in the Digital Age. Arbeitspapier Nr. 30. Berlin: Hochschulforum Digitalisierung. Retrieved from https://hochschulforumdigitalisierung.de/sites/default/files/dateien/HFD_Final_Report_english.pdf

Huertas, E., Biscan, I., Ejsing, C., Kerber, L., Kozlowska, L., Marcos Ortega, S., ... & Seppmann, G. (2018). Considerations for Quality Assurance of E-learning Provision (Report from the ENQA Working Group VIII on Quality Assurance and E-learning). Retrieved from https://enqa.eu/indirme/ConsiderationsforQAof-learningprovision.pdf

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

Kingdon, J. (1993). How do issues get on public policy agendas? In W. J. Wilson (Ed.), *Sociology and the Public Agenda* (pp. 40–50). SAGE Publications, Inc. https://doi.org/10.4135/9781483325484

Kogan, M., & Becher, T. (1980). Process and structure in higher education. Ashgate Publishing.

Matland, R. E. (1995). Synthesizing the Implementation Literature: The Ambiguity-Conflict Model of Policy Implementation. *Journal of Public Administration Research and Theory*, *5*(2), 145–174. https://doi.org/10.1093/oxfordjournals.jpart.a037242

Nassehi, A. (2019). Muster: Theorie der digitalen Gesellschaft. Beck C. H.

Oliver, K., & Cairney, P. (2019). The dos and don'ts of influencing policy: a systematic review of advice to academics. *Palgrave Communications*, *5*(1), 1-11. https://doi.org/10.1057/s41599-019-0232-y

Orr, D., & Mishra, S. (2015). A Comprehensive Approach to Investigating the Social Dimension in European Higher Education Systems — EUROSTUDENT and the PL4SD Country Reviews. The European Higher Education Area: Between Critical Reflections and Future Policies, 467–478. https://doi.org/10.1007/978-3-319-20877-0

Orr, D., Lübcke, M., Schmidt, P., Ebner, M., Wannemacher, K., Ebner, M., & Dohmen, D. (2019a). AHEAD Internationales Horizon-Scanning: Trendanalyse zu einer Hochschullandschaft in 2030. Hochschulforum Digitalisierung. https://hochschulforumdigitalisierung.de/sites/default/files/dateien/HFD_AP_Nr_42_AHEAD_WEB.pdf

Orr, D., Weller, M., & Farrow, R. (2019b). How is Digitalisation Affecting the Flexibility and Openness of Higher Education Provision? Results of a Global Survey Using a New Conceptual Model. *Journal of Interactive Media in Education*, *2019*(1), 3. https://doi.org/10.5334/jime.523

Punie, Y., Kampylis, P., & Vuorikari, R. (2013). Mainstreaming ICT-enabled innovations in Education and Training: Are CSCL and Learning Sciences Research Relevant to Large-Scale Educational Reform? A Symposium at CSCL 2013, Madison, Wisconsin. http://is.jrc.ec.europa.eu/pages/EAP/documents/130617CSCLY.Punie_full.pdf

Rammert, W. (2010). Die Innovationen der Gesellschaft. In J. Howaldt & H. Jacobsen (Eds.), Soziale Innovation: Auf dem Weg zu einem postindustriellen Innovationsparadigma (pp. 21–51). VS Verlag für Sozialwissenschaften. https://doi.org/10.1007/978-3-531-92469-4_2

Rampelt, F., Birnkammerer, H., Röwert, R., Suter, R. (2018). 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. https://www.researchgate.net/publication/327932362_Opening_up_higher_education_in_the_digital_age_On_the_potential_to_unite_the_social_dimension_and_the_digitalisation_of_higher_education_in_Europe

Rampelt, F., Orr, D., & Knoth, A. (2019). Bologna Digital 2020 - White Paper on Digitalisation in the European Higher Education Area. Hochschulforum Digitalisierung. https://hochschulforumdigitalisierung.de/de/news/white-paper-bologna-digital-2020

Randall, L., Berlina, A., Teräs, J., & Rinne, T. (2018). Digitalisation as a tool for sustainable Nordic regional development (Issue January). Nordregio. 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). Hochschulforum Digitalisierung. https://hochschulforumdigitalisierung.de/sites/default/files/dateien/HFD_AP_Nr29_Strategieoptionen_fuer_Hochschulen_im_digitalen_Zeitalter.pdf

Stensaker, B., & Benner, M. (2013). Doomed to be Entrepreneurial: Institutional Transformation or Institutional Lock-Ins of 'New' Universities? *Minerva*, *51*(4), 399–416. https://doi.org/10.1007/s11024-013-9238-6

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). https://doi.org/10.1007/978-3-319-77407-7

Weller, M. (2015). MOOCs and The Silicon Valley Narrative. *Journal of Interactive Media in Education*, *1*(5), 1–7. https://doi.org/10.5334/jime.am

Yerevan Communiqué. (2015). http://www.ehea.info/media.ehea.info/file/2015_Yerevan/70/7/YerevanCommuniqueFinal_613707.pdf