Digitalisation v. the Values of Higher Education: Opportunities, Threats, Recommendations for the EHEA

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Abstract

Whether the deployment of digital technologies in higher education can be regarded as an opportunity or a risk is a question of values. The relevant values can range from traditional academic values and the fundamental values of higher education in the EHEA to democracy and respect for human rights. Before COVID-19, it was popular to focus on potential benefits for learners. However, the earlier approach failed to pay enough attention to the wider educational and societal impacts of the digital transformation. This changed during the COVID-19 pandemic. Recent studies have discussed the impact of the digital transformation of higher education on staff, institutions, the higher education market and society as a whole. In this chapter, it is argued that the digital transformation of higher education can have an impact on academic freedom, student and staff participation in higher education governance, public responsibility for higher education, public responsibility of higher education, and democracy. The digital transformation of higher education makes it necessary to balance multiple values. Higher education policy in the EHEA should take into account both opportunities and risks.

1 Introduction

1.1 General Remarks on the Digital Transformation of Society

According to Kranzberg's first law of technology, "technology is neither good nor bad; nor is it neutral" (Kranzberg 1986). The digital transformation of society presents both opportunities and risks and is values-based.

Digital transformation is driven by opportunities. In the 1990s, digital technologies were still regarded as an uncomplicated improvement in the lives of their users (Fukuyama 1992). There was "great optimism that it would constitute a 'liberation technology' that would empower ordinary people to inform themselves, mobilize, and ultimately become participating agents in a democratic process" (Fukuyama 2023: 3). However, there have been fears that "some people, even a majority of them, can be made worse off by advances in technology" (Brynjolfsson and McAfee 2014: 173). It has turned out that digital transformation also has a dark side with detrimental consequences (Wheaton and Kreps 2023).

There are opportunities and risks for individuals and, at the level of the artificial goal-directed systems of human society (Simon 1996: xi), for organisations, sectors of society and society in general. While opportunities and risks identified at the individual level can apply at a higher system level, methodological individualism may miss some systemic phenomena (*ibid*.: 40—41).

According to an OECD study, key opportunities and risks for individuals "are still debated by researchers and analysts" (OECD 2019a: 12). What is known is that "safe digital technologies improve the life of those who have the skills to use them" (*ibid.*: 11). On the one hand, individuals can benefit from digital opportunities if they possess skills labelled as "digital literacy" (*ibid.*: 12). On the other hand, "digital technologies entail a major inequality risk for society, as they introduce a digital divide between those who have the skills to use them and those who do not" (*ibid.*: 12). The study shared a key message: "In a nutshell, making the digitalisation work for people's well-being would require building equal digital opportunities, widespread digital literacy and strong digital security." (*ibid*.: 12).

At the system levels of the economy and society, the divide takes the form of economic and societal polarisation in four ways. First, there is economic concentration (Brynjolfsson and McAfee 2014; Andrews, Criscuolo and Gal 2015; Anderton, Botelho and Reimers 2023). Not only is the digital economy largely dominated by platforms that rely on network effects (Parker, Van Alstyne and Choudary 2016), but economy and wealth are generally becoming more concentrated (Mäntysaari 2022: 11—15). Second, there is a societal trend of rising earnings inequality in OECD countries (OECD 2019b: 16—17) that means a declining share of people in middle-income households (*ibid.*: 46—49) and the simultaneous growth of the share of employment in high skill, high wage occupations and low skill, low wage occupations (Acemoglu and Autor 2011: 1070). The winners include top managers, high-income households and high-skill employees (Song *et al*. 2019). According to an analysis by the International Monetary Fund, the adoption of AI will benefit higher-income workers and younger college-educated workers more (Cazzaniga *et al*. 2024: 14—15). Third, non-standard work has become more common (Fritz and Tomaschek 2019; Pew Research Center 2021; Aleksynska 2021; De Stefano *et al*. 2021; O'Higgins and Caro 2022; Ilsøe and Larsen 2021; Ilsøe and Larsen 2023). Non-standard work can be defined as employment other than the standard full-time open-ended contract. Non-standard work ranges from part-time employment, fixed-term contracts and zero-hour contracts to temporary agency work, solo self-employment and digital platform work (Ilsøe and Larsen 2021: 18; Rasmussen *et al*. 2019: 9). Non-standard work is generally associated with less comprehensive forms of social protection and is deemed to require legislative action to cure the problem (European

Commission 2021; U.S. Department of Labor 2024; Countouris and De Stefano 2023). Fourth, there is a trend of political polarisation. It is fuelled by economic polarisation and the digitalisation of the media (Pew Research Center 2014; Pew Research Center 2020). Digital technologies "have proven to have the potential risk of helping polarisation, misinformation and mistrust" (Errandonea 2023).

Shortly put, the fact that the benefits and risks of digital transformation are not evenly shared has serious societal consequences. For example, the Policy Brief of the Stigler Committee on Digital Platforms stated that the "concentration of economic, media, data, and political power is potentially dangerous for our democracies" (Zingales and Lancieri 2019: 11). Moreover, it has become increasingly challenging to defend the resiliency of democratic processes and the truth. Democratic processes and public authorities are targeted by disinformation (Turčilo and Obrenović 2020; Koistinen *et al*. 2022; Alaraatikka *et al*. 2022). At the same time, attention-grabbing false information is easier to produce and spreads much faster than serious information intended to correct it (Vosoughi *et al*. 2018; Ireton and Posetti 2018).

1.2 General Remarks on the Values of Higher Education

Higher education is influenced by the general societal trends connected to the digitalisation of society. Higher education is generally influenced by its outer environment (Simon 1996: 7—8). One may ask to what extent the opportunities and risks that are characteristic of digital transformation in general have been recognised in the particular discourse relating to the values of higher education in the EHEA.

Fundamentally, whether something can be regarded as an opportunity or a risk - or good or bad - is a question of values. There is no way to use the *potential* of technological advancement for *good* and make its *benefits* accessible to all in higher education (Jensen 2019) without sufficient information about societal mechanisms and value-based choices of desirable goals.

For the purposes of the EHEA, the values of higher education include academic values and the fundamental values of higher education in the EHEA.

The fundamental values of higher education in the EHEA are relatively recent. They were specified in the Paris Communiqué (Bologna Process 2018) and reconfirmed in the Rome Communiqué (Bologna Process 2020). The fundamental values of higher education in the EHEA are defined as academic freedom, academic integrity, institutional autonomy, student and staff participation in higher education governance, public responsibility *for* higher education and public responsibility *of* higher education.

In contrast, the long-term values of higher education predate the digital transformation of society and are relatively stable. Higher education and the EHEA are embedded in academic values (Bologna Process 2003; Bologna Process 2005). For example, academic values include the scientific worldview (Wittgenstein 1922: 2.233; Bologna Process 1998; UNESCO 2017, paragraph 14), academic freedom (AAUP 2015: 13—14; Commager 1963; Gerber 2014: 29—31; Bologna Process 2007; Bologna Process 2018; Bologna Process 2020a; Bologna Process 2020b) and respect for a package of human rights protected under international law (UNESCO 1997, Preamble; United Nations 2020, paragraph 5; Beiter *et al*. 2016; Beiter 2019).

While the Paris Communiqué (Bologna Process 2018) first spelled out the fundamental values of the EHEA as they are understood today, the foundations of the EHEA's framework can be found in the rules-based system of the 1948 Universal Declaration of Human Rights, the 1966 International Covenant on Civil and Political Rights, the 1966 International Covenant on Economic, Social and

Cultural Rights and the 1997 UNESCO Recommendation concerning the Status of Higher-Education Teaching Personnel. Such a universal system is complemented by European treaties. The 1950 European Convention on Human Rights and Fundamental Freedoms (ECHR) reflects the Council of Europe's core values that include respect for human rights, democracy and the rule of law (*e.g.*, (Leslie *et al*. 2021; Holmes *et al*. 2022; Holmes 2023). The ECHR protects the right to education and academic freedom (Council of Europe 2009, paragraphs 2 and 4). The 2012 Charter of Fundamental Rights of the European Union reflects the same core values and is more detailed.

The international rules-based system both influences the contents of the EHEA's ministerial communiqués and makes them meaningful. By definition, international law is recognised by states as binding upon their mutual relations. The countries that belong to the EHEA must comply with their international legal obligations in good faith, as stipulated by Article 26 of the Vienna Convention on the Law of Treaties (United Nations 1969). For example, this includes compliance with obligations relating to academic freedom under Article 10 of the ECHR. The ECHR established the European Court of Human Rights that now has a large body of case law relating to academic freedom (United Nations 2020, paragraphs 21 and 23). EU countries must also comply with EU law such as Article 13 of the EU Charter of Fundamental Rights guaranteeing the freedom of the arts and sciences and Article 14 guaranteeing the right to education. The EU member states' common obligations under international law must be taken into account when interpreting EU law. This can be illustrated by the 1997 UNESCO Recommendation that has been the "only international legal document laying down standards with regard to academic freedom and institutional autonomy in a more structured and detailed manner" (Beiter *et al*. 2016: 120—121), lists measures that according to the terminology of the EHEA belong to public responsibility for higher education (UNESCO 1997, paragraphs 10, 57—64) or public responsibility of higher education (*ibid*.: paragraphs 6, 17, 22—24, 33—34, 36) and mentions academic integrity (*ibid*.: paragraph 22(b)). While the UNESCO Recommendation constitutes soft law that is not binding as such (Beiter *et al*. 2016: 121—122), the Recommendation itself is an application of binding obligations under international law (*ibid*.: 107—108 and 189; United Nations 2020, paragraph 5; UNESCO 1997, Preamble) and can be taken into account when interpreting binding obligations under EU law (CJEU, Case C-66/18, European Commission v Hungary, paragraph 227). The ministerial communiqués of the EHEA have never existed in a legal vacuum. It would not be reasonable to assume that all EHEA members have been unaware of their well-known obligations under international law (*e.g*., Karran 2007; Council of Europe 2007; Council of Europe 2009, paragraphs 2—4, 9 and 11; European Parliament 2018).

Such values are relatively stable but are constantly evolving. Due to societal change, there is a constant search for a fair balance between the fundamental rights of different parties (*e.g.*, CJEU, Case C-401/19 Poland, paragraph 99) and between the different values enshrined in those rights. One of the transformations (*e.g*., Polanyi 1944) that societies are undergoing is digital. Fundamental rights and the values of higher education must be applied, interpreted and balanced in new contexts such as the digital economy (*e.g*., UNESCO 2021a: II.8).

1.3 This Chapter

It is necessary to reassess whether the individual-level, institution-level, higher-education-system-level and wider outcomes of the deployment of digital technologies are aligned with the values of higher education and the EHEA. Important policy choices need to be made based on the reassessment. For example, higher education should defend and help develop democratic societies by mitigating

societal mechanisms that are "potentially dangerous for our democracies" (Zingales and Lancieri 2019: 11) rather than naively endorse digitalisation without reservations.

In the following, we will first study how digitalisation was perceived in the EHEA t the time of the Rome Communiqué (Bologna Process 2020a) and before. This will be followed by a brief discussion of outcomes reported in more recent studies and their connection to the values of the EHEA. We will conclude with recommendations for the EHEA. We recommend a stronger focus on the risks and the system level.

2 From the Sorbonne Declaration to the Rome Communiqué

2.1 General Remarks

The perceived impact of digitalisation is highlighted here using three kinds of proxies, namely ChatGPT 3.5, the core EHEA ministerial documents[1] and the edited book (Curaj *et al*. 2020a) from the Fourth Bologna Process Researchers' Conference that preceded the Rome ministerial meeting in 2020. The large-language-model (LLM) technology of ChatGPT 3.5 can provide initial clues as to how the deployment of digital technologies was perceived in the context of higher education up to its knowledge update in January 2022. The ministerial declarations and communiqués seem to share the technology optimism of the 1990s with the 2015 Yerevan and 2020 Rome Communiqués (Bologna Process 2015; Bologna Process 2020a) bringing digitalisation closer to the agenda of the EHEA. The chapters published in the edited book reflect what was perceived as high-quality research acceptable to editors and peers in the field. The part titled "Bologna Process in the Global Higher Education Arena. Going Digital?" in the book largely focused on opportunities for individuals and largely reflected the same bias as the answers provided by ChatGPT 3.5. Individual-level and system-level risks were not properly addressed in the past.

2.2 ChatGPT

For the purposes of this chapter, ChatGPT 3.5 was asked two questions with an assumption of causality between digitalisation and what is going on in higher education. The first question was: "How does digitalization affect the values of higher education?" The second question was: "How has digitalization affected higher education?" Based on the content of the Internet up to the LLM's latest update, the answers were programmed to simulate text written by humans. ChatGPT 3.5 combines words according to what is the likely word order found in prior texts and by creating highly structured text (Herbold *et al*. 2023). This also includes listing many sides of the argument and creating text intended to give the impression of a balanced view (Huang and Tan 2023). The answers showed digital transformation in a very positive light and revealed a bias.

The answer to the first question mentioned a "Positive Impact" at the individual level under the following headings: "Accessibility and Inclusivity"; "Flexibility and Lifelong Learning"; "Collaboration and Globalization"; "Personalization of Learning"; "Efficiency and Resource Optimization"; "Technological Literacy"; "Engagement and Active Learning"; and "Continuous Improvement and Innovation". The answer to the first question mentioned a "Mixed Impact" under the headings "Critical Thinking and Information Literacy" and "Ethical Considerations". The answer's simulated balanced view largely was positive: "While digitalization brings about numerous positive changes, it is

[1] https://www.ehea.info/page-ministerial-declarations-and-communiques, accessed March 17, 2024.

essential for higher education institutions to address challenges such as digital inequality, the digital divide, and the need for ongoing professional development for faculty to ensure that the values of higher education remain at the forefront of the digital era."

The answer to the second question revealed a similar positive bias. When asked how digitalisation has affected higher education, ChatGPT 3.5 produced various examples of "transformation" and "enhancement" but just one "challenge". "Transformation" was mentioned under the headings "Online Learning and Remote Education", "Blended Learning Models", "Collaboration and Communication", "Personalized Learning", "Assessment and Feedback", "Research and Innovation", "Globalization of Education" and "Changing Pedagogical Approaches". "Enhancement" was mentioned under the headings "Access to Resources", "Administrative Efficiency" and "Technological Literacy". The only "challenge" was described under the heading "Challenges and Inequalities": "While digitalization has brought about positive changes, it has also highlighted and exacerbated existing inequalities. The digital divide, issues of access to technology, and concerns about digital literacy need to be addressed to ensure equitable access to education."

It is not possible for any human to explain how the LLM produced its particular answers in this or any other case. The answers cannot be called findings, because the LLM is not designed to produce findings alleged to be true. What we know is that large datasets based on texts from the Internet overrepresent hegemonic viewpoints and encode biases (Bender *et al*. 2021). In this case, the hegemonic viewpoint reflects technology optimism.

2.3 Bologna Process Ministerial Documents

There is no coherent development of technology and digitalisation policy in the ministerial declarations of the Bologna Process, but the Bologna Process seems to have shared the technology optimism of the 1990s. There is a major difference between the earlier ministerial declarations and communiqués and the Yerevan, Paris and Rome Communiqués (Bologna Process 2015; Bologna Process 2018; Bologna Process 2020a).

Before the Yerevan Communiqué, digitalisation did not play a major role in the ministerial declarations and communiqués. The Sorbonne Declaration briefly mentioned "the ability to use new information technologies" as something "undergraduates should have access to" (Bologna Process 1998: 2). The Bologna Declaration focused on the integration of European countries in the area of higher education rather than on technology (Bologna Process 1999). The Prague Communiqué called for lifelong learning strategies because of technological advancement: "lifelong learning strategies are necessary to face the challenges of competitiveness and the use of new technologies and to improve social cohesion, equal opportunities and the quality of life" (Bologna Process 2001: 2). The Berlin Communiqué emphasised research more strongly. Ministers asked "Higher Education Institutions to increase the role and relevance of research to technological, social and cultural evolution and to the needs of society" (Bologna Process 2003: 7). The Communiqué of the Conference in Leuven/Louvain-la-Neuve mentioned "the major challenge and the ensuing opportunities of globalisation and accelerated technological developments with new providers, new learners and new types of learning" and proposed student-centred learning as the answer: "Student-centred learning and mobility will help students develop the competences they need in a changing labour market and will empower them to become active and responsible citizens" (Bologna Process 2009: 1, paragraph 2). In the Bucharest Communiqué, the ministers agreed to "[e]ncourage knowledge-based alliances in the EHEA, focusing on research and technology" (Bologna Process 2012: 5).

Digitalisation and technological advancement played a more central role in the Yerevan, Paris and Rome Communiqués (Bologna Process 2015; Bologna Process 2018; Bologna Process 2020a). By focusing on the opportunities of digitalisation for students, these Communiqués reflected the optimism and bias of the 1990s.

On the one hand, the Yerevan Communiqué did list major societal challenges: "Today, the EHEA faces serious challenges. It is confronted with a continuing economic and social crisis, dramatic levels of unemployment, increasing marginalization of young people, demographic changes, new migration patterns, and conflicts within and between countries, as well as extremism and radicalization." (Bologna Process 2015: 1).

On the other hand, the Yerevan Communiqué did not see digitalisation as a contributor to any societal problems. Instead, digitalisation was regarded as an opportunity: "[R]apid development of knowledge and technology, which impacts on societies and economies, plays an increasingly important role in the transformation of higher education and research. The EHEA has a key role to play in addressing these challenges and maximizing these opportunities …" (*Ibid.*: 1).

In the Yerevan Communiqué, the perceived opportunities provided by digital technologies related to student-centred learning. The ministers "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" (Bologna Process 2015: 2). A "major goal" of the EHEA was "[f]ostering the employability of graduates throughout their working lives in rapidly changing labour markets - characterized by technological developments …" (*Ibid.*: 2).

In the Paris Communiqué, the ministers called on the BFUG to "take the issue of digitalisation forward". The ministers agreed to "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" (Bologna Process 2018: 3).

The Rome Communiqué built on the themes of the Yerevan and Paris Communiqués. Like the Yerevan Communiqué, the Rome Communiqué treated digitalisation as a solution to challenges and asked for larger deployment of digital technologies. According to the Rome Communiqué, the limitations of the use of digital means must be overcome and the opportunities offered by technological development for research-based learning and teaching and lifelong learning must be expanded. The "new opportunities provided by digitalisation" should be used "fully" (Bologna Process 2020a: 5). The ministers asked the BFUG to propose "ways in which all learners can benefit from the new technologies" (*ibid*.: 5). The ministers committed to "investing in the development of digital skills and competences for all" (*ibid*.: 6). The Rome Communiqué mentioned numerous opportunities associated with the deployment of digital technologies.

The Rome Communiqué only hinted at the potential negative impacts of digital transformation in a sentence on ethics: "While our societies increasingly rely on innovative technologies, including artificial intelligence, we must ensure that these observe ethical standards and human rights and foster inclusion." (*ibid*.: 5).

2.4 The Bologna Process Researchers' Conference 2020

The sentiment of the 2015 Yerevan and 2020 Rome Communiqués seems to have been shared by EHEA researchers at the time. The fourth edition of the Bologna Process Researchers' Conference indicates how the role of digitalisation and its impacts on higher education were perceived within the EHEA's research community just before cross-border mobility was blocked by the COVID-19 crisis. The edited book (Curaj *et al*. 2020a) published after the conference reflects the state-of-the-art acceptable to editors and peers.

The introduction that sets the scene is an echo from the 1990s: "Digitalization has suddenly become the way of preserving our social contacts and thus our humanity, instead of being viewed as an obstacle to real human interaction … [D]igitalizing every academic process … is a huge opportunity for a leap forward." (Curaj *et al*. 2020b: xxxi—xxxiii).

In the part titled "Bologna Process in the Global Higher Education Arena. Going Digital?", the first and sixth chapters stand out.

The sixth chapter stands out because it promises to address fundamental questions: "Digitalisation does not specify what type of goals it is ultimately following … It does not answer the 'why' question. Furthermore, it also does not 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." (Orr, Rampelt and Knoth 2020: 583). Since digitalisation is not values-neutral (Kranzberg 1986), digital transformation is indeed a question of values ("why"), and it would be important to understand the mechanisms of digital transformation ("how") in order to understand what is going on before choosing proper action. The sixth chapter also identifies "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." (Orr, Rampelt and Knoth 2020: 584). It certainly would be important to assess the organisational and system-level mechanisms and impacts of digitalisation.

However, rather than answer the fundamental questions, the sixth chapter mainly focuses on a White Paper titled "Bologna Digital 2020" (Rampelt *et al*. 2019). The six focus areas of the White Paper are: "More Proactive Preparation, Admission and Transition"; "Skills for the Digital Age"; "New Mobility Patterns: Virtual Exchange and Blended Mobility"; "Recognition of (Prior) Learning"; "Quality Assurance"; "Strategies for Teaching and Learning in the Digital Age" (Orr, Rampelt and Knoth 2020: 588). These focus areas mainly reflect traditional learner-level questions with "Quality Assurance" potentially raising some system-level challenges.

If system-level challenges are one side of the coin, the other side is choosing to address them as the object of quality assurance. For example, the authors of the sixth chapter mention "concerns about degree mills …, fraud … and indeed lack of control and oversight in the formal education system" (*ibid*.: 589). However, the authors take a learner-centric approach: "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." (*Ibid*.: 589). The learner-centric approach may mean that the authors miss some system-level phenomena (Simon 1996). The authors do point out in another context that "bottom-up and 'grassroots' initiatives … tend to have the disadvantage that they lack a realistic view of the whole system", but the authors only recognise this as a hindrance on the path to digital transformation as "this might inhibit an adoption of … practices at scale" (Orr, Rampelt and Knoth 2020: 590; see also Kampylis *et al*. 2014).

The first chapter (Orr 2020) is mainly about opportunities and possibilities but stands out by making a connection to some values and addressing some risks. According to Orr, "a review of how higher education might benefit from the opportunities and possibilities provided by digitalisation will have to start out from a question of what the main goals for higher education should be" (*ibid*.: 503). To Orr, higher education seems to be a question of skills development and meeting the United Nations Sustainable Development Goals[2] (SDGs). Orr mentions the need for a package of skills termed "digital literacy" (*ibid.*: 506) and points out that the Paris Communiqué calls on "higher education institutions to prepare their students and support their teachers to act creatively in a digitalized environment" (Bologna Process 2018: 3; Orr 2020: 510). Moreover, Orr mentions the SDGs and how the Paris Communiqué emphasises the ministers' commitment to meeting such goals (Orr 2020: 508).

Orr mentions two kinds of risks. The first type includes "more extreme versions of developments … according to the new public management paradigm … based on an administrative understanding of higher education" and, "everything being even more measurable than before", "strengthening the neoliberal concept of a fully utilitarian version of higher education" (*ibid.:* 504 citing Dougherty and Natow 2015; Stahlke and Nyce 1996; and Johnston *et al*. 2018). Moreover, Orr briefly mentions "the ethical consequences of Artificial Intelligence" (Orr 2020: 509).

This chapter largely leaves both the "why" question and the "how" question unanswered. The system-level risks and challenges remain open as the references to the "new public management paradigm" and "the neoliberal concept" fail to describe the fundamental drivers of the digital transformation, the mechanisms of digital economy and their connection to the values of higher education.

The other chapters of "Going Digital?" are variations of the same theme. The second chapter "stems from a strong belief in preparing university students for the demands of a rapidly evolving business world" (Planells-Artigot and Moll-Lopez 2020). The fifth chapter (Grosseck, Malita and Bunoiu 2020) refers to barriers to going digital as action priorities for digital transformation and identifies some opportunities which can be easily implemented in a university. The third chapter (Whitworth 2020) is about pedagogy and the fourth about digital humanities (Chitez, Rogobete and Foitos 2020). These chapters are not designed to flag concerns about the system-level risks of the digital transformation of higher education.

Since the part titled "Going Digital?" largely focuses on opportunities for individuals, it fails to properly address individual-level and system-level risks. There seems to have been an EHEA research silo with little interdisciplinary input. Were the speed of digital transformation slow in higher education, it could take some time for long-term problems to emerge and critical digitalisation studies from other social sciences to become interesting in higher education. However, higher education has been adopting digital technology relatively fast (Williamson 2021; UNESCO 2023b: 4, 7, 8). The focus on opportunities for individuals therefore seems to reflect a bias. For example, the contributors did not address the effects of digitalisation on the higher education market (UNESCO 2023b: 54), institutional organisation (McGill 2023; Komljenovič *et al*. 2024) and scientific publishing (UNESCO 2021a).

3 Reality Check After COVID-19

3.1 General Remarks

If we shared the optimism of the 1990s, it would be easy to list numerous opportunities provided by digital technologies and describe how all values of higher education potentially are enhanced by digital

[2] https://sdgs.un.org/goals, accessed March 19, 2024.

transformation. However, reality does not match the hype. The deployment of digital technologies in higher education also creates risks for individuals and, at the system level, for higher education institutions and other organisations and society in general. It would not be reasonable to assume that higher education remains free from the risks that are characteristic of digital transformation in general.

The opportunities and risks of the digitalisation of education have been discussed in two recent waves of studies. Due to the global nature of digital transformation and the inevitable need to make national policy choices worldwide, international organisations have played an important role in the discourse. The first wave of studies has a connection to the digitalisation of education during the COVID-19 pandemic with an initial optimism turning into a more sombre view. While many of these first-wave studies focus on young learners (*e.g.*, Gottschalk 2019; Small *et al*. 2020; Näpärä 2019; Schleicher 2022; Munoz-Najar *et al*. 2022; Barron Rodriguez *et al*. 2022), there are also studies that address higher education and system-level impacts (Williamson 2018; Williamson and Hogan 2020; West 2023; Komljenovič 2022; Komljenovič *et al*. 2024; UNESCO 2023b; Øvrelid *et al*. 2023). The second wave was triggered by the development of ChatGPT and generative AI tools (*e.g.*, UNESCO 2021b; Sabzalieva and Valentini 2023; Ouyang *et al*. 2022; Pisica *et al*. 2023; Crompton and Burke 2023; Escotet 2023; UNESCO 2023a). In education, the AI policy discourse seems to be a balancing act between perceived commercial potential and ethical challenges.

3.2 Learners

Learners will need digital literacy skills. For this reason, it is "vital" that "teaching and learning innovate to ensure education stays relevant" (Schleicher 2022: 7). In OECD countries, the knowledge and skills of young students are regularly tested by the Programme for International Student Assessment (PISA[3]). The learning outcomes connected to the digitalisation of education have raised concerns.

On the one hand, PISA shows that the majority of 15-year-olds have embraced learning through digital technologies (*ibid*.: 31) and that there is "a positive relationship between the intentional integration of technology in school education and student performance" (*ibid.*: 33). On the other hand, the global trend is that the proficiency of 15-year-olds in maths, reading and science is "heading in the wrong direction" (*ibid.*: 7).

Digital transformation has contributed to declining proficiency levels. First, effective learning in digital settings requires a foundation of skills. Students who were "more self-assured in their ability to learn independently and remotely scored higher in all studied subjects" during the pandemic according to PISA (*ibid.*: 32). This indicates a risk of polarisation and requires focusing on the foundations: "The rising bar for educational success in the digital age puts even greater pressure on education systems to secure strong foundations. The great risk is that technology will super-empower those with strong knowledge and skills while leaving weaker performers further behind." (*ibid.*: 23) Second, time spent on digital devices plays a role. While some time spent on digital devices can improve learning outcomes, too much time will make learning outcomes worse (*ibid.*: 34). Third, "devices used for leisure such as smart phones can distract from learning, expose students to cyber bullying and compromise their privacy" (*ibid.*: 33).

While the digital transformation of society overall can hamper learning in the light of the declining proficiency levels of 15-year-olds, the intentional integration of technology can improve learning

[3] https://www.oecd.org/pisa/, accessed March 19, 2024.

outcomes. This inherent contradiction between the digital transformation of society and the deployment of digital technologies in education creates a challenge. The challenge is "to foster the purposeful and productive integration of digital technology into learning environments, while minimising their potential to distract" (*ibid.*: 34). Generally, the conclusion of PISA is that "[l]earning analytics hold perhaps the greatest promise of digital technologies" (*ibid.*: 32).

According to a UNESCO (2023b) report on technology in education, the suitability and value of digital technology need to be proven in relation to a human-centred vision of education. In other words, change does not always mean progress. The report points out that decision makers are faced with four challenging – and values-based - trade-offs: personalization and adaptation vs. the need to maintain the social dimension of education; inclusivity vs. exclusivity; the commercial interests of the education technology industry vs. the commons; and short-term efficiency advantages vs. the full long-term costs. According to the report, overreliance on technology is not appropriate. The report cites evidence showing that learning benefits disappear if technology is used in excess or in the absence of a qualified teacher. Moreover, learning inequities between students widen when instruction is exclusively remote. The report on technology in education also calls for appropriate governance and regulation (*ibid.).*

A World Bank twin report on the impact of COVID-19 in education (Munoz-Najar *et al*. 2022; Barron Rodriguez *et al*. 2022) reaches the conclusion that the availability of technology is a necessary but not sufficient condition for effective remote learning, that education is an intense human interaction endeavour, and that teachers are more critical than ever. The twin report points out that inequalities were amplified during the crisis and discusses an opportunity to reimagine the traditional model of school-based learning. A study from UNESCO paints a sombre picture of the outcomes of edtech and makes a case for the primacy of school-based learning (West 2023).

Such studies tend to focus on younger learners but are relevant for higher education for two reasons. First, students enter higher education with a package of cognitive and learning skills that today are affected by digitalisation (Gottschalk 2019; Small *et al*. 2020). Second, it is reasonable to assume that the use of digital tools has a similar impact on learning in higher education. For example, attention problems caused by extensive use of digital technology might hamper learning at all educational levels. Scarcity of attention is the dark side of the wealth of information (Simon 1971).

As regards higher education, replacing teaching in the classroom with a digital learning space during COVID-19 may have produced as many credits as before, but it has reduced the perceived learning outcomes and increased loneliness. It has turned out that the social aspects of both structured education and student life play an important role (Øvrelid *et al*. 2023: 65). Moreover, the digitalisation of learning is complemented by the digitalisation of subjects, that is, by increased study of digital objects, increased use of digital sources and a move towards a digital representation of professional knowledge (*ibid*.: 57). Digitalisation has so far meant increased use of English. Nearly 90% of content in higher education repositories with open education resource collections was created in Europe and Northern America (Santos-Hermosa *et al*. 2017), and 92% of the material in the Open Educational Resources Commons global library is in English (Janssen *et al*. 2023).

To sum up the message of these studies, there is no high-quality learning for all without the primacy of school-based learning with qualified teachers teaching in the classroom. There are limits to the digitalisation of education. It is more important to ensure the foundations of education than digitalise education (see already European Commission 2012, section 1.2). The fundamental goals should always be human-centred education and high-quality learning rather than digitalisation. Having said this, digital technologies should be integrated into higher education where it is a purposeful and productive

tool to reach educational goals. Students need to acquire the necessary digital skills for the purposes of learning and future employment. Since digital technologies penetrate all sectors of society, all students should learn to use them at a professional level (see also European Commission 2022, section 5.2). Moreover, as citizens, students should acquire knowledge of the connection between digital transformation and societal processes.

3.3 Institutions

Digital transformation means a growing higher education sector with increasing competition, polarisation and commercialisation. Digital transformation changes the markets that institutions operate in and the way institutions are organised.

Technological advancement has increased the volume of higher education since the invention of printing (McLuhan 1962). Digital transformation has meant growth (Deeks 2021; Sigalés 2021). There is an increase in the number of students, institutions (Williams and Usher 2022), alternative forms of education, alternative providers of education, alternative providers of quality assurance (Tück 2022), publishing channels (Nishikawa-Pacher 2022) and publications (Wu, Wang and Evans; Park, Leahey and Funk 2023; Kozlov 2023).

The growth of higher education means increasing international competition for talented students and staff (*e.g.*, Marginson 2006; Buckner 2019). Competition in a large market tends to create hard-to-enter elite universities that have a better chance to combine the best talent with the best research resources and the best career prospects for graduates (*e.g.*, Binder and Abel 2019; Zhang *et al*. 2022). Institutional rankings tend to turn into a self-fulfilling prophecy (Merton 1948; Espeland and Sauder 2007) and positions at the two ends of the scale tend to be cemented over time (Hamann 2016). If digital transformation has resulted in increasing differences between the skills of students at the secondary level, one can expect a widening gap between more selective and less selective institutions at the higher level.

Digital transformation has changed the position of higher education institutions in the market. While the marketisation and commodification of higher education started long ago (*e.g.*, Skinner 2019; Wilkinson and Wilkinson 2023), the digital infrastructure of higher education has brought new aspects (Williamson 2018). Institutions have become reliant on the intellectual property of large companies that can extract economic rent (Komljenovič *et al*. 2024) and institutions have become customers of digital platform companies (Komljenovič 2022). The COVID-19 pandemic speeded up this process by triggering a rapid shift to remote online learning and increasing the markets of the commercial edtech sector (Williamson and Hogan 2020).

This has created new commercial opportunities for companies. The availability of digital platforms has generally made it easier for new entities to provide education or educational products and compete against traditional institutions. There is plenty of potential for companies in consumer edtech. Edtech can be sold not only to institutions but also to students under a direct-to-consumer model of education. The merger of e-commerce and education can generally open the door to new kinds of for-profit online educational service providers. In the long term, the operators of large platforms such as Amazon are in a good position to sell their own edtech and provide for-profit but low-cost educational products (Williamson *et al*. 2022). Such educational products may include, for example, employment-based schemes, small modules of learning focusing on particular skills, or micro-credentials. In digital economy, it is customary for the operators of large platforms to grow by entering new markets, offering new products and becoming increasingly state-like corporations (*ibid*.; Lehdonvirta 2022).

The digital infrastructure that higher education is embedded in has also had an impact on institutional management. Digitalisation is one of the drivers of centralisation, a top-down management culture, increased competition for contracts and more individualist institutional behaviour in two ways.

First, digitalisation has facilitated the financial business model in the management of institutions. In the higher education discourse, it is customary to refer to the new public management paradigm or to label new professional management practices as neoliberalism (see, for example, Orr 2020: 504; Solomon and Du Plessis 2023). There may also have been a shift to a more hierarchical system due to government action (Shattock and Horvath 2019: 122). In any case, changes in the practices of public management and university management reflect wider changes in corporate management and the reception of economic theory in the societal discourse (see already Polanyi 1944). In the 1970s and 1980s, the traditional managerial business model of large US corporations was replaced by the contractual notion of the firm (Bratton 1989) and a new business model that can be called transactional or financial. The financial business model is an application of neoclassical economic theory, in particular the agency theory (Jensen & Meckling 1976). Its societal impacts have been very controversial (Ghoshal 2003; Ghoshal 2005; Pfeffer 2005; Colander *et al*. 2009; Wang *et al*. 2011). The financial business model nevertheless has influenced university management (Sanyal and Martin 1996; Heaton *et al*. 2022). This model in effect treats the institution's central management as the hub of contracts and members of academic staff as resource providers who compete for contracts. The organisation of a higher education institution as a network of long-term, short-term, temporary or project-based contracts would not be possible without digital platforms. Moreover, digitalisation has facilitated the use of metrics to optimise the utilisation of resources such as staff (see, for example, the San Francisco Declaration on Research Assessment, commonly known as DORA).

Second, the need to optimise the digital infrastructure at institutional level requires centralisation. Digital transformation has required greater investments in digital technology and centralised administrative IT services (Deutsch *et al*. 2021; International Association of Universities and a Politecnico di Milano Research Group 2023; Øvrelid *et al*. 2023: 55, 69—70). This has meant an increase in the relative weight of central administration.

3.4 Teachers

On the one hand, the digitalisation of higher education is not only top-down but also bottom-up. Academic staff are interested in how digitalisation can support education and research (Øvrelid *et al*. 2023: 55). Digital transformation has had an impact on the teaching, monitoring and evaluation methods used by academic staff. The digitalisation of education is complemented by the digitalisation of subjects with increased access to algorithms and data (*ibid*.: 67, 69).

On the other hand, digital transformation has also had an impact on teachers' job security, assessment, workload and psychosocial stress.

In the technical sense, "anything that can be done in a traditional classroom can also be done in a virtual learning environment", but the "choice depends on the purpose", that is, "the type of learning we want to provide and the type of students that it is aimed at" (Sigalés 2021: 419). There is no quality education unless such choices are made by competent teachers. While the availability of technology may to some extent empower teachers, there can be a conflict between teachers' pedagogical or content knowledge and external requirements as to the use of technology (Näpärä 2019).

The quality of such decisions may be hampered by the changing nature of employment. Research and teaching faculty are recruited from an increasingly global pool under contracts that to a large extent are short-term, temporary or project-based (Finkelstein 2017; Hildbrand 2018; OECD 2021). Moreover, digital transformation has increased the use of quantitative metrics (Muller 2018) as proxies of quality in the assessment of teachers and in recruitment decisions. There is an inherent conflict between doing what narrow metrics require and the broad values of higher education. DORA and the Agreement on Reforming Research Assessment have been attempts to address this problem by recommending a more holistic evaluation (*e.g.*, DORA principles 3—5 and 15; CoARA 2022: 4, 8, commitments 1 and 2). In any case, when teachers and researchers compete for contracts, they need to focus on whatever secures employment.

Digital transformation has increased the workload and psychosocial stress of academic staff (OECD 2024: 84). This should be a cause of concern in the light of the fact that higher education is one of the areas with the highest prevalence of burnout (Fernández-Suárez *et al*. 2021).

3.5 Productivity growth

Expectations relating to productivity growth are important for higher education for three reasons. First, higher education suffers from low productivity growth due to its inherent nature (Baumol and Bowen 1965). Second, student numbers have been growing across the EHEA as a whole (with some country variations at different periods, see European Commission/EACEA/Eurydice 2020: 17—19), in the US (Gerber 2014: 118) and worldwide with global participation in tertiary education doubling between 2000 and 2020 (UNESCO Institute for Statistics 2022). Third, while this combination has made the public funding of higher education increasingly challenging, digital transformation has at least partly been expected to help cure the problem.

However, there is little evidence of a general societal trend of increased productivity growth linked to digitalisation (Gordon 2000). In fact, productivity growth has declined sharply across OECD countries over the past decades (OECD 2015; Gordon 2016). The nature of the new technologies may have contributed to the decline. According to OECD studies, digital technologies are challenging to use (Sorbe *et al*. 2019; OECD 2024: 43). This means that productivity gains may only materialize after large investments have been made in many areas of society (Kremer 1993). In research, the exponential growth of published research (Bornmann *et al*. 2021) has gone hand in hand with declining qualitative productivity: major breakthroughs are becoming rarer and require more work than in the past (Bloom *et al*. 2020).

There is thus reason to be sceptical (see Facer and Selwyn 2021) about promises that a certain digital technology will increase the efficiency of teaching and produce better results at a lower cost (for an example of such a promise, see Boel *et al*. 2023).

4 Values

If the digital transformation of higher education implies opportunities and risks at the individual level, the institutional level and higher system levels, it has an impact on values in multiple ways.

It is customary to focus on potential benefits for learners. However, there can be risks as well. Furthering inclusion and providing quality higher education to all arethreatened by the polarisation of

learning outcomes and declining proficiency levels connected to the digitalisation of secondary education. There are similar cognitive, pedagogical and societal mechanisms in higher education.

The fundamental values of higher education as defined in the EHEA include public responsibility *for* and *of* higher education (Bologna Process 2020a: 5). Unrealistic expectations relating to productivity gains brought by digitalisation are a threat to sufficient public investment in higher education. Moreover, when alternative providers of education (*e.g*., European Council 2022, paragraph 8(a)) and alternative providers of quality assurance (Tück 2022) enter the higher education market, states may be tempted to rely more on market forces in the provision of higher education. Faced with rising costs, governments might assume that productivity in the provision of higher education can be increased by innovative technologies, argue that companies can provide quality education at a lower cost by digital means, and accept a more prominent role for companies in the provision of higher education (*e.g.*, Rizvi 2016; Fernández *et al*. 2023: 12375, 12366; Ljungqvist and Sonesson 2022). There is a risk that the privatisation of education makes educational outcomes worse at the aggregate level (OECD 2020: 158, 163) due to the economic drivers of private actors (Hart *et al*. 1997; Vlachos 2012; Vlachos 2019) and undermines the role of a nation's high education level as a public good. Privatised higher education markets - such as those driven by digital transformation - would thus raise questions about the public responsibility for higher education and the public responsibility of higher education.

There is neither institutional autonomy nor academic freedom without the "participation of students and staff in higher education governance" (Bologna Process 2018; Bologna Process 2020a). The principle of "collegiality" (UNESCO 1997, paragraph 32) belongs to the "essential components of meaningful autonomy for institutions of higher education" (*ibid.*, paragraph 2). Such meaningful participation and collegiality are likely to be hampered by the increased centralisation of institutional management, reduced security of employment for staff and distance working.

Academic freedom is hampered when researchers or teachers have fixed-term or temporary employment contracts and the quality of their work is assessed based on narrow quantitative metrics. When institutions are organised around digital platforms, it is easier to organise them as contract-based networks. This amplifies the impact of performance measurement on faculty. While the measurement of performance has traditionally been necessary to produce accountability and to ensure the fairness of evaluations, the digitalisation of higher education has increased the availability of performance data. Combined with the focus on economic efficiency, the wealth of digital data may have contributed to a quantification or metric fixation (Muller 2018: 47; Mau 2019; Infantino and Bussani 2023) that has forced academics to focus on outputs that are easy for management - or the government (*e.g*., United Nations 2020, paragraph 56(b)) - to measure as a precondition of employment or funding. A metric fixation can thus dilute academic freedom that belongs to the fundamental values of the EHEA. This also explains the need for DORA and the CoARA Agreement.

At the societal level, digital transformation has increased economic and political polarisation and undermined trust in representative democracy and the European values. There is a risk that the digital transformation of higher education will make it more difficult for society to address such fundamental challenges. Higher education has a qualification function, a socialisation function and an individualisation function, that is, the function of helping students become more autonomous and independent in their thinking and acting (Biesta 2010: 20—21). While the deployment of digital technologies has been closely connected with the qualification function, the classroom may be better for socialisation and individualisation. The classroom may act as "a preparation stage for the individual becoming a citizen in a democratic society" (Holmes *et al*. 2022: 63). Digital transformation makes it more important to focus not just on information-processing skills such as literacy, numeracy and

digital literacy but also on socio-emotional, communication and meta-cognitive skills (OECD 2023: 23, 145—146, 152, 161—163).

5 Recommendations for the EHEA policy and practice

The rapid digitalisation that was triggered by COVID-19 has created lasting and transformational changes in higher education. Digital transformation affects all members of the higher education community nationally and internationally. It requires complex values-based choices (see, *e.g.*, Rudschies *et al*. 2021 on AI) at all levels from individuals to institutions and governments. The Bologna Process is no exception. Since digitalised higher education seems to be the new normal, there can be no meaningful international higher education policy without addressing digitalisation. There should be a stronger focus on digitalisation in the EHEA policy dialogue, policy making and analysis (policy discourse). Moreover, its broad connections to the fundamental values of higher education in the EHEA should be clarified in order to facilitate reasonable values-based choices. A balance should be found between multiple potentially conflicting goals and between digitalised and other forms of education. The Ministers of the EHEA should ask the BFUG to continue its work on digitalisation and to prepare a balanced view.

The members of the EHEA should not put technology first in higher education. Instead, they should adopt a humanistic approach as an overarching principle for their higher education policies. Moreover, they should respect the fundamental rights of individuals (*e.g.*, AI HLEG 2019: 10; UNESCO 2021a, paragraph 8).

To address the opportunities and risks of digital transformation in the EHEA policy discourse, it would be necessary to adopt a holistic approach. The holistic approach should also take into account the existence of risks for the members of the higher education community and system-level risks. In the EHEA policy discourse, prior studies on the outcomes of digital transformation at other educational levels should be complemented by research focusing on the outcomes of the digital transformation in higher education. The EHEA policy discourse should draw insights from a larger pool of scientific disciplines.

A major new challenge for the member states of the EHEA is polarisation. The digital transformation of society has contributed to economic and political polarisation and by doing so created threats to democracy. In the narrower context of higher education, polarisation takes the form of a widening gap in the skills of entrants, a widening gap between permanent and temporary or fixed-term staff, a widening gap between highly selective universities and the rest, and a widening gap between political views on campus. The widening gap between people creates a serious threat to the values that the EHEA is based on.

It is necessary to address such polarisation. To ensure quality education for all, the members of the EHEA should discuss actions to improve the proficiency levels of secondary-level students and reduce the growing gap in their skills. In higher education, the members of the EHEA should emphasise the need to ensure that students first obtain strong foundations or the package of skills without which it is not possible to concentrate on the actual substance of the studies at a high academic level in a digital environment. Moreover, the members of the EHEA should build on the primacy of in-person, school-based and human-to-human education as a way to address polarisation and build strong foundations. Students, teachers and researchers should meet under the same roof.

Regardless of the digital transformation of education, there is no quality higher education without competent teachers. Rather than reduce the need for teachers, digitalisation has increased their workload. To improve the quality of education, the members of the EHEA should more strongly highlight the security of employment and attractive researcher and teacher careers as a fundamental component of quality education. Moreover, the members of the EHEA should focus more on the development of teacher skills.

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