Guest Editorial

*Digital transformations with "Nordic characteristics"?
Latest trends in the digitalisation of teaching and learning
in Nordic higher education*

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Abstract

In this introductory essay, we build on the articles in this special issue to provide a novel theoretical framework for the understanding of current and future trends in the digitalisation of teaching and learning in Nordic higher education (HE). We highlight three key elements. *Context* is critical and should be systematically expanded to include not only the immediate context of the virtual and blended classroom, but also the broader organisational and national contexts within which digital learning takes place. The involvement of individual actors, higher education institutions and national policy-making agencies in the development and implementation of digitalisation policy ideas and practices is also shaped by multiple *mediations*, which include the mediating role of technology itself, but also of other human, organisational and policy actors, ideas and practices. Finally, digitalisation of HE teaching and learning can lead to a variety of gradual or more radical *digital transformations*, operating at multiple scales and with multiple potential positive or negative effects. This framework helps put into focus the key question of how to go about searching for a flexible set of "Nordic characteristics" that might affect digitalisation of teaching and learning in the Nordic region, albeit in uneven and diverse ways. While it is too early to provide a systematic analysis of the impact of the rapid digitalisation of Nordic HE teaching and learning spurred by the Covid-19 pandemic, we make some preliminary observations that offer this emerging theoretical framework as a way to assess these trends both before and after the pandemic.

A significant step in the production of this special issue on some of the trends of digitalisation of higher education (HE) teaching & learning in the Nordic countries was a one-day workshop hosted and funded by the University of Agder's Centre for Digital Transformation (CeDiT) and held in Kristiansand on 7 February 2020. When we first met to discuss most of the papers that ended up as the final selection, we certainly could not have imagined that, within weeks of our meeting, our main subject matter, the digitalisation of HE, which until then had been a relatively small but rapidly growing niche topic, would have become one of the most important areas, if not *the* most crucial one, in HE in the Nordics, as in the rest of the world. From March onwards, Nordic universities and other higher

education institutions (HEIs) rushed to shift to online learning to continue their operations in the middle of lockdowns and other social distancing restrictions implemented by governments to curb the spread of Covid-19. As more blended forms have been used since the start of the 2020–21 academic year across the region – to allow for a mix of online and face-to-face delivery – digitalisation has now become a staple of all HE teaching & learning, and it looks like this will be the new normal in the foreseeable future, and certainly until a cure or a vaccine for Covid-19 is found.

The bulk of the work published here was conceptualised before the pandemic and in part carried out in the early months of lockdown and afterwards, hence the pandemic did not directly influence the content of the articles. As we write this editorial in October 2020, we have a better picture (albeit still a rather patchy and fluid one) of the momentous effects of the pandemic on the unprecedented digitalisation of HE. Two observations are worth making. The first is that perhaps authors and editors did not feel the need to particularly reframe or adjust their work in view of the pandemic developments, largely because the topics touched upon here have all of a sudden taken centre stage in the delivery of HE teaching and learning: the growth of Massive Online Open Courses (MOOCs) in Scandinavia (Tømte et al. in this issue), the interpretation of Danish national government digitalisation strategies by HEIs (Buus & Haase in this issue), Norwegian school teachers' perceptions of learning outcomes in online professional development programmes (Tømte & Gjerustad in this issue), and the development of digital open educational resources for a bioethics course by a consortium of Nordic HEIs (McGrath in this issue).

The second observation is that, from our conversations with colleagues in the fields of educational technology and higher education, we perceive a growing sense that evolving trends in HE should be understood as separated by an invisible line marking world events before and after Covid-19.[1] It is too early to tell, but it is not inconceivable that the rapid digitalisation of HE caused by the lockdowns might end up producing wide-ranging structural changes well beyond the intended outcomes of digitalisation policies at multiple scales prior to the pandemic. This would be in line with important insights regarding the unintended effects of technology adoption by many scholars working within the sub-field of human-technology interactions in higher education (Laterza et al., 2007) and beyond (Ciborra, 2000, 2002).

As we often hear these days from epidemiologists and public health experts alike, the common maxim that "we truly do not know" applies to the social and biological dynamics of the virus as much as to the rapidly changing landscape of HE. What we *do* know, however, is that despite this global external shock experienced by most countries within a very short period of time, the discordant and variegated stories and experiences that are starting to be registered from around the world, and within the Nordic region in particular, indicate that, once again, technological determinism (e.g. Smith & Marx, 1994) is a poor conceptual framework to capture the multiple paths of co-evolution that we are seeing both within and across countries. HEIs, but also HE systems more broadly, have been reacting differently to the same external shock (Crawford et al., 2020). Something that is emerging more clearly is that, even with significant degree of variations across the Nordic countries (as Tømte et al. in this issue show when focusing on the MOOC phenomenon), Nordic HEIs have so far

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been shielded from the worst. While budget cuts and retrenchments have been announced by HEIs in countries such as the USA and the UK (Sainato, 2020; Staton, 2020), Nordic HEIs, at least in the short term, do not seem to be as strongly affected by the multiple economic effects of the pandemic. The fact that Nordic HE systems have a strong emphasis on tuition-free higher education and maintain, albeit with important differences, steady government funding of teaching and research, might be providing a distinctively "Nordic" response to the multiple complex effects on HE caused by the pandemic.

Publicly funded tuition-free HE seems to be an important stabilising factor that might also equip Nordic countries with a more sustainable path towards increased digitalisation of teaching and learning. These countries can experiment with various innovations in the short and medium term without the same market pressures affecting HEIs that do not have a strong public system to protect them from fluctuations in student numbers and from other possible negative effects caused by the pandemic or similar shocks.[2]

These structural factors, tied to the role of the state and the political economy of HE as a sector, provide an important context to understand some of the trends analysed in the articles composing this special issue. But they also lead us to reflect on one central theme jointly explored with the authors, namely: Is there some kind of convergence across the Nordic countries when we look at the latest trends in the digitalisation of HE teaching and learning? Are there "Nordic characteristics" of sorts emerging in this field, and if so, what does this mean for policy, practice and research moving forward?

In a more focused form, these are the kinds of questions that Tømte et al. (in this issue) tackle as they explore whether there is a Scandinavian model for MOOCs – their focus is on Denmark, Sweden and Norway, rather than the whole of the Nordic region. Despite some of the structural similarities highlighted above, the authors report that MOOCs have taken their own national trajectories. Norway has adopted a more state-led approach, with a clear strategic push via national policies and funding of HEIs to deliver MOOCs for continuing professional development. In contrast, both Denmark and Sweden resorted to more bottom-up approaches, with HEIs unevenly experimenting with MOOCs for institutional branding but also as a means of fostering innovation across the board. There are also similarities across the three countries such as the fact that the majority of MOOC offerings have been initiated internally by local stakeholders at HEIs.

Tømte et al. (in this issue) draw inspiration from the Scandinavian school of new institutionalism (SNI) to answer the question of whether a global phenomenon such as MOOC is actualised in similar forms in Scandinavian countries as elsewhere where it first gained traction (e.g. USA and UK). This is something that has driven the development of the special issue as a whole, as we realised that, while SNI has had significant applications in the study of HE governance and management (e.g. Beerkens, 2010), on the whole it has not been used in studies focusing on the digitalisation of teaching and learning – one notable exception is Fossland and Tømte (2020). The key concept of the "travelling of ideas" (Sahlin & Wedlin, 2008) postulates that specific trends that have become global in nature are rarely, if ever, implemented in their entirety when they move from one national or organisational context to another. Rather, in most situations, abstract ideas associated with a given phenomenon are "translated" or adapted in the light of the specific national and organisational contexts in which they are used. Amongst other aspects, this implies that actors and organisations are not passive, but instead exercise a degree of agency that is aligned with local

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2. See also Estermann et al. (2020) for a discussion of the pandemic's negative effects on European HEIs and of the issue of tuition fees and vulnerability to external shocks.

norms, values, traditions and identities on the one hand, as well as strategic agendas on the other.

This is something we find productive to try to understand how global trends insofar as the digitalisation of teaching and learning are first interpreted (adopted), and then implemented (adapted) in the various national and organisational contexts composing Nordic HEIs and the national systems into which they are deeply embedded.

Haase and Buus (in this issue) are also inspired by SNI and related translation theories such as discursive institutionalism (e.g. Schmidt, 2010). The authors focus on the translation of national digitalisation policy ideas at the level of HEIs in the Danish HE sector. In their rich empirical analysis of policy documents at the national and HEI levels, Haase and Buus highlight the multiple and eclectic paths that national policy ideas take when they are adapted and transformed into HEIs' digitalisation policies. The authors' findings show that HEIs are struggling to find a common language about the rationale, definitions and practices of digitalisation. This might be connected to the general definitional vagueness of national policy ideas, which could act as an obstacle for a more coherent process of translation and implementation.

Context is critical

Conceptually speaking, the first key term to emphasise in this special issue pertains to the role that *context*, in its various manifestations (temporal, geographic, institutional, political), plays in the observed trends. In their study of Norwegian teachers' perceptions of learning outcomes in online professional development courses in mathematics, Tømte and Gjerustad (in this issue) focus on one contextual dimension as suggested by Lave and Wenger's (1991) notions of "situated learning" and "communities of practice": the active creation of contextual situations such as online group discussions and other group assignments as a way to "situate" learning and thus improve learning outcomes.

Our broader ambition with this collection of articles is to expand the notion of context beyond the classroom – something that is still largely missing from the digital learning literature. We are particularly interested in the role of the national contexts (the HE system and the key external actors and institutions interacting with that system) and organisational ones (e.g. how the digitalisation of the classroom brings about, or not, organisational changes and the scope and extent of such changes).

McGrath's (in this issue) reflections on the development of a bioethics course as a digital open educational resource (OER) by a consortium of five HEIs (in Denmark, Finland, Norway and Sweden) are particularly useful. The author highlights the academic merits of the project, but also notes some of the challenges, which seem to be squarely on the side of organisational issues, rather than strictly academic ones. One contextual element that emerges as a potentially Nordic "characteristic" is that, given the strong emphasis on work hours in the organisation of academic labour (also as a result of a long and continuing tradition of strong union presence and co-management with workers and their unions), it seems that a closer integration of the course delivery across the network was somewhat impeded by the lack of an apt organisational mechanism that would allow instructors in one HEI to perform academic tasks on the commonly developed (but separately delivered) bioethics course for students located at other HEIs. The goal of virtual mobility, which was an important part of the consortium's common work around the bioethics OER, became somewhat marginal, as students did not meet across the consortium in one commonly delivered online course as initially envisaged. In light of the current travel disruptions, restrictions and

risks, it is also quite possible that the ideas of "virtual mobility" and "internationalisation at home" that McGrath focuses on (e.g. international exchange without physical travel) will gain more momentum than they might have prior to the Covid-19 pandemic.

The role of mediations

Another important concept closely related to context is that of *mediation*. The first kind of mediation that studies in this field need to take into account is that of technology itself. Too often, scholars and practitioners forget that technologies are not neutral, nor are they just tools that unproblematically perform the tasks that human actors expect them to do (Verbeek, 2006). In the field of HE digital learning, this idea of technology as mediation has been fruitfully pursued by those employing activity theory in their studies (e.g. Blin & Munro, 2008; Czerniewicz et al., 2016). Activity theory (Engeström, 2015) provides a comprehensive framework to map the terrain of digital HE teaching and learning and to understand the complex interactions between the key components of an activity system: mediating artefacts (e.g. digital and face-to-face tools for teaching), subjects (e.g. key actors involved in digital HE teaching and learning such as teachers and learners), objects (the goals of the overall teaching and learning activities), rules at various institutional and policy levels, community (e.g. the broader set of actors influencing the classroom setup), and division of labour among various actors and stakeholders. This complex framework emphasises the multiple mediations that occur between the different parts of the system.

The focus on mediation also helps us illuminate the role played by multiple actors, stakeholders and institutions that contribute to the shaping of the fully online or blended classroom. Here, the insights of activity theory studies are well complemented by the expanded focus by Tømte et al. (in this issue) and Haase and Buus (in this issue) on the mediations played by policy ideas (as they are concretised in policy documents by government and HEIs), but also by policy-makers and university managers as agents actively involved in the translation of ideas as per SNI. McGrath (in this issue) suggests that limitations in the development of the bioethics OER in the Nordic consortium under study might be connected to the fact that actors with more experience on the business and organisational side of HE as an enterprise are missing. These actors, it is argued, could potentially mediate the work of the consortium to improve the project further.

Tømte and Gjerustad's (in this issue) work is another example of how certain tools used in the digital classroom to rebuild context that is often missed with the move from the physical to the virtual classroom (such as group discussions and group assignments), might help mediate a more productive and successful learning experience, potentially leading to better learning outcomes.

From innovation to digital transformations

Once we adopt a dynamic approach to the study of educational technology in the HE sector that focuses on the relationships between multiple contexts and mediations involving a wide range of actors and institutions, and move away from the still prevailing idea among practitioners, managers and policy-makers of the *technofix* (one size fits all, where one technology somewhat magically solves all the various problems at stake), we are faced with the question of what is new and what remains unchanged. The term "innovation" is probably the easiest shorthand we have at our fingertips, given its pervasive usage. Yet, perhaps because of its loaded connotation, so closely linked to certain views of technological deter-

minism and technoutopia, it might be more productive to look elsewhere for a useful interpretive framework to understand continuity and change in the adoption of digital technologies in the Nordic HE classroom. There are of course plenty of innovation frameworks that are aligned with this critique (e.g. Veletsianos, 2016). Yet, we found the concept of "digital transformations" more useful to capture the dynamics and complexities associated with these processes. The concept of digital transformation (in the singular) is particularly prominent in the business studies and information systems field. We are operating our own translations to adapt and modify the concept for our purposes.

In an extensive review of information systems literature on this topic, Vial (2019, p. 119) defines digital transformation as:

> […] a process wherein organizations respond to changes taking place in their environment by using digital technologies to alter their value creation processes. For this process to be successful and lead to positive outcomes, organizations must account for a number of factors that can hinder the execution of their transformation.

Vial's (2019) definition is a good starting point and reflects the general business orientation of most of the literature on the topic – here the term "value creation" is revealing. We would like to revise and modify Vial's definition in a direction that is less linked to the idea of a profit-making entity (e.g. the firm as organisational unit) towards HEIs as organisations that leverage public goods and values. Hinings et al. (2018) provide an important corrective from an institutional perspective and refocus the framework of digital transformation on questions of institutional change and legitimacy. Their emphasis is on new institutional arrangements that emerge from digitalisation, and how these gain (or not) legitimacy among the various actors involved in the affected organisations.

In line with what we identified at the beginning as some of the structural similarities across Nordic HE teaching and learning contexts, we would like to revise further the conceptual apparatus in order to focus more clearly on the public mission of Nordic HEIs. Value creation is still an important concept here, but with a more distinct emphasis on social value in ways that are not always or even primarily overdetermined by market logics. This also opens up the possibility to conceive of paths of digitalisation that are not primarily market-driven, and where market actors are embedded in a broader set of interrelationships where states and societies play an important role in setting needs and expectations and steering the paths along which digitalisation takes place. This is a particularly important topic in light of the growing concerns in academic and public debates about the ownership and control of data produced through technology platform usage more broadly (e.g. Srnicek, 2016; Zuboff, 2019) and the ongoing debates about the ethical and privacy implications in the growing field of learning analytics (see for instance Selwyn, 2020).

A final revision we would like to make to the concept of digital transformation is to pluralise it. As is the case with other social science phenomena such as globalisation (Santos, 2006), it is really digital transformations with a final *s* that we are talking about here. We live at a time when accelerating digitalisation is producing ever more varied and uneven paths of development. To keep the concept in the singular somewhat misses this complexity and multiformity, but also reinforces some of the technodeterministic assumptions of much of the literature on digital transformation. Vial (2019, p. 118) himself provides yet another definition of digital transformation that reveals such bias:

> […] a process that aims to improve an entity by triggering significant changes to its properties through combinations of information, computing, communication, and connectivity technologies.

It is taken for granted here that digitalisation must eventually lead to organisational improvement – and if it fails to do so, it is because of some deficit that needs to be addressed at the organisational level. But the ongoing vibrant debates about the rapid digitalisation of teaching and learning in the Nordics in pandemic times (e.g. Langford & Stang, 2020) are showing that those who are critical and sceptical of the positive potentials of digitalisation are many, and that, if we want to meaningfully understand the wide-ranging effects of the ongoing digital transformations, we do need to move beyond the idea that technology is a singular, monolithic and neutral process that improves outcomes and usefulness over time. Rather, these multiple transformations, as all other social, political and economic transformations in human history, can have highly uneven and disparate effects, ranging from highly valuable social innovations in the broader public interest, to organisational forms and arrangements that benefit the few over the many, with many other paths falling somewhere in between the two ends of this spectrum.

In conclusion, what kind of lessons about digital transformations can we draw from the articles in this collection?

Tømte et al. (in this issue) provide a cautionary note about the pace and depth of transformation. To date the development of MOOCs in Scandinavian countries seems to be a far more gradual and localised approach than a narrow focus on the global MOOC hype would suggest, with national and organisational contexts and mediations playing an important role in shaping the types of MOOCs delivered by HEIs.

Haase and Buus's (in this issue) findings from Denmark suggest that the discursive dimension of digitalisation policies should be paid more attention, and that there is a disconnect between the ambitions of national digitalisation policy on one hand, and HEIs' translations and the lack of definitional clarity on the other hand. Moving forward, these discursive dimensions need to be taken seriously if meaningful and desirable digital transformations are to be achieved with the democratic, ethical and critical involvement of all actors and stakeholders.

Tømte and Gjerustad's (in this issue) work indicates that assessing the advantages and disadvantages of online learning vis-à-vis face-to-face learning needs to move beyond a linear understanding of the virtual classroom as a fixed set of tools and properties. Rather, the kind of learning tools that mediate the virtual classroom experience can make all the difference to the quality of learning outcomes. Here, too, transformations are better conceived as strategic gradual modifications of existing practices, rather than radical breaks with the past.

McGrath (in this issue) alerts us to the organisational and business challenges encountered in Nordic HEIs' cooperating across borders – challenges that ultimately work as an obstacle to the effective deployment of digitalisation for the pursuit of goals such as virtual mobility and internationalisation at home. In other words, the academic and organisational dimensions need to work in tandem to produce effective digital transformations.

One question for future research is whether digital transformations in Nordic HE teaching and learning tend to happen, as these articles seem to suggest, in gradual and piecemeal form – if confirmed, this tendency could become another candidate for the kind of Nordic characteristics we mentioned before. It is also possible that the digital transformations ushered in as a response to the pandemic could provoke far-reaching effects at a pace and scale that go well beyond what is noted by our authors. While we cannot yet tell that story – a story unfolding before our own eyes as we write this introductory essay – what this special issue can do is to provide an entry point into the pre-pandemic Nordic world of digitalisation of HE teaching and learning. Only time will tell whether it is already history.

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