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Beyond “Implementation”: Enabling Sustainable Transformation of Digital Teaching and Learning in Higher Education

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Abstract: This paper examines the following question: What does it take to develop sustainable, digitally mediated teaching and learning (DMTL) in higher education? The COVID pandemic led to the biggest digitalisation experiment in the history of HE. However, as the HE sector moves from “crisis mode” to a “new normal”, there is a need to move from “solutionism” and quick fixes to strategic and sustainable approaches to DMTL. This paper is a contribution to this debate. More specifically, we examine how the notion of *sustainable transformation of DMTL in higher education* can be conceptualised, which challenges such a transformation need to address, and point to practical implications for HEIs. We delineate the concept of sustainable transformation of DMTL, develop an analytical framework to support empirical research and educational development, and illustrate the value of this analytical approach with reference to the experiences of one Faculty at a research-intensive university in Norway.

Paper: This paper examines the following question: What does it take to develop sustainable, digitally mediated teaching and learning (DMTL) in higher education? The COVID pandemic led to the biggest digitalisation experiment in the history of HE. Higher education institutions (HEIs) had to quickly produce emergency solutions to maintain basic educational services. On the face of it, this was highly successful. Globally, students could continue their studies, with some exceptions primarily related to courses centred on practical skills (Al-Kumaim et. al, 2021; Tsang, et al., 2021).

However, as the HE sector has moved from “crisis mode” to a “new normal”, questions are being asked about the limitations of these initial responses. Some argue that the situation has been characterised by “solutionism” and quick fixes (Ajjawi & Eva, 2021; Teräs et al., 2020; see also special issue Goedegebuure & Meek, 2001). These fixes appear disconnected from broader, strategic questions about how DMTL can be addressed from a long-term, sustainable perspective.

More than one year after the global closure of HEIs, academics are pointing to the need for more sustainable approaches to DMTL (Zuo & Miller, 2021). This paper is a contribution to this debate. More specifically, we examine how the notion of sustainable transformation of DMTL in higher education can be conceptualised, which challenges such a transformation needs to address, and point to practical implications for HEIs. Key challenges can be summarised as follows:

A first challenge is pedagogical, including the key question of how digital tools can support teaching and learning. Face-to-face teaching cannot simply “be moved online” but require that existing

practices are re-contextualised (Aagaard & Lund, 2020) and a specific form of design thinking (Goodyear, 2015; Lund & Hauge, 2011) in the planning, enactment and evaluation of DMTL.

A second challenge is that this re-design needs to consider the epistemic constraints and affordances of particular knowledge domains, as digitalisation of teaching and learning involves the re-contextualisation of the epistemic practices that characterise a given discipline.

A third challenge relates to the organisational and cultural dimensions of HEIs. HEIs are notoriously difficult to change (Jónasson, 2016; Niedlich et al., 2020; Stensaker, 2017), and sustainable approaches to DMTL can therefore not be addressed only through individual teachers. Enabling sustainable change involves attention to how organisational and cultural factors shape university teachers' work to develop DMTL.

A fourth challenge pertains to the technology itself, including who owns the platforms and the data they generate, and on what grounds certain digital resources are privileged in the higher education sector. These questions pertain to HEIs' abilities to address challenges that arise in the intersection between technological affordances, economic power, educational policies and ethics.

Against this backdrop, this paper provides an analytical approach and a conceptual discussion centred on the notion of sustainable transformation of DMTL. Sustainable transformation of DMTL involves a form of agency that does not treat digitalization as something predestined, but rather as a problem complex of fuzzy problems that require specific forms of interplay between humans and digital resources (Aagaard & Lund, 2020). A key assumption is that digitalisation does not only challenge the ways in which we think about teaching and learning as a pedagogical practice; it also transforms epistemologies. When digital resources are introduced in educational settings, they not only augment, obstruct or reinforce existing practices, but have a transformative capacity of engendering epistemic change (Lund & Aagaard, 2020). More specifically, we address the following points:

- How can sustainable transformation of digital practices in higher education be conceptualised?
- What kind of demands does sustainable transformation of digital practices place upon university teachers and students, as they engage in different aspects of teaching and learning processes?
- How can sustainable transformation of digital practices be understood from organisational and institutional perspectives, as HEIs attempt to further develop and enhance DMTL?

We explore these questions in two ways: The first is a theoretical discussion where we delineate the concept of sustainable transformation of DMTL, building on cultural historical approaches to teaching and learning with technology (Kaptelinin & Nardi 2018). Based on this discussion, we develop an analytical framework aimed to support both empirical research and educational development. Second, we illustrate the value of this analytical approach with reference to the experiences of one Faculty at a research-intensive university in Norway, with specific attention to how this faculty addressed the COVID crisis during the first year of the pandemic.

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