



Who Are the Frontline Workers of Digital Transformations in Higher Education? A Conceptual Elaboration

Antonia Scholkmann

INTRODUCTION

With the COVID-19 pandemic at the latest, the term “frontline workers” entered mainstream usage. “Essential and frontline workers” were those who maintained critical social services in the face of a disruptive global crisis (Blau et al., 2020). In addition to healthcare workers and employees in critical functions in the public sector, this also included teachers (Beames et al., 2021). However, the *frontline worker*, and its even more specific counterpart, the *street-level bureaucrat*, were already an integral part of the scientific vocabulary long before the pandemic. At the intersection of public management theory, sociology of institutions and organizational learning, street-level bureaucrats have served, in the wake of the practice turn in these subjects, to explain phenomena of variation in the implementation of policy.

A. Scholkmann (✉)
Department of Culture and Learning, Aalborg University, Aalborg, Denmark
e-mail: ansc@ikl.aau.dk

Komljenovic (2020) has clear-sightedly pointed out that the digital transformation of higher education is taking place “in the time when the practice is superseding policy, where there is no regulation beyond the question of data privacy” (Komljenovic, 2020, p. 1). The COVID-19 pandemic has on the one hand exacerbated this situation: the ad hoc transformation of teaching and learning into online mode has established concrete practices even more clearly than before, without well-drafted supporting policies being in place covering more than the absolute necessity to go online. Many of the negative effects discussed by Komljenovic (2020) appear to have multiplied, such as platformization (i.e., the total or partial re-allocation of both the offer and the use of data-based educational arrangements toward digital platforms and hence out of the ownership and steering capacity of the university) or assetization (i.e., renting out digital offers and data instead of exchanging them as commodities, cf. Komljenovic, 2020). On the other hand, however, the specific situation during the pandemic and the forced shift to digital teaching also highlighted the role of university staff as frontline workers. Building on this, I argue that digital transformation of higher education teaching and learning is a policy in the making. That is, its enactment by frontline workers can and should be treated as an important contribution to its definition—especially in the highly digitalized Nordic countries.

The Nordic countries have been elaborated on before as providing a specific case for the understanding of digital transformation. Following Laterza et al. (2020), they can be argued to provide a unique combination of context conditions, such as a state-funded higher education system that provides a relatively safe space for pedagogical and technological experimentation without the immediate threat of losing students (cf. also Fägerlind & Strömqvist, 2004); also, (higher) education in the Nordics is, albeit with variation, guided by principles that go beyond the prioritization of economic gains, working on the premise that education should serve society and a greater public good (Ofstedal Telhaug et al., 2006). This enactment of the Nordic welfare state demands a level of trust in institutions of higher education, which in the case of policy enactment entails high amounts of discretion, both for institutions and for individuals. Moreover, as the authors argue, the expectation of societal value creation in the Nordic approach can act as a counterbalance to the assumed dominance of platform providers in policymaking and shaping (Laterza et al., 2020).

The focus of this paper is digital transformations in the provision of teaching and learning in higher education. This provision must be understood as a multifaceted enterprise, which involves not only teachers, pedagogy, and students, but also support staff and the wider university ecosystem (cf. Laterza et al., in this volume). Digitally transforming it adds another layer of complexity, since *transforming* entails mutual inspiration and co-creation of new concepts, solutions, and ideas with and by use of new (digital) tools (Wollscheid et al., in this volume). Focusing on frontline workers and street-level bureaucrats, then, is also an acknowledgment that digital transformation of teaching and learning is tied to concrete and emergent practices (Gherardi, 2015). This means, that under this practice perspective, not only formalized decisions, guidelines, or laws should count as policy, but also the actions and practices emergent in interplay with these (e.g., Braun et al., 2011; Hill, 2003).

In the following, I will first provide a short overview of the origins and theorization of the concepts street-level bureaucracy and frontline work, together with an outline of how they have been applied in higher education research, so far. Also, some elaborations will be provided on how research on street-level bureaucracy and frontline work has engaged with the phenomenon of digital transformation, and why a focus on the frontline workers of digital transformations of higher education might be a timely enterprise. Second, I will lay out a map of groups of higher education personnel that can be argued to enact frontline work in the digital transformation of higher education. Third, I will briefly elaborate on the possible consequences of framing digital transformations of higher education as frontline work for future research.

DIGITAL TRANSFORMATIONS OF HIGHER EDUCATION AS STREET-LEVEL BUREAUCRACY AND FRONTLINE WORK

The term *street-level bureaucracy* was coined in the 1980s by Lipsky (2010), who, in his seminal book explored the dilemmatic tensions between policies and their execution in practice by human actors. With his work, he was by far not the only scholar at that time to engage in elaborations comprehensively understood as the “practice turn” in social sciences research (e.g., Buffat, 2015). However, as Rowe (2012) puts it:

Lipsky's work (...) has long been one of the clearest expressions of an idea: that those who work on the front line of public services make a difference to policies and to the way in which they are experienced. (Rowe, 2012, p. 10)

This “making a difference” has been explained by the fact that street-level bureaucrats are endowed with considerable discretion in executing their tasks, i.e., degrees of freedom to act as they see fit. This has been argued to be the case since street-level bureaucrats have to solve problems that “deliberately or not, may have been left unresolved further ‘upward’” (Hupe, 2019, p. 7). The execution of their discretion often puts street-level bureaucrats in conflicted positions, for example between their own professionalism and the concrete affordances of the policies they are about to implement (Rowe, 2012). *Frontline workers* (e.g., Balogun et al., 2015) in this view are considered as the ones implementing and translating policy into practice, for example as personnel in the provision of government services, such as administrative front desks, police officers, social workers, or schoolteachers (Blau et al., 2020; Meyers et al., 1998). They are the ones representing the (welfare) state in direct interaction with clients, customers, or students, by carrying the responsibility for the implementation of various forms of policy, from state service to welfare to school curriculums.

For the purpose of this chapter, it must be noted that street-level bureaucracy and frontline work were not originally conceptualized with higher education in mind. When looking at these concepts from the perspective of their original understandings this makes sense: although it takes place at state institutions, higher education is—especially in the Nordic countries—considered to be enacted with a considerable degree of freedom regarding curriculum and didactics (opposed to the much narrower margins in the actions of, for example, police officers; cf. also the introduction to this text). Despite these differences, street-level bureaucracy and frontline work have also been applied as theoretical lenses in higher education research, for example with a focus on how administrative personnel acts as street-level bureaucrats in the execution of administrative tasks related to admission policies (e.g., Bell & Smith, 2022; Chopra, 2020; Howard, 2017). A more flexible understanding of frontline work in higher education can be found in studies that do not necessarily focus on

bearers of legalized power as the enactors of policies but on “soft” bureaucrats, such as faculty and other teaching personnel, and how they enact curriculum and curriculum reform (e.g., Venance et al., 2014; Witenstein, 2020; Wray & Houghton, 2019). Last but not least, researchers have self-labeled as working on the frontline without this necessarily being the line of implementation of an imposed policy or reform, for example with the concept of diversity (Anttila et al., 2018), or in the implementation of emancipatory pedagogies (Louise-Lawrence, 2014).

Research on street-level bureaucracy did also not start out with a specific focus on digitalized and/or digitally transformed frontline work. However, as Hupe (2019) has pointed out, digitalization must be considered as one of the societal developments which have been challenging frontline work and the execution of discretion by street-level bureaucrats recently. Not only has technology led to transformations in the delivery of (public) services—work roles and assignments are also affected, which brings about both advancement and additional challenges (Hupe, 2019). Frontline work theory has proposed two somewhat competing explanations to interpret these developments. In *curtailment theory*, Snellen (2002) proposed a reduction in the degrees of discretion within frontline work due to computerized standardized decision-making. This can potentially de-power street-level bureaucrats since they will no longer be able to “manipulate information” (Buffat, 2015, p. 152). However, and competingly, *enablement theory* proposes that technological advancements are being used adaptively by street-level bureaucrats, in the sense that standardized digital tools will be used for standardized tasks, while more complex matters are dealt with in a face-to-face manner as before (for an overview see Buffat, 2015). In this way, technology seems to increase rather than limit the discretionary powers of frontline workers (Høybye-Mortensen, 2019).

Recent research suggests that the digitalization of services does indeed lead to interplay with street-level bureaucrats’ interpretation with considerable degrees of discretion, and that these effects are not unidirectionally limiting or enabling but provide a picture of transforming work and practices based on digital transformations (e.g., Pors, 2015). In their study, Tummers and Rocco (2015) found that frontline service workers in e-government services are moving toward clients with rule-bending and overwork to make these services work. This falls in line with findings from Løberg (2020), who showed that administrative frontline workers

engaged in digitalized e-government services in Norway considered digitally transformed processes both helpful in terms of flexibility, but also challenging due to the expected availability 24/7. Also, Breit et al. (2019) have pointed out the “increased availability of the frontline workers to the clients” (p. 1) as a challenge to be coped with. This is done by “handing over responsibilities to the clients through digital platforms” (p. 1), which leads to new divisions of labor and new understandings of roles between frontline workers and clients. In their follow-up study, the same group of authors (Breit et al., 2020) coined this outsourcing and re-integrating of tasks and responsibilities as “cyborg bureaucracy” (p. 149), and Nisar and Masood (2018) have labeled providers that go from street level to screen level as “cyborg bureaucrats” due to the far-reaching transformation of roles, services, and interactions between actors and digital tools.

Finally, it must be noted that digital transformation in higher education is not a legally binding aspect of policy work (like for example the data protection policies elaborated on by Komljenovic, 2020). In this sense, expectations of “going digital” should be considered a soft rather than a hard policy (for a more detailed elaboration of these concepts cf. Blomqvist, 2022). However, not least due to the developments instigated by the COVID-19 pandemic, it will be hard for higher education to revert to a non-digital model. As a result, integrating the digital, and eventually instigating digital transformation, is a concept that will remain prevalent in higher education, for example by making the use of specific digital platforms that a university has agreed on mandatory, or by inscribing hybrid learning models into study descriptions. The enterprise of transforming higher education, digitally, builds on more or less obvious forms of policies, which nonetheless play out differently for different groups. An application of the concepts of street-level bureaucracy and frontline work to the digital transformation of teaching and learning in higher education will therefore need to distinguish stakeholder groups based on their tasks, practices and discretion as well as the degrees and levels of discretion they apply, and in relation to specific other groups.

FRONTLINE WORKERS OF DIGITAL TRANSFORMATIONS OF HIGHER EDUCATION

In the following, I will elaborate on four distinct groups—faculty, students, educational developers, and administrative staff—from the perspective of how they can be argued to execute frontline work and

enact digital transformations. I will do so through the theoretical lens of street-level bureaucracy and frontline work, focusing on the aspects of discretion, curtailment and/or enablement, and cyborgization, specifically. I will supplement this with evidence from existing studies that can be argued to substantiate some of the perspectives I propose. It should be noted, though, this will be a first and approximative elaboration, and that more systematic empirical observations will be needed to substantiate these ideas.

Faculty

Teachers have been elaborated on as frontline workers mostly in primary and secondary education (e.g., Tummers et al., 2015), where they are considered to translate the programmatic curriculum into enacted practices toward pupils and therefore toward the broader society. In contrast, faculty and other teaching personnel in higher education (such as non-tenured faculty and adjuncts) have been argued to work with higher degrees of freedom when it comes to the selection of learning content and pedagogical approaches (Scholkmann, 2020; Venance et al., 2014). In this sense, digitally transformed frontline work of higher education faculty and teachers seem to be driven more by enablement than by curtailment.

Based on principles of academic freedom, individual teachers and specific networks of researchers have—long before the ad-hoc digitalization during the pandemic—been engaged in both the design and the reflection of digitally transformed teaching and learning (e.g., Gourlay, 2012; McPheeters, 2009). As self-defined frontline workers these “digital enthusiasts” (Tømte et al., 2019) have contributed to shaping rather than to implementing policy, as they have explored possibilities and boundaries of new technologies, and experimented with new roles for both the teacher and the learner based on what these technologies could provide. Accounts of this can be found in many of the pedagogical concepts that have reframed teaching and learning under an information and communication technology (ICT) perspective, such as Computer Supported Collaborative Learning (CSCS, e.g., Shamir et al., 2007), Networked Learning (NL, Goodyear, 2005) or Technology-Enhanced Learning (Bower, 2017). Collaborations with software development (often as open-source and open-access approaches) might, whether intentionally or not, have contributed to the rise of the digital platform economy.

However, some researchers have argued that the implementation and enactment of new technologies are a threat to academic freedom and shared governance (e.g., Curnalia & Mermer, 2018). Being forced toward the integration of digital practices as a result of a global pandemic has certainly been aversive to at least some portion of faculty and teaching staff (Scholkmann, 2022), and resonates with research on school teachers that have explored this group's reservations toward a transformation of their professionalism through digital practices (Harrits, 2019; Hupe & Hill, 2007). Already pre-Covid, Sjöberg and Lilja (2019) showed that university faculty do in fact perceive digital technologies as constraining when implemented under an organizational instead of a pedagogical rationale. Also, their informants felt that broader societal developments regarding digital transformations were limiting their technology use, such as juridical questions, the rapid evolution of technology, and shifting literacy practices in new student cohorts. In a way, the feeling of being curtailed rather than enabled by digital technology seems to touch upon digital competences, and overcoming resistance to digital change becomes a question of learning (Scholkmann, 2021).

Students

Considering students as potential frontline workers in the digital transformation of higher education might come as a surprise since students are not part of the workforce of higher education institutions. However, as Buchardt et al. (2022) argued for pupils in Nordic schools, learners' enactment can be seen as part of the curriculum, and their experiences form the basis for policy. Transferred to students in higher education, it can be proposed that this population is enacting the even more opaque higher education curriculum with even more discretion than schoolchildren, which makes their frontline work more relevant with respect to shaping policy, but also more difficult to disentangle. In fact, studies on students' digitalized practices have shown a broad variety of activities, and an adaptation of both university-sanctioned and commercial tools for complying with study affordances (Henderson et al., 2017; Lai & Hong, 2015; Yot-Domínguez & Marcelo, 2017). And the same studies have pointed out that students use digital technology in a less pedagogically transformative way than expected by techno-enthusiastic faculty.

Students' non-transformative use of technology could help to explain the finding that implementing digital technology has not fundamentally

transformed pedagogies (e.g., Reich, 2020). It also challenges us to not put the burden of acting transformatively on a population that is, I would argue, enacting digital transformation precisely as they are expected to: As research on digitally transformed policy enactment in other fields has shown, a digitally transformed provision of services increased clients' and customers' feelings of agency (Høybye-Mortensen, 2019). By making use of digital technology to succeed in their programs, students might in fact embrace their discretionary power to comply competently with the existing educational agenda; i.e., they are acting as street-level bureaucrats as expected.

From a different angle, the policy-enacting frontline work of students needs to be discussed from an equality and inclusion perspective. Tellingly, this aspect has been raised predominantly by researchers from the global south (e.g., Dlamini & Ndzinisa, 2020). Due to economic disadvantages, students might not have access to the full range of technological equipment and services, and this can easily become a deciding factor in determining which students get to participate in digitally transformed teaching and learning. This resonates with what street-level bureaucracy research has been pointing out as crucial for participation in policy enactment, i.e., access to training and community (Hill, 2003). In this perspective, selection processes become dominant in deciding who gets to do the frontline work, and as a result, who participates in informing and shaping policy for the education of the future.

Educational Developers

Educational developers (interchangeably: academic developers, staff developers, faculty developers) have been elaborated on as indispensable actors in pedagogical change (Solbrekke & Sugrue, 2020). Through multiple roles and functions—from offering pedagogical training and consultations, to being engaged in curriculum development, to engagement in higher education research and leadership (e.g., Gibbs, 2013)—educational developers are increasingly being seen as active co-creators in the joint enterprise of higher education. Here, again, the pandemic has brought to the fore digital transformation as an arena that had already existed but gained new attention in the last two years. This is reflected in the close entanglement of educational developers also with digitally transformed practices in higher education. A survey on the professional trajectories of educational developers in Germany has shown that in 2017

approximately 13% worked at positions with a focus on media didactics (Scholkmann & Stolz, 2017). So, for parts of the educational development community at least, we can assume a certain knowledgeability and/or enthusiasm for the topic. Also, a cross-section of these groups (i.e., general educational developers and those working in media didactical positions), it must be assumed, will be engaged with faculty (and students, eventually), in the enactment of digitally transformed higher education.

It should be noted that the roles and capacities of educational developers can differ from institution to institution, based on the local interpretation of educational development work. Taking a broader perspective, national policy can also influence how prominently educational developers engage in the shaping of higher education and digital transformation, respectively. In the Nordic countries, educational development has long been highly institutionalized, due to the implementation of pedagogical development in university laws (cf. Moses, 1987 on Sweden as a case). This has resulted in educational development units—and often separate digital transformation units—being common at Nordic institutions of higher education, and educational developers as being considered legitimate members of the organization. In this sense, also the debate on whether education development is an academic field in its own right (e.g., D’Andrea & Gosling, 2001; Harland & Staniforth, 2008; Shay, 2012) is superseded by actual practices of doing educational development in the Nordics, with educational developers executing frontline work in implementing the state-set policies on pedagogical training, but also expanding their spheres of influence toward consultancy and organizational development, and digital transformation, therein (Havnes & Stensaker, 2006).

As their work is based on relations to faculty and peers at similar qualification levels, and not endowed with any sanctioning capacity, the frontline work of educational developers can be understood as acts of “horizontal” rather than “vertical discretion” (Evans, 2011): by assisting (new) faculty to interpret policy, they can, at best, act as “boundary spanners” (Honig, 2006, title)—even if the notion that they always affect their counterparts in a far-reaching and transformative way may itself be somewhat idealized. Instead, and realistically, we can assume that educational developers act as translators of policies toward their clients, defining (willingly, or maybe even unelected) and driving developments in the zone of proximal development. With respect to digital transformation this can become specifically relevant as there often is no detailed agenda in place—as was

clearly the case during the pandemic—which means that educational developers can hold the power to interpret policy and technological affordances, alike. In how far their work is becoming more of a cyborg-quality needs to be closer studied in the future.

Administrative Staff

Most directly affected by explicit policies regarding digitalization (such as data protection or the mandatory use of specific systems) are, finally, staff in administrative roles, for example, study secretaries. It is they who are probably most clearly under the influence of standardized or automated processes (for example when ordering material, setting up and distributing technical hardware, or when navigating the pre-set demands of a specific electronic system). At the same time, they are most directly able to exert discretion by “bending” rules, “manipulating” systems, and amending procedures in contact with students, faculty, external stakeholders, and administrative colleagues.

In the field of (higher) education, we see advancements in algorithm-based testing, automatic plagiarism checks and standardized job-application tools—technology that often is handled by administrative staff. On the one hand, these tools probably curtail academic staff’s discretionary powers, as they limit the freedom to make exceptions or bluntly reach a verdict where none was in place before (as with plagiarism software, for instance). However, administrative personnel’s actions toward these tools also have shown to result in highly adaptive and even cyborgian practices. For example, a study secretary may receive a booking for a certain event via the electronic reservation system, then get up and physically inspect the room before confirming whether the room is suitable for the intended needs via a phone call or email. Although such accounts are only anecdotal at the moment, it can be said that the frontline work on display here creates a new local policy in which members of administrative staff act as intermediaries in a complex socio-material setup.

It has been argued that with the rise of more digitally transformed higher education opportunities, the digitally influenced practices of administrators will become more manifold (Gornitzka & Larsen, 2004; Pohekar, 2018). As research on the practices of this population is scarce in general, and even more so with respect to digitalization, it is of high interest to integrate this important but often overlooked group into future research perspectives.

WHERE TO FROM HERE?

In the first part of this chapter, I provided an elaboration of the applicability of street-level bureaucracy and frontline work to the topics of higher education and digital transformation. In the second part, I engaged in the exploration of the practices of four distinct populations within higher education which can be argued to execute frontline work in the digital transformations of higher education: faculty, students, educational developers, and administrative personnel. Expanding now on both parts, I propose four potential focus points for future research. These are, again, based on the existing literature and research on both street-level bureaucracy and frontline work, supplemented with empirical and conceptual evidence of practices of digital transformation of higher education. Specifically, I will elaborate on (1) policymaking and policy shaping; (2) the interplay between different groups of frontline workers; (3) local variation in frontline practices; and (4) frontline work and digital transformations under a longer-term perspective.

Regarding the first point, *policymaking and policy shaping*, it must be stated that the digital transformation of higher education stands at a crucial point in time: Accelerated by the Covid pandemic, digital tools are implemented at high speed, making what was previously in part a niche interest of digital enthusiasts the concern of the entire university ecosystem overnight. This comes with the realistic concern that platform providers as (en-)actors of the global digital economy are becoming policy shapers in their own right, as they push for business models of platformization and assetization (cf. the introduction of this paper). Moreover, since policymaking is lagging behind rapid technological and economic developments, we see “the governance of education activities (...) shifting from public education law and public scrutiny, to contract law and commercial sensitivity (...)” (Komljenovic, 2020, p. 14). While the need for better policy regarding digital value creation and data sharing is of high importance, also the enactment of soft digital higher education policy beyond data law should be scrutinized. This could be both the study of how the street-level bureaucrats exert their discretionary power given the current situation; and the study of how their enactment of the given soft policy of “go digital” might influence policymakers and policymaking through processes of selective institutionalization.

Regarding the *interplay between different groups of frontline workers*, the Covid pandemic has shown that, in an absolute emergency, traditional boundaries between actor groups and functional roles in the higher education system broke down, and new and innovative solutions were found across traditional boundaries. As Bessette (2021) in their reflection on this situation calls it, this “breaking down of service silos” (p. 9) has shown the potential to create co-constructive spaces for digital transformation. In light of crisis research in combination with organizational learning theory, collaborating across boundaries is considered an important factor for learning and resilience (Scholkmann, 2022). Additionally, an increasing overlap in academic qualification levels between faculty and what are known as “‘third space’ professionals” (e.g., Whitchurch, 2008, title), who often work on administrative contracts within the higher education system, increases both the probability and need for the execution of horizontal discretion and, in general, for collaboration across traditional status and disciplinary boundaries. A future research program should therefore consider the roles and contributions of the frontline workers of higher education not in isolation, but also in the context of their interplay within and across different groups of actors as well as from an international comparative perspective (Hill & Møller, 2019).

Regarding *variations in frontline work*, Blomberg et al. (2018) have shown that variation in policy implementation is based on frontline workers’ professional backgrounds. Also, research has shown variation in policy adaption in institutions with the same outlay (Bjerregaard, 2011). Based on that, we can state that most likely variation in frontline work will occur on a broad spectrum. However, not many studies focused on this, especially not when it comes to digital transformation of higher education. Among the few that have done so, Haase and Buus (2020) found a broad variety of digital policy translations in Danish institutions of higher education, and considerable challenges in finding a common language about the phenomenon. I would argue that this is not to be framed as a deficit due to insufficiently clear national policies (Laterza et al., 2020), but as an expression of discretionary powers at work in the contextualized and concrete enactment of policy. We should bear in mind that in a time “when accelerating digitalization is producing ever more varied and uneven paths of development” (Laterza et al., 2020, p. 230), variation will also more and more be the norm, and not the exception, and should be explored as a contextualized practice.

As a last point, *frontline work and digital transformation under a long(er) term perspective* must be highlighted as a topic for future research. Studies on policy reform have shown considerable strategies of non-compliance and hidden resistance to welfare state reforms among street-level bureaucrats in the longer run (e.g., Meyers et al., 1998). Therefore, a deeper understanding of how both enactment of and resistance to digital transformation in higher education plays out in the frontline work of its actors might be necessary. Digital transformation in higher education has been elaborated on as a multi-stage process (e.g., Bryant et al., 2014; Graf-Schlattmann et al., 2020), in which the interplay of humans and technology (Ching & Wittstock, 2019) as well as an institution's digital maturity (Marks & AL-Ali, 2020) can play a role. Integrating these perspectives could be worthwhile to disentangle the complexity of digital transformations in higher education—in the Nordics, and beyond.

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