Transitions in education: Educators, digitalisation, and datafication

Jennifer Feldman

Education Policy Studies Department, Faculty of Education Stellenbosch University,
Stellenbosch, South Africa
jfeldman@sun.ac.za
https://orcid.org/0000-0002-9367-0980

Laura Czerniewicz

Centre for Innovation in Learning and Teaching, Centre for Higher Education Development,
University of Cape Town, Cape Town, South Africa
Laura.Czerniewicz@uct.ac.za
https://orcid.org/0000-0002-1239-7493

Abstract

This paper explores educators' experiences of the digitalisation and datafication of teaching and learning that intensified during the Covid-19 pandemic. It focuses on the transitions, responses, and agency of educators as the rules of their professional world changed. The paper uses data from four focus group discussions with 19 educators from diverse South African contexts including urban and rural, affluent and poor environments, schools, colleges, and universities. Framed by Archer's (2007, 2012) nuanced concepts of agency, the paper shows how educators working within the structures of very stratified education contexts negotiated their educational projects while the rules were being rewritten as the socio-technical systems in which they taught were—and are—being transformed in ways that are not yet fully understood. Control of the teaching and learning environment has been a key issue as it has become clear how much is outside the jurisdiction of individual educators: the entrenching of big tech in education, stakeholder arrangements including private–state partnerships, and the selection of digital tools and systems. Despite not being explicitly aware of the business models that shape the datafication of their teaching systems, educators discussed their discomfort and unease—while remaining reflexive and active agents showing the ability to reorientate a course of action even within narrow and covert parameters.

Keywords: educator agency, Covid-19, teaching and learning, educational technology, datafication, digitalisation, surveillance practices

Introduction

This paper presents the perspectives of 19 educators from diverse educational contexts whose professional lives were changed by the digitalisation and datafication of their teaching experiences catalysed by the advent of Covid-19. Our focus is on understanding their reactions and responses as the rules of the professional game of education shifted and changed. Prompted by the ubiquity of networked technologies in society impacting everyone, even those with limited access, the pandemic brought the role of technologies into much of South African education at great speed.

The digitalisation and datafication of education have been the subjects of much research, primarily from sociological, systemic, and structural perspectives, which is understandable given the profound impact of these changes on political economies. However, little scholarly attention has been paid to how educators perceive, and are affected by, these less visible forces that shape their practice—particularly with regard to the impact of digitalisation and datafication on South African education. One might assume that educators are unaware of changes because the social arrangements or structures that cause them are often opaque. However, the reality is more complex. Structural changes affect real people who may not use the technical or scholarly language associated with these changes to describe what has taken place but who, nevertheless, experience their effects. Although people may be constrained by external formations, they still exercise agency and pursue their projects despite these constraints. In fact, individuals have the capacity to exhibit agency by finding ways to circumvent structural constraints, strategically. This is particularly relevant for educators who must navigate the increasingly privatised educational context in which teaching and learning activities occur.

This paper therefore, addresses the broad research question: "How do educators at different levels of the South African education system experience and respond to the digitalisation and datafication of their teaching practices?" We assume that educators are not naive and that there is a practical and theoretical rationale for their responses, which we seek to understand.

Conceptual framing and literature review

The digitalisation of education

While digitisation simply means changing the format from analogue to digital, digitalisation refers to the profound changes in practices, models, and systems afforded by technology. Different from sectors such as health or finance, education has been observed (both positively and negatively) to have been slow to become digitalised. All this changed when the Covid-19 pandemic catalysed teaching and learning online. Notably, not all education institutions were able to shift to online teaching and learning. In the school sector, only 11,7% of schools offered remote learning options during 2020, with the majority of schools opting for rotational learning with learners only attending school on certain days each week (Statistics South Africa, 2022). This also presented an opportunity for the educational technology

(edtech) industry to insert itself into educational systems and practices, providing digital programmes, apps, platforms, and data systems as solutions to the closure of educational institutions and, later, to support hybrid teaching and learning. As a result, commercial edtech quickly integrated into the educational landscape—a development that scholars have criticised (Williamson & Hogan, 2020). The pandemic also marked an intensification of the platformisation of education, a process in which enterprises or commercial networks systematically collect, process, circulate, and monetise user data (Cone et al., 2021), resulting in a model characterised by Zuboff (2019) as *surveillance capitalism*.

During the pandemic, by placing the Covid-19 virus as "a common enemy to be overcome," much of the red tape keeping these interrelated processes at bay was removed, allowing for "digital solutions offered by private corporations, networks, and quasi-public associations" (Cone et al., 2021, p. 18) to move, mostly unconstrained, into educational institutions. However, digitalisation in education can never be simply reduced to matters of improving the teaching and learning process because it is far more deeply imbricated in broader aspects of the commercialisation of education. Thus, "technologies do not only narrowly do what is asked of them; the consequences of introducing them can be surprising and at odds with their original intent" (Beetham et al., 2022, p. 19). Although the insertion of digital tools may be well intentioned, they can have unintended effects—including for educators' and students' privacy.

Of the big tech monopolies—coined MAMATA (Meta, Alphabet, Microsoft, Apple, Twitter, and Amazon)—three were particularly prevalent within the South African educational landscape during the pandemic: Google, Microsoft (MS), and Facebook. Facebook offers itself as a free social networking site, while Google and Microsoft target the education market, offering institutions and individuals excellent deals to use their offerings. For example, at the time of writing, Microsoft provides Office 365 free to students and educators with a valid school email address, and Google Workspace for Education is free to all educational institutions. However, "free" for large tech companies is a well-established business model in which resources are paid for by the data and metadata extracted from the tech users; over a decade ago, even mainstream organisations such as Forbes expressed concern about those implications (Goodson, 2012).

The rapid shift towards the digitalisation of education necessitated by the online pivot resulted in some of the risks associated with adopting digital tools being overlooked. Educational institutions signed contracts with various digital vendors at speed due to the urgency of taking action to keep the educational project going. Yet these contracts have real implications, some of which continue to remain unquestioned. Concerns extend from value for money to the systematic extraction of education funding by large private enterprises. For many, the biggest concern has been the normalisation of big tech in education and the mostly optimistic and uncritical manner in which many in education have embraced these tools. (Atenas et al., 2020; Beetham et al., 2022; Selwyn et al., 2020; Stockman & Nottingham, 2022; Williamson, 2018).

Notably, both prior to and during the pandemic, a growing body of literature has argued for the value of using commonly available messaging tools (such as WhatsApp) and social media for supporting and building learning communities (see, for example, Cronje & van Zyl, 2022; Gachago et al., 2015; Mpungose, 2020) despite these tools not being specifically designed for educational use. Similarly, tools designed for business use (such as Zoom and Teams), when used in educational settings, bring non-educational discourses into the classroom through their design: what Ball and Youdell (2009) called endogenous privatisation—the importing of business practices from the private sector into the public sector to make the public sector more business-like. Different to exogenous privatisation (which involves the opening up, that is, the explicit involvement and regulation of the public education services by the private sector), in endogenous privatisation, often little to no effective regulation is introduced to manage the involvement of the private sector. What transpired within the education sector during the pandemic can arguably be seen as a form of endogenous privatisation where these non-educational tools were introduced into education with little to no oversight or regulation.

The datafication of education

Datafication in education is of particular interest because it relates to privacy and surveillance practices. Datafication refers to the process of transforming subjects, objects, and practices into digital data. Associated with the rise of digital technologies and big data, datafication renders a wide range of social and natural worlds into machine-readable digital formats (Jarke & Breiter, 2019; Williamson et al., 2020) from which insights can be gained regarding human behaviour. Increasingly, datafication "introduces new means to measure, capture, describe and represent social life in numbers" through an individual's everyday practices both online and offline (Jarke & Breiter, 2019, p. 1; Mascheroni, 2018; Mertala, 2020). These processes are often illegible or hidden, leaving individuals unaware that all their technology-mediated actions are generating digital data. Datafication enables surveillance capitalism—"a new economic order that claims human experience as free raw material for hidden commercial practices of extraction, prediction, and sales" (Zuboff, 2019, p. v).

Within education, datafication comprises the collection of data about teaching and learning processes at all levels of education systems. Aiming to improve education and hold educators and institutions accountable, data are also used to compare educational outcomes within and across different institutions and countries. However, while these forms of data can increase transparency, accountability, and service delivery in education, they are also associated with concerns concerning surveillance and control, privacy, power relations, and ongoing inequalities in education (Jarke & Breiter, 2019). Globally, digitalisation and datafication in both schools and higher education have been relatively well researched—and the effects of digital surveillance practices, concerns regarding online safety and children's rights, technology and education policy and practice, and issues relating to the role of technology companies in education, are becoming a growing concern (Human Rights Watch, 2022; Thompson & Sellar, 2018). There is a relevant growing literature from the Global South (see, for example, Balakrishnan, 2022; Shukla, 2022) with pertinent research from Latin America investigating the infiltration of big tech into the educational sector (Amiel et al., 2021; Parra

et al., 2018). While the extent of these companies' penetration in South Africa cannot be easily ascertained, it would be fair to agree that

> issues such as privacy, fake news, profiling, targeted advertising, and the like, which have been the focus of societal scrutiny, can become a substantial concern when these same free services are offered and targeted specifically to education, particularly when involving younger students. (Amiel et al., 2023)

The South African context

The challenges and disparities of education in South Africa have been extensively studied and reported on (examples include Jansen, 2019; Spaull, 2019; van der Berg, 2007). Therefore, it is not surprising that institutional responses to the pandemic varied greatly, depending on factors such as the technological resources available to them, the level of technological expertise among their staff, and the context of the institution (e.g. rural/urban, well-resourced/under-resourced, school/higher education). Issues such as lack of connectivity, high cost of data, inadequate training of educators, and general incapacity were also well documented, alongside detailed analyses of digital inequalities (Baijnath, 2021; Council on Higher Education, 2022; Peters et al., 2020). Like many other countries, most South African educational institutions, including those with limited digital infrastructure, turned to digital solutions provided by large software companies such as Google, Facebook (which owns the widely used WhatsApp), and Microsoft to provide educational content both synchronously and asynchronously during the pandemic. Digital platforms quickly became "the new magic" (Landri, 2021, p. 6), even in a country with significant inequality.

Prior to the pandemic, there had been some recognition of the role of technology in education. In the school sector, for instance, White Paper on e-Education was published and laid out the government's stance on using ICTs in education, and emphasised the importance of all schools having access to a wide range of communication technologies (Department of Education, 2004). Similarly, in higher education, there was a focus on teaching with technology with recommendations for online, blended, or hybrid teaching in some instances.

In terms of research, scholarship on digitalisation practices and datafication systems has received limited attention and focused mainly on higher education (Bernard, 2021; Kwet, 2017; Kwet & Prinsloo, 2020). Thus, given the nascence of research into these concerns in South African education, this paper seeks to contribute to this research field and give voice to educators in varied educational contexts.

Educator agency

Central to this paper's argument is that individuals (educators) understand how structures generate occurrences in their contexts and, at the same time, understand that they have agentic power and governance that enables them to mediate their situations and chart different trajectories moving forward. To discuss this aspect, we draw on Margaret Archer's

(2007) notion of reflexivity, which, she argues, plays a role in defining an individual's course of action in relation to the novel circumstances in which they find themselves.

Reflexivity, defined consistently in Archer's work as "the regular exercise of the mental ability, shared by all normal people, to consider themselves in relation to their (social) contexts and vice versa" (2007, p. 4), presents reflexive deliberations as being essential, given that they are the basis on which individuals determine a course of action in their social contexts. Archer states that, in the absence of social guidelines, reflexive deliberations provide the orientating "compass" that enables individuals to make decisions in novel circumstances when things go wrong or if there is a need to adjust to unexpected contingencies. As noted by Archer (2012, p. 2), "since all social life is lived in an open system, the very workability of tradition depends upon resorting to reflexive ingenuity in order to cover unscripted eventualities" or when traditional guidelines conflict with one another. Even though everyday routine interactions involve reflexive accounting, the unexpected, even more so, requires individuals to resort to reflexive deliberations to decide on a course of action that responds to a situation. This was significantly highlighted through the data of the 19 educators who discussed their experiences working within the more digitalised educational environment that was thrust upon them by the pandemic conditions.

The research participants

This research study explored the experiences and views of various educators: school leaders and teachers, education department officials, and higher education lecturers. Despite their varied educational contexts (rural/urban, wealthy/poor, and schools/higher education), they all experienced the "online pivot" and were exposed to the digitalisation of their educational contexts due to the Covid-19 pandemic. The convenience sample of 19 educators interviewed were all, at the time of the interviews, completing postgraduate qualifications in education.

Of the 19 research participants, eight were high school educators teaching in rural (one educator) and urban (seven educators) school contexts. Six of the participants were primary school educators, all teaching in schools in an urban context, and two educators were teaching in a public school supported by private donors. Three educators were lecturers in higher education institutions, one educator was a subject advisor in a rural district, and one participant taught English online for an international company. The school contexts varied between Quintile[1] 1 to Quintile 5 schools, with two educators teaching in private schools. Invited to share their teaching and learning experiences during the pandemic, the research

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1   The quintile system was developed to redress past inequalities and provide equitable funding to all government schools in South Africa, post apartheid. Schools were divided into five categories based on the poverty, unemployment, literacy rate, and infrastructure of the surrounding community. Quintile 1 schools, which are ranked as the poorest most impoverished schools, receive the most funding, and Quintile 5 schools, ranked as wealthy affluent schools, receive the least amount of state funding per learner. Although the system is regarded as flawed because some schools in more affluent areas now serve students who travel from less affluent areas, the quintile system does provide an indicator for categorising schools according to the allocation of state funding (Grant, 2013).

participants participated in four focus groups in September 2021. Our questions were purposefully broad to ascertain how they engaged with digital tools during the pandemic period and whether the risks of datafication highlighted in the literature were reflected in their experiences.

Ethical clearance for the research was obtained from the university's ethics committee, and informed consent was obtained from the participants. Because the focus groups took place during the country's 2021 Level 4 lockdown and in adherence to the university's Covid-19 research protocols, the focus groups took place online using MS Teams. This enabled participants who were geographically situated across the country to all take part. The focus group discussions were recorded, transcribed, and analysed. Codes are used when referring to different educators (P1–P19), and school quintiles and some additional information such as private/government/school/higher education are used to describe their education contexts to give the reader the best possible sense of the various educational contexts the participants are referring to while, at the same time, protecting the participant and institution.

The focus group discussion responses were analysed using qualitative inductive content analysis. This involved iterative engagement and discussion of the focus group transcripts and the relevant literature to identify and describe the participant data into various themes and categories (Schreier, 2014).

Analytical discussion

Transitioning online

Discussing broadly educational changes and challenges during the pandemic, all the educators spoke of using technology in one form or another in order to support teaching and learning. Even though some educators had been using technology in their educational contexts prior to the pandemic, this did not mean that they, or the educational institutions where they worked, were prepared for the swift pivot online with the closure of physical buildings in March 2020. Some private and well-resourced institutions found the move online less challenging because online platforms and digital devices were already being used. However, P1, a teacher at a well-resourced private school noted, "it's not as simple as 'I'm going to teach now like before' . . . there were just so many things that needed to be managed as well."

For all the various institutions, the level of complexity in delivering the curriculum using technology during the pandemic increased significantly. P3, who taught in a school with minimal technology support, stated: "It was so challenging . . . the type of school I am in . . . we don't have the resources." And P2, a teacher at a fairly well-resourced government school, noted how the pandemic conditions had changed aspects of their role as educators:

> You as a teacher need to be much more emotionally prepared and try to emotionally support the child because everything is happening, it's the technology, it's the

> protocols . . . you just don't know where to touch, and where to go because it's so fast changing . . . it is so chaotic compared to a normal school day.

All educators interviewed agreed that initially, the quickest and most accessible form of technology to use during the pandemic was WhatsApp messenger (WA). Facebook (FB) was also mentioned as a platform educators and institutions used to share teaching and learning information. Google apps, MS Teams, and Zoom were also used for synchronous and asynchronous lesson delivery. Two government schools supported by private funders installed Moodle (a learning management system) to support teaching and learning during the pandemic.

It is not generally well known by educators which big tech companies operate behind the technology they use. For example, many may not know that FB owns WA and that when WA was acquired in 2014, users were assured that WA would remain autonomous and operate independently (Fitzsimmons, 2014), keeping the data between the two companies separate. However, in 2021, FB changed its privacy policy resulting in millions of people leaving WA (Challis, 2021), and FB's reputation suffered in the light of its reported role in influencing people's behaviour, and remaining silent when research indicated damage to young women. Notably, none of the participants in our research raised any concerns regarding the use of WA or FB, rather, they highlighted the positive role these played in allowing them to stay in contact and share educational content with their students during the pandemic. Presumably, these were easy-to-use choices selected by educators despite the fact that they were rarely sanctioned by institutions.

Although technology choices were mostly made at the systems level, educators also made choices. During our focus group discussions, the educators exhibited significant choice and agency in choosing tools known to them and their students and that were free and accessible. Even though some institutions instructed educators to use specific technology tools such as Google apps, Microsoft, or Moodle, the educators augmented these platforms with technology tools they felt comfortable using. However, most educators did not consider surveillance or data privacy aspects when selecting technology tools.

Data privacy concerns

At various points during the focus group discussions, educators expressed uncertainty about the provenance and affordances of technology. Recognising that technology is not neutral, and that there are human forces that shape the tools, one educator noted: "We are not trusting those people who are coming with this technology . . . because technology is not something that is being created by the sky. Someone creates it" (P13). This highlights that there was some recognition that digital tools are owned by big tech companies who gather and use the data of the users.

Datafication in education is far from straightforward. Although educators may be aware that using technology creates data, they mostly, as revealed in our focus group discussions, are less aware of who manages, controls, or uses this data, focusing more directly on the use of

technology to support teaching and learning both prior to and during the pandemic. As technology became more entrenched in educational institutions during the two-year pandemic, some institutions used this period to insert additional forms of technology into education. For example, an educator at a government no-fee school supported and managed financially by external funders explained how the school management team introduced data analytics to track learners' progress during the pandemic. Framed as a way that educators could support their learners, the vignette below highlights several valuable points.

> With the whole online teaching at the beginning of the pandemic, the biggest risk for us was the academics of learners . . . with Covid, they spend a lot more time at home and a lot of our learners come from bad backgrounds. Abusive homes, no food at home, so some of them have to be deputy mothers and fathers to their siblings. . . . Somehow, we had a way to collect data on participation on Facebook before we started with the Moodle app. The principal figured out a way to collect the data and she sent us a video on how we can collect data. So every day after our lesson, we had to collect data and send it to her. And that was a way to keep track with how many learners are actually on the Facebook app, participating. I could call learners in my comment section to see who is actually on Facebook during that time slot. And we figured that some of the learners access the lesson but they don't participate. (P17)

Notably, this example shows that for educational institutions and educators, finding ways for teacher–student interaction to continue was central during the pandemic. However, although the educator referred to aspects of datafication, student surveillance, student data tracking, and data analytics, she did not mention student privacy concerns involved in the practice. Instead, she expressed concerns about her students' physical needs and circumstances but did not see using technology as a concern or risk for the students.

The pandemic created novel circumstances that required educators to change or adapt their educational practices. Drawing on Archer's concept of reflexivity, the data from this study shows educators reflexively rescripting their educational project as they adapted to their dramatically fluid circumstances. Archer (2007, p. 7) uses the term *project* to suggest a course of action that a person intentionally engages with "to advance or protect what we care about most." For educators, this involved individual agency as they reorganised how teaching and learning could continue outside the normal classroom context. With little time to reorientate their educational project within the constantly changing pandemic circumstances, the educators engaged in reflexive circumvention to forge new teaching and learning practices. In most cases, this involved the use of technology in some form, with little consideration given to the risks of technology. However, this does not indicate that they did not care, or were not paying attention to their students' use of technology. Rather, it highlights how opaque and invisible the risks associated with the digitalisation of education are for most educators, risks of concern both during the pandemic, and beyond.

Surveillance practices

Shifting teaching and learning online brought great uncertainty for educators, particularly because the platforms used for teaching and learning were now visible to not only their students. The educators discussed feeling vulnerable, exposed, and generally unsure. They described feelings of being watched or monitored, and a loss of privacy. One educator aptly described the online context as "unknown territory." This reveals how unfamiliar the educational space had become and how little they knew or understood regarding the mechanisms at play and associated risks for them as educators and their students.

Aspects of surveillance and privacy were a concern for the educators. They described how parents were able to view their online lessons and content, sometimes commenting inappropriately on lessons or work given to the students. Before the pandemic and the online pivot, most educators enjoyed the privacy of a physical classroom space where anyone entering their teaching context would have to ask permission. Presenting lessons online, which anyone could view, was for the educators disconcerting because they had less control over who was in their virtual classroom. This left them feeling vulnerable when parents made comments about their lessons. P11, an educator at a government school with private funders noted that, "you don't know who is looking at your information," and P1, an educator at a private school stated: "As the subject head for English, I have received emails from parents [about lesson content] . . . So that is a danger, we are exposing ourselves." An educator at a Quintile 5 school constantly felt under surveillance by parents:

> Everyone has access to you all the time . . . the parents want to see all your lessons on Google Classroom . . . they are so in your business . . . there isn't a boundary anymore because we are now linked with WA and email and all these things. (P2)

Interestingly, little consideration was given to tech surveillance practices. However, some educators, in their personal capacity, were aware of issues of data privacy and online surveillance practices by big tech companies, as seen by a comment made by an educator at a private school:

> I'm very well aware that whatever we are saying, whatever we doing—our devices are picking up on that and that data is being collected and we are kind of putting our trust in these huge companies, not to share it with the wrong people. . . . They've [Google] got all your photos, all your contacts, all your locations, everything they've got. . . . I'm not always sure what kind of information Google and Zoom and all of that is collecting of these kids. (P9)

Another participant also recognised that there are possible threats, acknowledging the need to find out more about these risks for themselves and their students: "It is important that we really, really try and find out everything that has to do with the internet and the technology for our own safety and security" (P14).

The educators also discussed how they had used technology as a form of self-protection and resistance when working remotely from home. P11 described how she felt that digital tools could provide evidence to management that they were engaging with learners and parents online while not physically at school. A teacher at a private school also stated that forms of surveillance in educational institutions could provide proof if things went wrong in the classroom: "Surveillance does provide a level of safety and security . . . if you've got a camera in your classroom and something happens, then at least you've got evidence" (P9).

What is evident from the educators' discussions is that for them, surveillance and privacy issues were situated more within their education environments than in the metadata being collected and used by the tech companies through their interaction online. During the pandemic conditions, tech companies had almost unfettered access to data from educational institutions. Everyone's attention was diverted towards managing the ongoing teaching and learning environment and not to what technology was hastily installed in educational institutions. It is also possible that most of the technology that was put in place during the pandemic will remain, uncritically, in those institutions into the future.

Conclusion

This study illustrates how educators were able to navigate within the limits and opportunities available to them, and develop strategies within their respective social arrangements and structural positionings. It is clear that educators have not simply been transitioning to online teaching in particular, but have been transitioning more generally to negotiating the emergent socio-technical systems in which they now find themselves. In the South African environment, it is unsurprising that the digitalisation and datafication, catalysed and amplified by the online pivot, were experienced very differently—those in better-resourced institutions, or those who had previously been experimenting with digital tools, were better able to manage the shift to online teaching and learning. But for all educators, their usual teaching and learning practices, as well as structures and tacit routines, were disrupted. As educators reflected on their experiences and the decisions they made, it became clear that the complexities of teaching during the pandemic required a range of sophisticated and context-specific responses to protect their educational goals.

Educators had limited say or control over the selection of digital tools used for teaching because those decisions were typically made by the educational institution. Software procurement decisions were made at great speed and under enormous pressure, and educators themselves therefore rarely had the option of being involved. In the actual event, when they did have opportunity, educators across all levels and contexts utilised the most accessible, familiar, and cost-free digital tools to facilitate education whenever possible. However, these pragmatic decisions were generally made without explicit consideration of the potential data implications of their choices.

The educators made different types of compromises, highlighting existing inequalities in the system, which is further exacerbated by the lack of transparency in digital models and

systems. Digital platforms are designed to obscure data flows and arrangements, making it nearly impossible for overburdened educators to be aware of the business models that extract personal and educational data from digital usage as they deal with their teaching projects. The opacity of these systems and processes that have been changed by digitalisation makes an already unequal education system even more inequitable; it is more likely that better-off institutions would have the resources to investigate and consider alternatives to dominant offerings. Furthermore, the vagueness of agreements between educators' institutions and big tech companies creates additional murkiness and opaque datafied systems that have become deeply integrated into the broader social world and the education system.

It is evident that, despite not knowing how big tech companies operate, the educators experienced discomfort. Their belief that "technology does not fall from the sky" implies understanding of the inherent biases and values embedded in the tools they were utilising, and their lack of trust in their origin. While attempting to identify alternative approaches, they also expressed concerns regarding various forms of surveillance—predominantly those implemented by educational institutions and management as well as by parents and, to a lesser extent, the data-recording practices of private companies. Their wariness of technological systems' capacity to scrutinise and observe was intertwined with pre-existing analogue practices of surveillance and scrutiny that fuelled distrustful relationships and processes, exacerbating the already uncertain social and educational environment.

All educators emphasised the importance of maintaining their educational vision and goals. The pressure to digitalise their educational practices to realise their goals often required compromising and making trade-offs, especially regarding the potential data implications of digital tools. Most educators expressed little awareness of the potential negative consequences of datafication and digitalisation in their teaching environments, except for a few who expressed concerns about access to technology. Given the diverse educational and socioeconomic backgrounds of the varied educational contexts, however, it is uncertain whether they would have been able to make different choices had they been explicitly informed of the risks. It also raises the question of whether only educators with more access to resources of all kinds would have had the privilege of making alternative choices.

Many factors, such as the increasing dominance of big tech, the evolving relationships between stakeholders including public–private partnerships, and the selection of tools and systems, are largely beyond the control of individual educators. Nevertheless, it is evident that educators remain reflective and active agents in shaping their own courses of action, albeit imperfectly, and always from their own perspectives (Archer, 2007) as they grapple with technology to address their concerns, articulate unease, and create solutions workable in their contexts.

Acknowledgements

References

Atenas, J., Havemann, L., & Timmermann, C. (2020). Critical literacies for a datafied society: Academic development and curriculum design in higher education. *Research in Learning Technology, 28*. http://dx.doi.org/10.25304/rlt.v28.2468

Amiel, T., Pezzo, T., Ribeiro, L., da Cruz, L., & Oliveira, A. (2021). Os modos de adesão e a abrangência do capitalismo de vigilância na educação Brasileira [The modes of accession and the scope of surveillance capitalism in Brazilian education]. *Persectiva Revista Do Centro De Ciências da Educacaçã, 39*(3), 1–22. https://doi.org/10.5007/2175-795X.2021.e80582

Amiel, T., Saraiva, F., da Cruz, L., & Consales, P. (2023). Mapping surveillance capitalism in South American higher education. *Revista Latinoamericana de Tecnología Educativa, 22*(1), 221–239. https://doi.org/10.17398/1695-288X.22.1.221

Archer, M. S. (2007). *Making our way through the world: Human reflexivity and social mobility*. Cambridge University Press.

Archer, M. S. (2012). *The reflexive imperative in late modernity*. Cambridge University Press.

Baijnath, N. (2021). *The fourth industrial revolution, tertiary education, and teaching and learning in the context of development in South Africa* (SARChI Teaching and Learning Research Paper Series). University of Johannesburg. https://www.uj.ac.za/wp-content/uploads/2023/07/narend-baijnath-sarchi-teaching-and-learning-research-paper-series-october-2021.pdf

Balakrishnan, P. (2022, May 25–26). *How are Google and Microsoft embedding themselves in the Malaysian education system* [Conference session]. Digital education governance beyond international comparative assessments: Complex histories, contested presents and contingent futures. https://media.ed.ac.uk/playlist/dedicated/79280571/1_kcusxmak/1_4loxb52d

Ball, S. J., & Youdell, D. (2009). Hidden privatisation in public education. *Education Review, 21*(2), 73–83. https://www.researchgate.net/publication/228394301_Hidden_privatisation_in_public_education

Beetham, H., Collier, A., Czerniewicz, L., Lamb, B., Lin, Y., Ross, J., Scott, A-M., & Wilson, A. (2022). Surveillance practices, risks and responses in the post pandemic university. *Digital Culture & Education, 14*(1), 16–37. https://www.digitalcultureandeducation.com/volume-14-1

Bernard, T. (2021). From didactics to datafication: A critical reflection on virtual learning environments and the production of space. *Journal of Student Affairs in Africa, 9*(1), 197–204. https://doi.org/10.24085/jsaa.v9i1.1438

Challis, D. (2021, January 13). Millions switch from WhatsApp to Telegram after Facebook data grab. *Android Headlines*. https://www.androidheadlines.com/2021/01/millions-switch-whatsapp-telegram-facebook-data-grab.html

Cone, L., Brøgger, K., Berghmans, M., Decuypere, M., Förschler, A., Grimaldi, E., & Hartong, S., Hillman, T., Ideland, M., Landri, P., van de Oudeweetering, K., Player-Koro, C., Bergviken Rensfeldt, A., Rönnberg, L., Taglietti , D., & Vanermen, L. (2021). Pandemic acceleration: Covid-19 and the emergency digitalization of European education. *European Educational Research Journal, 21*(5), 845–868. https://doi.org/10.1177/14749041211041793

Council on Higher Education. (2022). *Reimagining learning and teaching (RELATE): Annotated bibliography and literature review*.

Cronje, J., & van Zyl, I. (2022). WhatsApp as a tool for building a learning community. *Electronic Journal of e-Learning, 20*(3), 296–312. https://doi.org/10.34190/ejel.20.3.2286

Department of Education. (2004). *White paper on e-Education: Transforming learning and teaching through information and communication technologies (ICTs)*. https://www.sahistory.org.za/sites/default/files/white%20_paper_on_e-education_2004.pdf

Fitzsimmons, M. (2014, February 20). Facebook buys WhatsApp for $19 billion. *Tech Radar*. https://www.techradar.com/news/internet/web/facebook-is-wrapping-whatsapp-under-its-wing-1226391

Gachago, D., Strydom, S., Hanekom, P., Simons, S., & Walters, S. (2015). Crossing boundaries: Lectures' perspectives on the use of WhatsApp to support teaching and learning in higher education. *Progressio, 37*(1), 172–187. http://dx.doi.org/10.25159/0256-8853/579

Goodson, S. (2012, March 8). If you're not paying for it, you become the product. *Forbes*. https://www.forbes.com/sites/marketshare/2012/03/05/if-youre-not-paying-for-it-you-become-the-product/

Grant, D. (2013). *Background to the national quintile system*. Western Cape Education Department. https://wcedonline.westerncape.gov.za/comms/press/2013/74_14oct.html

Human Rights Watch. (2022). *How dare they peep into my private life? Children's rights violations by governments that endorsed online learning during the Covid-19 pandemic*. https://www.hrw.org/report/2022/05/25/how-dare-they-peep-my-private-life/childrens-rights-violations-governments

Jansen, J. D. (2019). Inequality in education: What is to be done? In N. Spaull & J. D. Jansen (Eds.), *South African schooling: The enigma of inequality* (pp. 355–371). Springer.

Jarke, J., & Breiter, A. (2019). Editorial: The datafication of education. *Learning, Media and Technology, 44*(1), 1–6. http://dx.doi.org/10.1080/17439884.2019.1573833

Kwet, M. (2017). Operation Phakisa Education: Why a secret? Mass surveillance, inequality, and race in South Africa's emerging national e-education system. *First Monday, 22*(12). http://dx.doi.org/10.5210/fm.v22i12.8054

Kwet, M., & Prinsloo, P. (2020). The "smart" classroom: A new frontier in the age of the smart university. *Teaching in Higher Education, 25*(4), 510–526. http://dx.doi.org/10.1080/13562517.2020.1734922

Landri, P. (2021). The (ir)resistible acceleration of digital education: The emergence of the blended school form in a state of education emergency. *Media Education, 12*(2), 5–14. https://doi.org/10.36253/me-12334

Mascheroni, G. (2018). Datafied childhoods: Contextualising datafication in everyday life. *Current Sociology, 68*(6), 798–813. http://dx.doi.org/10.1177/0011392118807534

Mertala, P. (2020). Paradoxes of participation in the digitalization of education: A narrative account. *Learning, Media and Technology, 45*(2), 179–192. http://dx.doi.org/10.1080/17439884.2020.1696362

Mpungose, C. B. (2020). Is Moodle or WhatsApp the preferred e-learning platform at a South African university? First-year students' experiences. *Education and Information Technologies, 25*(2), 927–941. https://link.springer.com/article/10.1007/s10639-019-10005-5

Parra, H., Cruz, L., Amiel, T., & Machado, J. (2018). Infrastructures, economy and informational politics: The case of the Google Suite for Education. *Mediações Revista de Ciências Sociais, 23*(1), 63–99. http://dx.doi.org/10.5433/2176-6665.2018v23n1p63

Peters, M. A., Rizvi, F., McCulloch, G., Gibbs, P., Gorur, R., Hong, M., Hwang, Y., Zipin, L., Brennan, M., Robertson, S., Quay, J., Malbon, J., Taglietti, D., Barnett, R., Chengbing, W., McLaren, P., Apple, R., Papastephanou, M., Burbules, N., . . . Misiaszek, L. (2020). Reimagining the new pedagogical possibilities for universities post Covid-19: An EPAT collective project. *Educational Philosophy and Theory, 54*(6), 717–760. http://dx.doi.org/10.1080/00131857.2020.1777655

Schreier, M. (2014). Qualitative content analysis. In U. Flick (Ed.), *The SAGE handbook of qualitative data analysis* (pp. 170–183. SAGE.

Selwyn, N., Hillman, T., Eynon, R., Ferreira, G., Knox, J., Macgilchrist, F., & Sancho-Gil, J. M. (2020). What's next for ed-tech? Critical hopes and concerns for the 2020s. *Learning, Media and Technology, 45*(1), 1–6. http://dx.doi.org/10.1080/17439884.2020.1694945

Shukla, A. (2022). *Investigating the private in the digital education field: Imaginaries and precarity in educational provisioning in India* [Conference session]. Digital education governance beyond international comparative assessments: Complex histories, contested presents and contingent futures. https://media.ed.ac.uk/playlist/dedicated/79280571/1_kcusxmak/1_w90vm4s2

Spaull, N. (2019). Equity: A price too high to pay? In N. Spaull & J. D. Jansen (Eds.), *South African schooling: The enigma of inequality* (pp. 355–371. Springer. doi:10.1007/978-3-030-18811-5

Statistics South Africa. (2022). *How Covid-19 changed the way we learn*. https://www.statssa.gov.za/?p=15197

Stockman, C., & Nottingham, E. (2022). Surveillance capitalism in schools: What's the problem? *Digital Culture & Education, 14*(1), 1–15. https://www.digitalcultureandeducation.com/volume-141-papers/stockman-2022

Thompson, G., & Sellar, S. (2018). Testing events and the outside of thought. *Learning, Media and Technology, 43*(2), 139–151. https://psycnet.apa.org/doi/10.1080/17439884.2018.1444637

van der Berg, S. (2007). Apartheid's enduring legacy: Inequalities in education. *Journal of African Economies, 16*(5), 849–880. https://doi.org/10.1093/jae/ejm017

Williamson, B. (2018). The hidden architecture of higher education: Building a big data infrastructure for the "smarter university." *International Journal of Educational Technology in Higher Education, 15*(12), 1–26. http://dx.doi.org/10.1186/s41239-018-0094-1

Williamson, B., & Hogan, A. (2020). *Commercialisation and privatisation in/of education in the context of Covid-19*. Education International. https://www.ei-ie.org/en/item/25251:commercialisation-and-privatisation-inof-education-in-the-context-of-covid-19

Williamson, B., Bayne, S., & Shay, S. (2020). The datafication of teaching in higher education: Critical issues and perspectives. *Teaching in Higher Education, 25*(4), 351–365. https://doi.org/10.1080/13562517.2020.1748811

Zuboff, S. (2019). *The age of surveillance capitalism: The fight for a human future at the new frontier of power*. Public Affairs.