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THE TIPPING POINT IN THE PLATFORMISATION OF DUTCH PUBLIC EDUCATION?

How to approach platformisation from a values-based perspective

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Introduction

In the Netherlands, digital platforms – computational infrastructures that shape user interactions (Poell et al. 2019) – have become increasingly prevalent in public education in the past decade (Kerssens and Van Dijck 2021). Personalised and data-driven learning environments are being developed as networked constellations which interconnect learning tracking systems, adaptive learning platforms, access portals, learning analytics, dashboards, edu-app packages and cloud-based services of Big Tech companies (ibid.). This platformisation of education in the Netherlands, as in other places in the world, unfolds as a transformative process reshaping education (Decuypere et al., 2021) through pedagogies encoded into digital platforms (Perotta et al., 2020; Williamson, 2017) and through platform architectures of datafication by which social practices, such as teaching and learning, are regulated and governed through platforms' systematic collection, algorithmic processing, and circulation of data (Van Dijck et al., 2018; Van Dijck and Poell, 2017).

Yet as we will show, interconnected processes of platformisation and datafication, at least in the Netherlands, not only *reshape* education but are also *shaped by* already existing cultural practices and rationales (Poell et al., 2019). Considering platformisation from this angle necessitates a thorough examination of what rationales underpin the integration of digital platforms in education, how these uniquely shape this process, while also opening up possibilities for how platformisation could or should be shaped otherwise. Therefore, we will start by thinking historically about platformisation and datafication in Dutch public education, following media scholar David Beer's historical approach to big data (Beer, 2016) to develop a richer understanding of historical discourses and rationalities currently shaping the integration of digital platforms into public schools.

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In the following section we uncover how the integration of digital platforms in public education in the Netherlands is part of at least two decades of educational reforms grafted onto *instrumental rationality* – with technologies and techniques of datafication viewed as core instruments for maximising learning effectivity and performance. In the Netherlands, as we will show, digital platforms – presenting more advanced tools of datafication and personalisation – have the potential to seamlessly, unquestioned, and almost naturally 'land into' existing justifications and reasoning around the adoption of technologies in education.

Thereafter, we map how a counter-discourse emerges from public stakeholders and interventions in the educational field, which rallies against an instrumental rationale for digitalisation of educational practice, whilst communicating a clear vision on how digital platform technologies should be taken up through a values-based perspective. This budding counter-discourse, we argue, presents a tipping point which can be further sustained through interaction with earlier fundamental critiques by educational scientists that have been voiced against an instrumentalist and technocratic uptake of educational technology. Finally, in the conclusion we reflect on what our analyses might mean in terms of advice and guidelines for policy makers and practitioners.

The performance-based approach, instrumental logic and the push of platformisation in Dutch public education

What logic underpins and pushes platformisation of school learning environments in the Netherlands? To answer this question, we deconstruct a model of professional action for educators known in Dutch as 'opbrengstgericht werken' ('the performance-based approach'), perceived and actively promoted by the Dutch government as a means to improve learning performance (MECS 2007, 2011). To expose its ideological underpinnings, we will trace the roots of performance-based working to the instrumental rationale of New Public Management or NPM (Gunter et al., 2016) and the 'evidence-based movement' (Eryaman and Schneider, 2017), which have affected educational reforms internationally. From NPM the performance-based approach inherited a dataist style of instrumental and managerial thinking, in particular its view of datafication – the systematic registration, tracking and analysis of data about learners and learning – as a key *instrument* for gaining insight in, controlling and maximising learning processes and learning performance. The evidence-based approach, in turn, nurtured a restricted instrumental view of digital technologies' educational value, investigating educational means – including digital technologies – exclusively in terms of their effectiveness (Clegg 2005; Clemens, 2018). Providing new technological possibilities for datafication and personalisation, new digital platform technologies, we argue, landed comfortably in a performance-based model of professional action, in search of tools for governing and improving learning processes.

Performance-based working was first introduced by the Ministry of Education, Culture and Science (2007) in response to the assumed declining performance

of Dutch students in the core subjects as evidenced in international comparisons such as PISA, PIRLS and TIMSS. It replaced the earlier 'meetgestuurd onderwijs' (internationally referred to as 'data-driven teaching'), which have roughly the same connotation (Ledoux et al., 2009): teachers need to make better use of 'objective' student data, such as test results, to inform their teaching (MECS, 2007). In the national policy agenda 'Schools for tomorrow' (MECS, 2007) performance-based working was presented as a key target point for improving language and math performance of all students in primary education.[1] In general, according to the Dutch government, performance-based working refers to schools which "work systematically and purposefully to maximize the performance of its students" (IoE, 2010, p.4; Doolaard, 2013 in Faber et al., 2015). This also means that schools systematically collect data about pupils' learning progress through continuous assessment, interpreting assessment data to enhance learning processes of individual students (MECS, 2007).

In performance-based doctrine, 'objective' student data on student performance is viewed as instrument to inform decision-making by education professionals with a final goal of achieving higher learning outcomes. This characterises its instrumental rationality, which in general refers to a logic of means-to-end thinking in which means, or instruments, are recognised and adopted in terms of their efficiency and effectiveness in achieving particular ends (Kolodny and Brunero, 2013). Such instrumentalist perception of data roots in the output orientation of NPM's managerialist philosophy, which promoted the idea that judgements about performance are most effective when based on outcome data (Gunter et al., 2016). With NPM reforms of education, then, extensive and continuous data collection, realised through different instruments and technologies of measurement (Williamson et al., 2020), becomes central to educational governance (Ozga, 2009) and the improvement of learning processes (Thoutenhoofd, 2018). This is clearly shown in the Dutch performance-based approach. In the doctrine of performance-based working, we recognise this managerial shift towards output and delivery and the central role assigned to datafication as key instrument for optimising learning and educational management; converting learning results into data, make them susceptible to human interpretation and computer processing, to make judgements about learner performance, while also making management decisions based on learners' performance data and related school quality indicators.

In Dutch education, the New Public Management rationale was a fertile ground for another marriage to make education more *effective*: that of education and the educational sciences. While NPM originates from theories in bureaucracy and administrative reform doctrines (Hood, 1991), the evidence-based rationale comes from a marriage between science and policy in which politicians base their policies on 'what works' (Biesta, 2007). And, while New Public Management thinking was a fertile ground for establishing datafication as key instrument for performance-based working, the evidence-based doctrine pushed its acceptance and roll-out by delivering the 'means' – the didactic designs and interventions, the missing link in an outcome based and means-end thinking – for which proper evidence about

effectiveness existed from scientific research. Performance-based policy and rationale was 'evidence-based' from the start, based on the conviction that research evidence should be its foundation, even if this conviction has been debated since it was launched (Gravemeijer & Kirschner, 2007).[2] Nonetheless, performance-based working and its operational logic of datafication, were pushed as instruments for enhancement of learning based on scientific claims evidencing it enhanced student performance (EC, 2012).

In the Netherlands, especially in primary education, the datafication of learning took the form of a so-called 'learning tracking system' (LTS), which the Dutch educational council (EC, 2011) and Ministry of Education portrayed as "indispensable *tools* [emphasis added] for schools to work in a performance-based way" (MECS, 2011). The national education council viewed LTS as instruments of (1) *datafication*, "a coherent system of standardized [assessment] instruments and procedures to systematically monitor student performance and development" (EC, 2011) and (2) *personalisation*, "[tools for] tailoring education to the individual level of competence of pupils" (EC, 2012). LTS contained standardised tests for registering and collecting assessment data of individual pupils for at least the subject's Dutch language and Maths. In most cases, however, it also collected data about students' socio-emotional development and learning and behavioural problems (EC, 2011). To push performance-based working in schools, the Dutch government legally obliged the use of LTS in primary schools by amendment to the Dutch primary education act in 2013, making it mandatory to collect individual data about learning progress and results, health and support need (MECS 2021), although schools were free to decide which student tracking system to use (EC, 2012).

In the Netherlands, learning tracking systems were introduced in primary education already in the late 1980s as instruments for systematically tracking and recording student progress (Gillijns and Verhoeven, 1991). Initially, these systems were fully paper based, yet in the 1990s they were increasingly supplied with a computer program in which learning data could be manually and automatically registered, such as the LTS provided by CITO, the Dutch organisation for developing and administering exams and tests. After the turn of the millennium, paper systems were progressively replaced by online digital tracking systems, developed by commercial software companies. These digital web-based systems, such as ParnasSys (Topicus) and Esis (Rovict), incorporated instruments of datafication and personalisation to gradually transform into digital platforms; full-fledged computational data infrastructures which revolved around the systematic registration, algorithmic processing and circulation of data about learners and learning. Their use grew exponentially in the past decade, with ParnasSys as the undisputed market leader; in 2012 60% of primary schools already worked with ParnasSys (Vogelaar, 2012) and in 2016 it had a market share of 60–80% (Bisschop et al., 2016).

The acceptance and legitimation of these platforms of datafication as *tools* for performance-based working commenced further platformisation now with more advanced and more integrated technologies. LTSs are increasingly integrated with digital products and services – adaptive learning platforms, dashboards, learning

analytics – presenting new technological possibilities for realising data-driven and personalised learning at a low cost and with a greater impact (Kerssens and Van Dijck, 2021). Importantly, these more advanced digital platform technologies landed comfortably within an already established performance-based model, in search for more effective tools of datafication and personalisation to improve learning processes. This development enabled new research agendas in educational science within the evidence-based approach. The interest in investigating adaptive learning platforms in terms of their *effectiveness* as instruments for improving learning achievements and motivation (Faber and Visscher, 2016; Kester et al., 2018; Molenaar et al., 2016) seems to be based on a performance-based view of what value digital technologies present for education.

Finally, it should be said that the adoption of performance-based working was partial, and its implementation to a certain extent was not successful (Ledoux et al., 2009; IoE 2010) as schools and teachers did not fully leverage the potential of data and other technical instrumentation (Faber et al., 2015; Heemskerk et al., 2014). Despite this, its instrumental rationale clearly was considered 'mainstream' and can therefore still be seen as a dominant force shaping further platformisation of education, given the fact that its desire for effective instruments aligns so neatly with the promises of datafication and personalisation associated with educational platform technology.

The emergence of a counter-discourse for educational platformisation

In past years, a counter-discourse has emerged in which public stakeholders and interventions from public organisations draw on critical media studies and critical pedagogy perspectives to rally against educational platformisation unfolding through an instrumental rationale, while also putting forward a grammar of alternative rationales for digitalisation of education. Even if much is still lacking in the practical realisation of such enterprise, these interventions stand out for their clear vision on how digitalisation of public education should be taken up and for its provision of alternative principles of how this should and can be done. These critical voices are first and foremost based on increasing awareness about platformisation redirecting organisational power from schools to (big) tech companies and acknowledging the role an instrumental model for implementation of these technologies plays in this process.

Dutch public sector organisations Kennisnet and the PO-council, supported by the ministries, are on a mission to reclaim *public control* over educational platformisation, and thereby reclaim control over educational digital reform by private companies. This mission is powered by a new national policy agenda for digitising public education, which lists "sustained focus on the ethics of digitisation in education" as one of five key points, ambitions and activities which should steer digitisation in primary and secondary education for 2019–2023 (MECS 2019). The main trigger for this growing critical awareness of the impact digitisation may have on education are media studies critiques of platformisation as a process of educational reform

through privatisation which risks challenging the interests and values of education as a public good (Van Dijck et al., 2018). These scholarly critiques have received much attention in the educational field in the Netherlands, which is far from surprising as in the past years digital platforms, services and infrastructures of (big) tech corporations have increasingly penetrated school learning environments (Kerssens and Van Dijck, 2021).

Within this context of educational platformisation, critical interventions react against two of the instrumental models' governing principles: (1) its vision on educational technologies as objective tools is replaced by a view of technology as a non-neutral and organisational power steering education; and (2) its belief in platforms as tools serving instrumental values of performance and effectiveness is replaced by an encompassing values-based notion of platformisation as affecting public, social and pedagogical values of education. In the rest of this section, we describe how a counter-discourse is shaped through two critical interventions grouped together in the toolkit 'Realising values in digitisation': *The Ethical Compass* (Kennisnet, 2019) and *The Bloom workshop* (Studio Monnik, 2020).[3] In addition, we discuss associations between this emerging counter-discourse around educational platformisation and earlier critiques by educational scholars of the instrumental model, voiced in relation to both critiques of New Public Management thinking in education, as well as in relation to the so-called evidence-based paradigm.

The Ethical Compass and The Bloom workshop

The Ethical Compass (2019) is an online conversation tool in the form of a roadmap for digitalisation for primary, secondary and vocational education developed by Kennisnet, an institute financed by the Ministry of Education, but governed by representatives of the educational sector. The tool is aimed at schools and educational professionals to assist them in systematically exploring and answering ethical issues surrounding digitisation through a values-based perspective in small groups of 3–7 professionals, supported by a moderator. Ethical reflection starts by naming and describing the schools' core values, often a mix of public, personal, ideological and pedagogical ones (e.g. autonomy, collaboration, trust, honesty, equality). Subsequently the group formulates an ethical question, such as: Is it good that our school uses technology for personalised learning? Is it good that our school knows everything about our students to help them getting a degree? After first collecting intuitive responses, the group will formulate pro and counter arguments by reflecting on what values are enforced and threatened in the use of a particular educational technology. Collected arguments are weighted and the group finishes by formulating the answer.

The Bloom (online) workshop (2020) is a conversation tool for primary and secondary education, developed by Studio Monnik – a company that designs future scenarios to support strategic decision-making by both public and private organisations – and commissioned by the PO-council and the VO-council: the sectoral organisations that represent school boards of all types of public primary and

secondary education. The workshop is aimed at school boards to support them to develop a shared vision of digital education aligned with their desired educational values and beliefs. To ignite conversation and vision formation, the workshop is designed as 'social science fiction' (Selwyn et al., 2020) around a provocative future scenario of platformised education in which education has completely moved to the digital environment of the fictional Bloom platform.

Assisted by a virtual human guide, and supported by videos, the participants "travel" to a near future of education in 2035 to explore what impact current technological developments – rise of personalised learning, integrated digital learning environments, learning analytics, AI emotion reading – may have on education. This future of platform-based learning is visualised and narrated in video animations, through which participants follow primary school student Zoey's everyday interactions with Bloom. In their journey, participants are triggered to reflect on their vision of technology in education and engage in conversations on possible questions about the impact platforms may have on education: If education will soon take place via a platform, will there still be meaningful contact between teacher and student? How will artificial intelligence affect the way we judge student development? What if you don't want or can't afford education in Bloom, are there any alternatives? At the end of the workshop, the participants formulate a joint statement as the basis for developing a vision on educational digitisation.

Interventions such as the Ethical Compass and the Bloom workshop aim to strengthen participation by educational professionals in decision-making around the uptake of digital technologies by opening a space for critical reflection and conversation on the shaping powers of educational technologies, and by having educational professionals reflect on their potential impact on educational practices and associated values. In the report "Weighing Values" (Pijpers et al., 2020) – a vision document that introduces and motivates the perspective of the ethical compass – Kennisnet writes, "if you regard digitisation as neutral, as a development that is inevitable […] then you forget that you are also able to steer it". Schools and educational professionals are portrayed as agents who can actively reflect on what values are enforced as well as endangered. As such, these interventions intend to show that schools are able to exert control over the application of digital technology and "indeed have something to say about the use of technology" (ibid.). Rather than focusing on questions such as "is this technology effective?" or "does this technology contribute to improve student performance?", they encourage educators to ask questions about ways in which digital technology works with and/or against their own educational values and principles. For example, "what happens to meaningful teacher-student contact when digital learning systems take over parts of the teacher's work?" and "what does that mean for the teacher's professional autonomy?". Bringing conversations around these questions into schools, these interventions aim to offer schools a starting point for reclaiming control over shaping digital education.

Moreover, both interventions advocate a values-based perspective, encouraging educators to steer digitalisation by positioning public, social and pedagogical values of education upfront rather than only instrumental values, such as effectiveness. The

Ethical Compass calls for schools and decision makers to not only focus on what is technologically possible, but to consider the social consequences of educational technologies in terms of their impact on public educational values. In practice this means the tool encourages educators to reflect on how particular technologies may affect the professional autonomy of teachers, equality of opportunity and meaningful interactions between teacher and pupils. This 'ethical perspective' – thinking about doing the right thing and reflecting on public values – challenges instrumentalist approaches which still play such a dominant role in shaping what and how digital platforms integrate in public education.

Earlier critiques against an instrumentalist uptake of technology

This budding counter-discourse resonates with earlier fundamental critiques by educational scientists and educational practitioners raised against an instrumentalist and technocratic uptake of educational means, strategies and techniques which ignore the values-orientation of education, that is, the idea that education always revolves around making decisions that imply certain values. Particularly relevant here are earlier critiques by educational scholars in response to New Public Management thinking as well as evidence-based philosophies. While earlier in this chapter we have shown that New Public Management and evidence-based philosophies are the historical roots of a current logic of platformising education, in this section we present earlier critiques on both these philosophies, as we believe this helps to position the recent counter-discourse into a larger discussion on the adoption of technology in education. Such synthesis also provides additional practical insights into the task of digitising public education. These earlier critiques relate both to the point that technology has organisational power that affects educational values, and to the reaction in the described counter discourses that we need values-based rationales for the adoption of technologies in education. However, they add important dimensions to this argument which takes into account the nature of education and learning, as well as the issue of autonomy of educational professionals in processes of platformisation and datafication.

Earlier debates suggested that an instrumental rationale in the adoption of technology not only implies the *absence* of a values-based rationale, but also imposes a *model for professional action* in which the professional is not in control of the desirable outcomes while being 'on the job'. Particularly relevant here is the argument of Gert Biesta (2007, 2010a, 2010b), although this point has been made across the field of education (for instance, Wubbels and van Tartwijk, 2017; Gravemeijer & Kirschner, 2007). Biesta has raised concerns in the context of his critique of evidence-based research in which "it is assumed that the only relevant research questions are questions about the effectiveness of educational means and techniques" (2007, p. 5). As Biesta describes, such an evidence-based approach implies an instrumental model for professional action, in which 'the end' is already given and the only question for the professional is how to reach this end as efficiently as possible, while not being able to judge the desirability of educational ends. Biesta warns us against a

mechanistic view of teaching in which it is the job of 'others' (be it educational scientists, or programmers of educational software) to program and automatise teacher activities based on earlier 'evidence' of effectivity.

Importantly, Biesta (2007) has argued that an instrumental model is not just 'not suitable' to encourage educational professionals to take up their roles to consider the social and moral consequences of educational technologies, but that it also actively discourages such roles. An instrumental rationale, according to Biesta, not only 'restricts the scope of decision-making to questions about effectivity and effectiveness' but also 'restricts the opportunities for participation in educational decision-making' (p.6). Within an instrumental rationale focused on the effectiveness of educational technology, it is assumed that decision-making about adopting these 'instruments' in educational practice is a procedural issue, thus morally 'neutral'. Such concerns around the reduction and obscuring of decision-making processes are all the more relevant in platform technologies organised through algorithmic processing which 'blackbox' (pedagogical) decisions in platform design for educational professionals. A legitimising rationale for the adoption of educational technologies based on an effectivity discourse further obscures the ethical choices implied in such processes.

This argument that an instrumental rationale has organisational power and implies a model for professional action has also been addressed in critiques on NPM thinking in education. The specific point that we like to bring in from this earlier NPM related discussion in addition to the new counter discourses against an instrumental approach, is that data technologies have the tendency to shift normative decision-making away from professionals 'on the work floor' to other levels of the organisation, which then further limits the autonomy of these professionals. In other words, such processes have 'system consequences' for accountability and responsibility and on the location of *where* in the system pedagogical decision-making takes place. This point adds a 'system and labour division point of view' to the new counter discourses, which we think is key to consider in designing strategies for platformisation in education. Gunter et al. (2016), for instance, have warned that according to an instrumentalist, NPM based thinking, intervention power and accountability is moved from pedagogy 'itself' towards output registering technologies and management staff. Such labour division shifts have been a concern in the educational sector for some time, while warning for a shift from professional norms and procedures to management targets and outcomes (Edwards and Daniels 2012), or for the danger that democratically legitimised bodies of supervision can come under threat when control is moved away from classrooms and schools to other systems of accountability (Hangartner and Svaton, 2013). Such a system view with an eye for labour division effects and its concurring shifts in accountability and responsibility are particularly relevant when bearing in mind that platform technologies introduce even more radical shifts in the organisation of labour. For instance, Perrotta et al. (2020) describe how through the use of Google Classroom, key responsibilities, such as institution level integrations, device management, the choice of data region policy and home access, are transferred to system administrators.

As a possible answer to a technologically determinist interpretation of changing models of professional action, Biesta advocates an agentic model in which professionals should be encouraged to hold on to what he calls an "ends-in-view" attitude (2007), irrespective of what technology is introduced in their educational practice. Biesta argues that decision-making in teaching, includes always also 'on the spot' and 'in context' judgements of 'what is desirable or appropriate', irrespective of whatever knowledge, tools, methods are launched to assist. As Biesta writes, interventions of teachers are always in some way interventions in the 'existing course of events' which are then opportunities for students to respond to and serve a mutual learning process of both teachers and students. In Biesta's agentic model of professional action, technologies can inform professional action, when not used as a recipe, and when keeping an eye on the uniqueness and context of each teaching learning action. Relevant for platformisation, just as for the adoption of any technology in education, is that professionals should not be enslaved by pre-established ends already implied in technologies but steer their actions towards what they consider desirable ends, informed by what technologies can offer them. We believe that his agentic model of professional action, as well the argumentation laid out above about why it is essential, further sustains the counter discourses on platformisation and the possibilities to steer platformisation in a practical sense.

Conclusions: what is needed to sustain the mission of a values-based platformisation?

Informed by our analyses of an instrumental rationale underpinning platformisation of public education in the Netherlands, its history in earlier practices of datafication and associated new public management and evidence-based philosophies, our analyses of recent counter discourses and connections to earlier critiques by educational scholars on instrumental reason, we will now move towards the more practical question: *what is needed to sustain the mission of a values-based platformisation?* What do policy makers, sector representatives, publishers, ICT and software designers, schools and teachers need to know? And what do they need to do, given the challenges of platformisation we have brought up?

We believe the Dutch case might be exemplary for how digital education can be shaped under public control through a values-based perspective in the pre-implementation phase of digitisation (rather than a later phase of already platformised schooling). This pre-implementation phase is key for schools and teachers as the shape of the digital learning environments they will work in is affected by many of the decision-making taking place within this phase. Moreover, once particular technologies are adopted such decisions are hardwired into the set-up of digital learning environments and cannot easily be changed.

With the *Ethical Compass* (2019) and *The Bloom workshop*, the toolkit 'Realising values in digitisation' offers hands-on tools which schools and educational professionals can use to make a start with implementing digital technologies through a values-based perspective that privileges public, social and pedagogical values of

education over instrumental ones. By stimulating school leaders and teachers to reflect on how digital technologies may impact desired educational practices and associated values, we believe interventions such as these can play an important role in strengthening their control over how digital platforms shape public education.

Yet to sustain this mission, we argue, more is needed. In the pre-implementation phase, which should also include the pre-design phase, the conditions for digital and platform-based education should be discussed and debated not only by school leaders and teachers, but by a variety of different stakeholders shaping digital education, including policy makers, representatives of the various sectors of public education, educational publishers and software developers. Based on key insights from our analyses, we will now present three points of attention which all aforementioned stakeholders that play and should play a role in decision-making in the pre-implementation phase needed to account for to steer educational platformisation through a values-based orientation prior to the design and assumed massive implementation of platform technologies by schools:

1. ***Historical awareness and analyses of existing rationales for the adoption of technology is key to design 'new' rationales for platformisation.***

Critical research into educational platformisation points out that digital platforms, their infrastructures and encoded pedagogies, reshape education and challenge education as a public good. Yet, equally important, we argue, is to find out what already established cultural rationalities and practices of education facilitate the unquestioned integration of digital platforms in education, how its power dynamics uniquely shape platformisation, and how it could or should be shaped otherwise. As we discussed in this chapter, the platformisation of primary school education in the Netherlands was built on and pushed by an instrumental rationale for adopting technology in education. To think historically about platformisation of education as a process that is part of an earlier history of educational reforms and associated ideologies and philosophies, is also important for professionals and policy makers directly involved with decision-making about digital platform technologies in schools.

However, historical awareness about the process of implementation implies that in addition to 'just' thinking about what the 'right' values or the right rationale for platformisation are in a present context, educational professionals need to actively address (e.g., contradict, deal with, come to terms with, understand its origin) those of the past which are still affecting the present. Historical awareness and an analysis of existing rationales for the implementation of educational technologies, and analyses of impact on existing educational practice, levels of accountability and autonomy, and its implicit pedagogies, should guide platformisation at all stages of implementation, next to putting desired values upfront. In practical terms, this might mean that educational professionals and policy makers not only systematically explore and address ethical issues surrounding digitalisation and ask what core values they think should steer this process, as is recommended in the Ethical Compass, but also make an analyses of their existing ideologies of the adoption of technology, how these

impact upon their core educational values, and what alternative positioning towards digital technologies follow from such analyses.

2. ***For values-based platformisation of education it is key to also design a corresponding model of professional action in which professionals are able to act in an agentic way with technologies.***

In order to encourage platformisation to be based on public, social and pedagogical values of education, it should always allow that an 'ends-in-view' perspective is enabled by educational professionals, and the legitimate authorities when decisions about the design of educational means and 'what desirable education is' is at stake. This does not only imply that educational professionals and representatives should take part in the decision-making process related to which educational values should guide the design of technology. It also implies designing platform technology with enough 'degrees of freedom' for professionals to intervene in them, and that values related decisions implied in already designed platform technology and software are made explicit, especially given that much of the technology is 'blackboxed' for professionals.

In practice, this means that policy-makers, sector representatives, publishers, ICT and software designers need to ask themselves what the appropriate 'entry points' are where professionals can access and act with data or actively manipulate part of the technology. In other words, they should ask how much 'white boxing' (Säljö, 2012) do professionals and students need in order to work with the platform so that they have enough agency? What kind of training (platform or data literacy) is needed and effective in this respect? The answers to these and similar questions will form what we have called a *model for professional action*, and we think policy makers, sector representatives, publishers, ICT and software designers need to be informed that for platform technology to function properly in the field of education, they should not just design technologies, but design a model of professional action, in close alignment with the design process.

3. ***A system perspective point of view is needed when keeping track of and steering values-based platformisation.***

Lastly, based on our earlier point that data technologies have the tendency to shift normative decision-making away from professionals 'on the work floor' to other levels of the organisation, we argue that a 'system and labour division point of view' is needed when platform technologies, their accompanying values framework and model of professional action, are designed and implemented. Platform technologies induce new divisions of labour in the educational process between professionals and automatised technologies, but also between different professional categories (such as between teachers, school management and those responsible for software development, and for data and technology management). Here again, the issue is how in such new divisions of labour professional autonomy and an 'ends-in-view

perspective' of educational professionals, as well as 'continuous democratic contestation and deliberation' (Biesta, 2007) can be best shaped.

Policy-makers, sector representatives, publishers, ICT and software designers thus will have to operate at, design for, include and create collaborations that address the entire system involved in the creation, dissemination, implementation and use of these technologies. This new labour division asks for a different perspective on decision-making in the implementation of digital technology in education and a critical look at where responsibility, autonomy and accountability lays. All stakeholders will have to realise that this necessitates new collaborations and meeting points between software developers, publishers, educational boards, sector representatives and policy-makers in which these issues are scrutinised and in which educational professionals will claim authority over decisions related to pedagogical values.

One way of doing this is the creation of sector wide cooperatives that are assigned authority for decision-making or the advice of authorities. Examples in the Netherlands which have already been launched are Edu-K and SIVON. Edu-K is a public-private cooperative of educational publishers, suppliers, software developers and umbrella organisations of schools, which has the lead in designing the preconditions for the use of ICT in education to the benefit of public schools (Edu-K, 2021). SIVON is a cooperative for joint tendering for ICT-products and services for public education (SIVON, 2021). These cooperatives might serve as a model for what new labour divisions might look like. Even if their agendas are dominated by themes of privacy and security and issues collective purchasing, they may just as well provide examples of how private and public stakeholders can further discuss and take responsibility for, and authority over, shaping the values-based pedagogies of platformisation.

To conclude, in the past ten years, as we demonstrated in the first part of this chapter, the platformisation of primary education in the Netherlands developed as part of an already existing rationale built on instrumental values of efficiency, effectiveness and performance. Digital platforms and services have been integrated into learning environments motivated by their expected contribution to the datafication and personalisation of learning, and overall to the innovation and improvement of education. Digitisation, obviously, offers advantages, and it is key for educational scholars to investigate how these technologies can make important contributions to improving education and learning performance. At the same time, platformisation challenges education as a public good which issue forms a key incentive for schools, supported by public sector organisations and the ministries, to reclaim *public control* over educational platformisation through a values-based orientation. The three points of attention described above aim to give further direction to this mission.

Notes

1 Although we lack data to provide a full picture how wide and how thorough this policy was adopted, there is evidence that not all of the schools have adopted the performance-based approach as it was designed. For instance, in 2011, 30% of Dutch primary schools

scored satisfactorily on the inspection indicators for performance-based working; even though the aim was to double this in 2015 and increase it to 90% in 2018 (MECS 2011).

2 In the Netherlands, the evidence-based approach was promoted by the Committee Parlementary Educational Research (Commissie Parlementair Onderzoek Onderwijsvernieuwing) which concluded that educational innovations in the Netherlands were not (sufficiently) based on educational research and pleaded to base future educational innovations on empirical evidence.

3 Also, part of the toolkit is the 'Value Framework', which is currently only available in beta-version and will be finalised in 2021. The framework identifies public values underpinning Dutch education and is configured around three core values – justice, humanity, autonomy – that branch further into underlying values such as equality, inclusivity, meaningful contact, student self-determination, freedom of education, etc. Based on collectivity and commonality, the value-framework is intended to enhance public control over digitisation, providing the sector of public education with a common language by which to steer market developments.

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