

Vol. 29

Nr. 1

2023

TERTIUM COMPARATIONIS

Journal für International und Interkulturell
Vergleichende Erziehungswissenschaft

Sigrid Hartong and Mathias Decuyper (Eds.)

Platformed professional(itie)s and the ongoing
digital transformation of education

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Steven Lewis and Mathias Decuyper: **Out of time: Constructing
teacher professionalism as a perpetual project on the eTwinning
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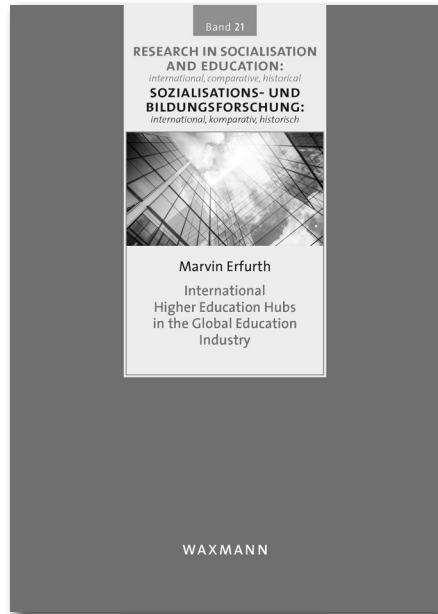
Carlo Perrotta: **Afterword: Platformed professional(itie)s and the
ongoing digital transformation of education**

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International Higher Education Hubs in the Global Education Industry

Sozialisations- und Bildungsforschung: international, komparativ, historisch | Research in Socialisation and Education: international, comparative, historical, vol. 21, 2022, 186 pages, pb., € 29,90, ISBN 978-3-8309-4547-5
E-Book: € 26,99,
ISBN 978-3-8309-9547-0



Education hubs are a recent phenomenon in higher education systems of predominantly Asian countries to innovate local systems through the expertise of foreign actors, particularly from English-speaking countries. To understand some of the phenomenon's implications on international higher education, this empirical study compares attempts to create education hubs in Singapore and the United Arab Emirates. First, the book explores the analytical potential of current approaches to study the phenomenon, and second, it investigates how education hubs change policy and governance in the higher education systems of Singapore and the United Arab Emirates. The book sheds light on how education hubs lead to the involvement of Global Education Industry actors in local systems and how the phenomenon creates new dynamics for policy making and research.

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Tertium Comparationis
Journal für International und Interkulturell
Vergleichende Erziehungswissenschaft
Jahrgang 29, Heft 1 (2023)

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in Kooperation mit der Sektion für International und Interkulturell Vergleichende Erziehungswissenschaft (SIIVE) der Deutschen Gesellschaft für Erziehungswissenschaft (DGfE) vertreten durch die Vorsitzenden: Mandy Singer-Brodowski (Freie Universität Berlin), Donja Amipur (Hochschule Niederrhein) und Sigrid Hartong (Helmut-Schmidt-Universität Hamburg).

Verantwortliche Herausgeber:innen Heft 1, Jahrgang 29: Sigrid Hartong, Helmut-Schmidt-Universität Hamburg, Mathias Decuyper, KU Leuven, Belgien

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Das Jahresabonnement der Onlineversion beträgt 26,00 €, der Printversion 39,00 € (zzgl. Versandkosten). Eine Online-Einzelausgabe kostet 14,50 €, eine Print-Einzelausgabe 22,00 €. Mitgliedern der Kommission für Vergleichende Erziehungswissenschaft werden für ein Jahresabonnement print 22,00 € berechnet.

Bestellungen können per E-Mail an tc@waxmann.com, per Fax an 0251-2650426 oder per Post an den Waxmann Verlag GmbH, Steinfurter Straße 555, 48159 Münster oder an Waxmann Publishing Co., P.O.Box 1318, New York, NY 10028, U.S.A. gerichtet werden.



Waxmann Verlag GmbH, Münster/New York 2023
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ISSN 0947-9732 / E-ISSN 1434-1697



Umschlaggestaltung: Pleßmann Design, Ascheberg

Abbildung: Die Erscheinung der Rose im Kolben des Alchimisten,
aus Abbé de Vallemont, *Curiositez de la nature et de l'art*, Brüssel, 1715

Tertium Comparationis
Journal für International und Interkulturell
Vergleichende Erziehungswissenschaft
Vol. 29, No. 1 (2023)

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in cooperation with the Division International and Intercultural Comparative Educational Research of the German Association of Educational Research (DGfE) represented by their presidents: Mandy Singer-Brodowski (Freie Universität Berlin), Donja Amipur (Hochschule Niederrhein) and Sigrid Hartong (Helmut-Schmidt-Universität Hamburg).

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Tertium Comparationis is published two times a year in print as well as online. Abstracts can be obtained free of charge from: <http://www.waxmann.com/tc>.

Subscriptions of the online version are 26,00 €/year. Subscriptions of the paper version are 39,00 €/year (plus shipping). Single copies of the electronic version: 14,50 €. Single copies of the print version: 22,00 €.

Orders for subscriptions should be sent by e-mail to tc@waxmann.com, per fax to 0049-251-2650426 or by post to Waxmann Verlag GmbH, Steinfurter Straße 555, 48159 Münster, or to Waxmann Publishing Co., P.O. Box 1318, New York, NY 10028, U.S.A.



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ISSN 0947-9732 / E-ISSN 1434-1697



Cover Design: Pleßmann Design, Ascheberg

Illustration: The appearance of the rose in the alchemist's flask, from Abbé de Vallemont,
Curiositez de la nature et de l'art, Brüssel, 1715

Tertium Comparationis
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Editorial: Platformed professional(itie)s and the ongoing digital transformation of education¹

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Over the past decades, a growing body of research has identified a substantial restructuring of the education field, caused by global governance transformations such as the rising empowerment of international organizations and policy networks (e.g., Dale & Robertson, 2007), trends of marketization (e.g., Rönnerberg, Lindgren & Lundahl, 2019), or the growing dominance of accountability- and test-related policies (e.g., Lingard, Martino, Rezai-Rashti & Sellar, 2015; Grek, Maroy & Verger, 2021). Much of that research has analyzed the various effects of these transformations on educational institutions and classroom practices, and hereby also fostered our understanding of both their global nature and their local manifestations (e.g., Verger, Altinyelken & Novelli, 2018).

It is within that wider group of research that studies on the impacts of governance transformations on educational professional(itie)s can be situated. Little surprisingly, the strongest focus has hereby so far been on teachers, and the conflictual interplay between professionalization and de-professionalization (for an early thematic review see Race, 2002). For instance, in countries such as the US and the UK, which have strongly intensified high-stakes accountability policies in education over the past decades, many scholars have identified a rising de-professionalization (e.g., in the form of diminishing autonomy and trust) and demoralization of teachers (Wronowski & Urick, 2021; Holloway, Sørensen & Verger, 2017). Other work has put emphasis not only on the collegial and individual, but equally on the organizational level of professionalism, as well as on micro-level contextual variation, to address the actual

simultaneity and manifoldness of processes of professionalization and de-professionalization (Frostenson, 2015).² While some dimensions of professional autonomy might hereby be observed as diminishing, other dimensions of educators' work (e.g., fostering inclusion) might actually be increasingly acknowledged and responded to with new forms of professional training. This not only applies to research that discusses the changing professionalism of the teacher: research on other types of education professionals has evolved around similar debates, including studies on school principals (e.g., Tekleselassie, 2002; Jarl, Fredriksson & Persson, 2012), superintendents (e.g., Kowalski, 2006), or higher education staff (e.g., Gerber, 2014; Boitier & Rivière, 2016).

With the continuous digitization of the educational sector and, more recently, the rising prevalence of digital platforms within all spheres of the education system, the debate around transforming educational professional(itie)s has substantially gained momentum. On the one hand, there is a significant body of literature calling for new forms of professionalization of educational actors, based on the argument that the emergence of new digital, data-driven technologies in education requires new types of professional knowledge, skills, and attitudes (for recent overviews on teachers see, for instance, Fernández-Batanero, Montenegro-Rueda, Fernández-Cerero & García-Martínez, 2022). In this literature, technologies such as educational platforms are regularly described as highly beneficial for supporting professional practices, including the improvement of professional decision-making (e.g., through providing detailed learning analytics). On the other hand, scholars have expressed substantial concerns that digital platforms risk taking professional autonomy and judgement away from educators, whilst at the same time empowering technology providers and algorithmic systems of decision-making to increasingly influence what is happening in various educational practices (see Roberts-Mahoney, Means & Garrison, 2016 for an example of the classroom or Perrotta, 2021 for a study on universities). It is, consequently, not only the ambivalent impacts of digital platforms on *existent* educational professional(itie)s that matter, but equally the simultaneous empowerment of *new* professional(itie)s to act in education, including platform designers or data infrastructure managers, as well as the rising ascription of platforms as 'professionals' themselves (e.g., Lewis & Hartong, 2022; Perrotta, Gulson, Williamson & Witzemberger, 2021).

Despite this growing interest in the various roles that digital platforms play in reconfiguring professional(itie)s, however, most research in this area is still situated on a more general, programmatic and partly also speculative (either euphoric or dystopic) level (Decuyper, Grimaldi & Landri, 2021). In contrast, not much research has thus far explicitly discussed and, in particular, *empirically studied* the actual reshaping of educational professions through educational platforms (but see for

instance Ideland, 2021, and Lewis, 2020 for the transforming ‘figure’ of the teacher). Related to that, thus far little research has problematized the question of how (de-)professionalization in/through such platforms manifests in *concrete* educational practices, including thorough discussion on the complex interplays between the global nature, versus the contextual nuances of platformed professional(itie)s (cf. Alirezabeigi, Masschelein & Decuypere, 2022; Landri, 2021; Robinson, 2022).

With this special issue, we seek to engage with, and significantly push forward, this emerging body of literature, by bringing together research that (1) *conceptually discusses and empirically deconstructs the surging power of educational platforms in the (re-)shaping of educational professional(itie)s*, and that thereby equally (2) *addresses the specific interplay between broad processes of platformization and different socio-cultural contexts*. In line with what we argued above, the special issue hereby covers the (re-)shaping of more ‘traditional’ professions – namely teachers, school leadership as well as state supervising personnel – but equally discusses the emergence of parents as ‘new’ types of professions, as well as the role of platforms as professionals themselves. Regarding the role of socio-cultural contexts, the collection follows a comparative case study approach (Parreira do Amaral, 2022). That is to say, rather than using national cases as a priori ‘containers of comparison’, each contribution provides a unique, in-depth case study, which actively investigates how ‘context’ becomes visible and is transformed in a specific case of platformed professional(itie)s. In doing so, we respond to more established developments in the field of comparative education that seek to denaturalize territorially bounded understandings of context as ‘given’ and, instead, turn context into a matter of concern and investigation (Sobe & Kowalczyk, 2018; Hartong & Piattoeva, 2021). At the same time, we offer an innovative contribution to that field, by specifically addressing the ‘power of (re-)contextualization’ embedded in digital platforms.

In the following two sections, we first outline some of the most distinct conceptual features that, in our view, characterize educational platforms today, before discussing more specifically how a context-sensitive (yet comparatively oriented) investigation of platforms can look like. Next, we introduce the different types of ‘platformed profession(alitie)s’ covered in this special issue, before providing a brief outlook to fruitful future research in this area in the last section.

Characteristic features of digital (education) platforms

Over the past decades, digital platforms have gained increasing importance in different educational practices (van Dijck, Poell & de Waal, 2018), a phenomenon that has been substantially further triggered by the recent and ongoing COVID-19 pandemic (Williamson, Eynen & Potter, 2020). What originally started as *Learning Manage-*

ment Systems (LMS) that were fairly limited in scope (that is, largely focused on the management and distribution of files and content), digital environments today have become more and more complex and dynamic, ranging from large-scale meta-platforms to micro-service-platforms, providing services from communication to adaptive tutoring, and spanning all education levels from early childhood to adult education. It is both this growing omnipresence and this variety of platforms that has made it increasingly important (but at the same time quite challenging) to develop a common understanding of what platforms actually *are*, for instance by means of enlisting defining features that characterize them. Addressing this gap, and building on the work of van Dijck et al. (2018), we have recently suggested the following three features that are characteristic of digital platforms (Decuyper et al., 2021, pp. 3 ff.).

First, digital platforms possess specific forms of *digital architectures*. Much like a physical platform, digital platforms can be conceived as stages through which actions and activities unfold in a regulated form and, like any stage, they are built and constructed in specific manners (Bratton, 2015). Two of the most significant architectural building blocks of platforms are the *Graphical User Interface* (GUI) and the *Application Programming Interface* (API) (Kelkar, 2018). Put simply, the GUI is what users of platforms get to see on the screen. GUIs are no neutral transmitters of information, but are highly aestheticized and attractively visualized environments that seek to maximally draw users in, for instance by personalizing the content offered and by using various techniques that seek to keep learners engaged (e.g., notifications to ‘continue learning’, pop-ups that tell that ‘you are dearly missed’ when not active for a while). APIs, on the other hand, are software interfaces that allow platforms to communicate with other platforms, for instance, through plug-ins. Hence, platforms are no monolithic actors with clearly identifiable boundaries, but heterogeneous assemblages that commonly draw in other platforms as well. In that respect, platforms can be conceived as ‘stacks’ of different modules building on, and built on, each other (cf. Bratton, 2015). One example is the embedding of YouTube within the learning management platform of an education institution; another example is Amazon’s cloud-based voice recognition software Alexa, whose API is embedded in many digital education platforms such as Moodle and Blackboard. The central precondition for platforms to be present in, work in, and be able to operate within different other platforms is their *interoperability*, which is, amongst others, made possible through the standardization of meta-data (Kerssens & van Dijck, 2021; Hartong, Förschler & Dabisch, 2021; Kubicek, Breiter & Jarke, 2019).

Second, digital platforms can be characterized by means of their *intermediary status*: they connect different parties and bring them together in centralized digital spacetimes. Platforms, thus, streamline and mediate activities of exchange: they make it possible that users produce, circulate, and consume content. Naturally, the

precise types of production, circulation, and consumption that are allowed to go round depends on the limitations and boundaries that each platform imposes on users. That is to say, from their intermediary position, platforms are not only streamlining exchange; they are equally actively shaping the boundaries and parameters of which (types of) exchange(s) are precisely possible. Platforms, thus, are highly regulative and steering, and set the rules for which specific actions and types of activity can emerge and which not (Gillespie, 2018; Gorwa, 2019; Grimaldi & Ball, 2021). The censorship that is happening on social media platforms is a case in point, but equally platforms more tailored to the educational sector have specific ways to regulate and streamline what can happen on the platform and what not (e.g., Lewis, 2022).

Third, digital platforms can be characterized by being a *new form of organization* that works through the market rationales of extracting value from the activities of its users. An important feature of digital platforms is arguably their possibility for collecting the data traces of their users and analyzing those traces, both on the individual level as well as on the level of the entire databases. In that respect, literature has analyzed how this so-called ‘dataveillance’ of users by platforms has led to a new form of capital, extracting upon and subsequently monetizing user activities and interactions, oftentimes without their explicit knowledge (Komljenovic, 2021; Zuboff, 2019). Specifically in the education field, one of the most prominent sectors of dataveillance is undoubtedly learning analytics, which are extensively generated through learners’ activities on platforms, and this both on the individual and collective (e.g., classroom) level (OECD, 2021). At the same time, equally in the education sector there is a growing awareness of profiling of students and young children the like, with these data then sold to third party actors for targeted advertisement (Human Rights Watch, 2022). Moreover, as a new ‘kind of firm’ (Robertson, 2018), platforms not only capitalize upon the activities of their users, but oftentimes equally promote or even actively require ‘labor’ of their users to produce content, such as didactic material (Lewis, 2022).

Taken together, these three characteristics help us to develop a better understanding of what platforms are and how they operate, also in the field of education. At the same time, it is important to consider what, within these broader characteristics, might be further distinctive features of digital *education* platforms; that is, why such platforms require dedicated research and investigation from the educational field. An obvious difference between more generic digital platforms and digital education platforms, is, firstly, that many digital education platforms have minors, often very young children, as their users. This not only implies that many of the data being gathered are highly sensitive (Human Rights Watch, 2022), but equally that these young users are particularly vulnerable to platforms’ inscriptions (e.g., what the platform conveys as being a ‘good’ user) as well as to intrusive yet often imperceptible

techniques such as nudging (Decuypere & Hartong, 2022). Secondly, digital education platforms come with a higher general level of ‘pedagogical authority’ than their more general counterparts – particularly if used in contexts of formal education, such as when used to hand in and evaluate assignments (Sefton-Greene, 2021). This is because these platforms become linked to, and are inscribed in, institutionally established as well as socially legitimized pedagogical logics of certification, grading, disciplining, and so on (ibid.). Thirdly, and related to that, digital education platforms commonly bridge formal education and informal home/family contexts, thus mediating their specific ideas of what constitutes good and worthwhile education (including ideas of pedagogical professionalism) across those different spheres. While not all these ideas are necessarily problematic (on the contrary), research still indicates that much EdTech has thus far promoted an understanding of education and learning as ‘accumulated economic currency’ (Means, 2018). Such understanding is particularly visible in platforms (e.g., Apple Teacher; Khan Academy) that produce didactical content themselves (Means, 2018; see also Perrotta et al., 2021; Lewis, 2022).

While all these features of digital platforms in general, and digital educational platforms in particular, show why critical attention to the rising platformization of education is of crucial importance, it is equally important to stress that the transformative power of platforms is not to be thought of in a deterministic manner (Decuypere et al., 2021). Instead, contextual factors always play a crucial role in how (if at all) platforms are being used precisely, and which effects are consequently produced. For instance, based on their professional self-understanding, teachers may decide to resist against the usage of a certain platform or to work only with a couple of its functionalities (e.g., Förschler, Hartong, Kramer, Meister-Scheytt & Junne, 2021). That is to say, and coming back to the importance of understanding platforms as digital, intermediary architectures (instead of as monolithic ‘objects’), platforms are always differentially enacted, and while they may substantially alter educational contexts, they will simultaneously always be framed by these contexts themselves. This ‘double-edged contextuality’ of platformization clearly shows the need to carefully investigate overly generalized theoretical statements (e.g., that the platformization of education automatically and/or necessarily leads to a de-professionalization of teachers), and, instead, to intensively scrutinize the detailed interrelations between the dynamic local enactments of platforms and the (re-)making of different sorts of educational professions and professionalities (Fenwick & Edwards, 2016). At the same time, it equally requires a specific understanding of comparative education platform research, to which we turn next.

Developing a comparative, context-sensitive perspective on ‘platformed professional(itie)s’

For quite some time already, scholars have argued for the need to overcome ‘methodological nationalism’ in comparative education research; that is, to denaturalize territorial spaces as units of comparison, and to instead pay closer attention to the actual and relational enactment of such spaces (beyond others) (Bartlett & Vavrus, 2019; Sobe, 2018). Scholars have accordingly developed alternative, more relationally oriented concepts – for instance, ‘assemblage’ (Peck & Theodore, 2015), ‘polycscape’ (Carney, 2009), or ‘policy fields’ (Hartong & Nikolai, 2017) – to investigate how different forms of context, on the one hand, shape such particular assemblages, and which contexts (for instance ‘the national’) are, on the other hand, actively produced through these processes of assemblage (re-)making (see also Hartong & Piattoeva, 2021). It is important to mention that such approaches do not abandon the idea of ‘national’ systems and their comparison, but that they rather regard such forms of contextualization as relationally (re-)produced, and that they are interested in how specific contextual descriptions attain meaning and legitimacy (e.g., Savage & Lewis, 2018).

Particularly with the increasing platformization of education in its multiscalar, fluid and generative nature, approaches that actively seek to understand such relational and contextual productivity gained further prominence (see for an overview Decuypere, Hartong & van de Oudeweetering, 2022). In that regard, we see an increased interest in how platforms, on the one hand, overcome traditional contextual borders or images (e.g., the territorially located school), and, on the other hand, simultaneously create new contexts/contextual features themselves (ibid.; van de Oudeweetering & Decuypere, 2022). At the same time, research found clear evidence that traditional contextual images continue to substantially matter for the shaping of such new digital contexts (e.g., the mostly nationally or regionally framed political-economic contexts in which EdTech evolves; Cone et al., 2022; Decuypere & Lewis, 2021). It is exactly this interplay that we equally outlined as one of the key features of education platforms above: platforms bring things (actors, policy levels) together in new (digital) ways, while they are simultaneously always inscribed with a specific production context *and* are ongoingly (re-)enacted through multiple forms of contextual usage. The methodological challenge is, then, to capture this complex, multidimensional interrelation, for which comparative approaches are crucial (see also Wallner, Savage, Hartong & Engel, 2020). Such context-sensitive comparative approaches are ‘inventive’ (Gulson et al., 2017) in nature: they take various forms and shapes, and ‘zoom in’ on different thematic foci, through which the aforementioned multidimensional interrelations are investigated. In this special issue, the

common theme of all contributions is put on educational professional(itie)s, yet the ‘entry points’ as well as the specifically adopted comparative perspective substantially vary.

In the contribution of *Steven Lewis* and *Mathias Decuyper*, ‘*Out of time*’: *Constructing teacher professionalism as a perpetual project on the eTwinning digital platform*, the emphasis is put on a European platformization context and its impact on (re-)shaping teacher professionalism in a ‘delocalized’, digital, yet still locally enacted manner. In contrast, the study of *Vito Dabisch*, *The practices of data-based governance: German school supervision, professionalism and datafied structurations*, problematizes and compares the interrelation between different subnational platformization contexts of the federal German system and their interrelation with school supervisors’ professionalism. The contribution of *Jennifer Clutterbuck*, *The role of platforms in diffracting education professionalities*, investigates the profession-related impact of the OneSchool platform in the context of Queensland, Australia, but, and different from the former two studies, performs a comparison between different stages of platform development/usage, as well as between different ‘levels’ on which different educational professionals (state department personnel, principals, and ICT teachers) are (re-)situated. Lastly, the study of *Sigrid Hartong* and *Jamie Manolev*, *The construction of (good) parents (as professionals) in/through learning platforms*, discusses the rising platformization and construction of parents as education professionals through comparing two different platforms, one characterized by an Anglo-American, yet globally oriented design and usage context, the other one much more locally framed and only used in Germany.

Taken together, through this comparative case study approach (Parreira do Amaral, 2022), this special issue helps to further develop both a micro- and a macro-level understanding of the manifold interrelations between platformization and educational (de- and/or re-)professionalization, whilst at the same time providing fruitful examples of how comparative, context-sensitive research of educational platformization can look like. In his afterword to this special issue, *Carlo Perrotta* takes stock of the insights generated in this special issue, and tries to sketch some outlines of a future research agenda on platformed professional(itie)s.

The platformization of ‘traditional’ and the emergence of ‘new’ educational professional(itie)s

In this section, we discuss existent research on the transforming professionalism and professionalism of different actors involved in education and schooling, and show how the articles in this special issue contribute to a further development of the field. The special issue hereby broadly addresses two different sorts of professionals: on

the one hand those who can be described as more ‘traditional’ education professions; on the other hand, those who have ‘newly emerged’ as educational professionals in an increasingly platformized landscape. While the special issue includes teachers, school leaders and supervisors as examples of the first group, it uses the example of parents to discuss the second.

As already briefly noted above, there is extensive literature on how ongoing governance transformations have impacted the *teaching* profession. Large parts of that literature have framed and discussed such impacts in problematic terms; that is, as downgrading and deteriorating teachers’ professionalism over time (e.g., Acton & Glasgow, 2015; Sleeter, 2008; Wilkins, Gobby & Keddie, 2021). A very influential argument in this debate is that teachers’ professionalism has been heavily impacted by a growing performativity culture that comes along with increased productivity, output, and quality expectations, but also with rising control as well as job insecurity (Ball, 2003). Datafication has thereby been identified as a key mechanism of rising control through digital means; that is, increasingly refined data systems becoming anchor points through which teachers should surveil and drive pedagogical interventions on students, all the while being monitored themselves (Holloway & La Londe, 2021; Roberts-Holmes & Bradbury, 2016; Manolev, Sullivan & Slee, 2019). Specifically with respect to platforms, initial research has so far evolved along similar lines – emphasizing the withering of teacher autonomy and discretion – but has equally pointed to the emergence of new ‘images’ of professionalism. For example, Ideland (2021) argues that the figure of the teacher professional is being actively reconfigured by said platforms as an EdTech entrepreneur who possesses associated professionalities such as platform agility, flexibility, creativity, and 24/7 availability.

In a similar regard, we can discern a growing body of research that stresses the aforementioned context-specificity of platformization in educational practices (e.g., Cone, 2021; Decuyper, 2021). This body of research clearly showcases the importance of fine-grained, empirical analyses that show how the professionalism of teachers is in the process of being reformed and reworked by digital education platforms, and this both in negative and in positive ways. As far as the latter is concerned, Kerssens and van Dijck, for instance, argue that in a platformized educational system, the professional autonomy of teachers can actually be fostered under the condition that teachers possess the capacity to “take informed decisions about which app, learning management system, or infrastructural service best suits their specific needs and educational values” (Kerssens & van Dijck, 2021, p. 259). However, in order to develop this capacity, teachers must have the techno-pedagogical skills with regards to how – if at all necessary – to combine different educational platforms aligned to *their* pedagogical framing (ibid.). Another example that shows the importance of researching local platform enactment, is a study of two secondary Australian schools

by Selwyn, Nemorin and Johnson (2017). The study shows how digital technologies and platforms might standardize teachers' work, or might lead to practices of increased monitoring, controlling, and work intensification. However, next to such malicious effects on teacher professionalism, the study equally clearly shows that many teachers actually possess a lot of agency and can actively shape how to use digital technologies, and as such are (potentially) equally actively *in control of* their engagement with platforms. In sum, it is important to stress that the roles that platforms play in giving shape to teachers' professionalism, are multiple and, as such, a matter of differential enactment.

At the same time, while the outlined studies have resulted in important initial knowledge about the increased platformization of schools as workplaces, what has thus far not been thoroughly investigated, is how digital education platforms *themselves* increasingly operate as workplaces for teachers to construct and frame their teaching. It is precisely this research gap that *Steven Lewis* and *Mathias Decuyper* seek to address in their contribution, while equally investigating the impact that Europeanization has on these recontextualizations of the teacher workplace. More specifically, they analyze the *eTwinning* platform, a platform financed by the European Commission that aims to 'twin' teachers around classroom development in a digital and international-collaborative manner. While the platform providers emphasize that *eTwinning* strengthens professional development through creating a European context of digital exchange, the study shows how, at the same time, the platform promotes a very specific understanding of professionalism, and mediates this understanding through its inscribed design to its users. Lewis and Decuyper describe this understanding as simultaneously *projectified* – that is, teacher professionalism as continuous self-improvement *through*, and *as*, projects – and *platformed* – that is, teachers' projectification being steered through ongoing engagement with the digital platform. The article shows in detailed manner how exactly the form of the project takes up a pervasive role on the platform, and identifies the mechanisms that actively (re-)shape teachers' professionalism.

A second 'traditional' educational profession addressed both in the literature and in this special issue, is the figure of the *school leader* (who might be principals, but also school district heads), whose professionalism is equally found to be significantly impacted by increasing platformization. The choice of which education platforms (not) to adopt in line with local contextual needs is, in other words, not only applying to teachers, but equally to school leaders, who are not only crucial in the 'successful' governance of schools, but equally in protecting (and improving) pedagogical professionalism (see also Kerssens & van Dijck, 2021). Many of the aforementioned evolutions around the transformation of the teaching profession are equally valid for school leaders, of whom it has been stated that they have become increasingly

responsibilized and monitored in terms of school accountability, performance improvement, teacher and student dataveillance, or – more recently – innovative digital school development (e.g., Heffernan, 2018; Sugrue, 2009). Many of these shifts are reported to have resulted in increasing professional ‘tensions’ experienced by school leaders, whose interest equally is to protect the pedagogical autonomy of their schools and teachers (e.g., Imants, Zwart & Breur, 2016). Such tensions are equally related to what the literature has described as a need for digital or data literacy among school leaders, that is, to make informed decisions with regards to data usage and data integration, and having the adequate professional judgement in order to do so (Schildkamp, 2019; Selwyn et al., 2017).

The contribution of *Jennifer Clutterbuck* substantially adds to this research on the impacts of platformization on school leaders. Investigating the creation and implementation of the OneSchool platform in Queensland, Australia, Clutterbuck once again shows the importance of adopting a contextual gaze. She does so by disentangling the specific coalescing of more traditional and new sorts of professional knowledge that is required when new platforms emerge. In the case of OneSchool, one example of such coalescing is the original assembling of the platform development team within the centralized state department. The paper shows how a particular, seemingly progressive, group of school leaders (and teachers) was actively ‘brought together’ and turned into so-called ‘subject matter experts’ and business analysts for the design of the platform. The interview material equally illustrates, however, that even though many of those leaders indeed had been actively engaging in local (yet often fragmented) platform development, most of them had done so to counteract malfunctioning state-authorized data systems in place at that time (and, thus, to secure their professional autonomy). As a result, they felt partly alienated by their repositioning as state platformization experts, while at the same time equally feeling how their professionalism was transforming. A second example of ‘platformed school leaders’ discussed in Clutterbuck’s paper refers to when OneSchool became actually implemented in Queensland schools. Here, the article highlights the reshaping of principals’ professionalism around the required granting and auditing of platform ‘roles’ (e.g., the role of financial delegation) and concomitant access rights. While Clutterbuck emphasizes that these roles and access rights brought new (professional) acknowledgement to those platformized activities and were partly very positively received, the paper equally reports about new tensions regarding how professionals became substantially repositioned around the actual data they were allowed to ‘see’ (something strictly monitored by the platform and the state). This new ‘distribution’ of access rights triggered what Clutterbuck describes as both de- and re-professionalization with respect to how these professionals were involved in ‘platform care.’

Finally, a third type of ‘traditional’ educational professional highlighted in this special issue, is the figure of the *school supervisor*. Just like school leaders, school supervisors play a very decisive role in the shaping and evaluating of education systems all over the world, and literature has already clearly indicated that the growing influx of digital data has strongly transformed the profession of the school supervisor/inspector, both in different national contexts and at a more global scale. Ozga (2016), for instance, has argued that interactive, digital data have gained huge influence in the professional judgement of school inspectors in the UK. Other studies report similar results, stating that, for instance, *data templates* are increasingly perceived as central anchor point to undergird and facilitate the school evaluator’s professional judgement (e.g., Hall, 2017). Yet, we should be mindful that much of this critical research stems from Anglo-American, high-stakes accountability contexts, in which centralized platform systems and data flows between classrooms and supervision have become extremely elaborated (see also Hartong, 2021). Indeed, when looking into other, less accountability-oriented systems, we find a lot more debate around how rising datafication and digitization has caused multiple, oftentimes contradictory professional (self-)understandings, which also includes a substantial amount of professional resistance to reforms (see, e.g., Hangartner & Svaton, 2020, for the Austrian case).

The article of *Vito Dabisch* contributes to this group of work that seeks to understand how supervisors’ professionalism has been changing in the deliberately low-stakes-accountability system of Germany. Even though this system has equally undergone substantial expansions of datafication and platformization, the discourse around accountability-oriented data usage is much more controversial. As a result, in the context of Germany, the actual data systems and platforms deployed are oftentimes much more fragmented. This is why Dabisch focuses less on platforms, but rather on what he describes, in a more encompassing manner, as ‘datafied structurations’; a more general conceptualization of digital tools that are ordering and visualizing school data. His study compares these datafied structurations in contrast to school supervisors’ actual practices and professional self-understandings. In doing so, the study provides in-depth insights on how technological context-inscription, regulations, and professional practices interrelate. Despite the clear role and impact of these datafied structurations, Dabisch shows that a substantial amount of agency is equally residing in how exactly these structurations are used, changed, or precisely resisted by school supervisors. What matters most for all supervisors, however, is what they describe as contextual knowledge gathered from school visits as well as direct interaction with principals. Interestingly, the study equally finds evidence that ‘newer’ forms of technology – such as interactive, centralized platforms – do not necessarily impact professional judgement more than, for instance, standard PDF

files or irregularly sent email data. Instead, and crucially, the study shows that what matters more than the specific technology used, is how this usage is ‘framed’ within broader formal regulations.

As noted above, the special issue not only deals with professions that are most commonly associated with the education field, but also discusses ‘new’ types of professions as they emerge in contexts of increased platformization. According to us, the detailed studying of these newly emerging types of educational professions, as well as new forms of educational professionalities, constitutes a huge research gap that has only started to be given substantial consideration. For instance, such studies have been investigating the ‘makers’ of platforms. Even though, as the study of Clutterbuck shows, platform design as such frequently happens within traditional educational contexts and involves a range of traditional educational professions (see also Hartong, 2021), there equally is a growing range of new professions – including platform programmers, user data analysts, data dashboards developers, platform brokers, school consultants, and employees working in big EdTech companies that provide educational data infrastructures – emerging that shape the platformization of education (e.g., Perrotta et al., 2021; Williamson et al., 2020). As stated, such research is still in its inception phase, including questions around the prevalence, impact, and actual ‘status’ of such actors as new educational professions.

Importantly, when talking about ‘new’ professional(itie)s, we should equally shed light on actor groups that might have already participated in education for a long time, but that have thus far, not commonly been associated with educational (de-)professionalization. One of the most important of these actor groups that has become highly affected by platformization, are parents. In their contribution, *Sigrid Hartong* and *Jamie Manolev* provide an in-depth discussion of parents as ‘new’ platformed professional(itie)s, looking into how parents are designed, made visible and normatively regulated (as being/becoming professional) in and through platforms. As they show, while parents are indeed not yet systematically researched in the field of critical platform studies, in the more general field of parenthood studies, there has been a longer debate already on the ongoing ‘educational professionalization’ of parents in relation to education governance transformations. Much of that debate is very critical in nature, and shows how parents have been facing rising pressure to, on the one hand, optimize their children’s education (e.g., through dataveillance), while, on the other hand, being expected to continuously seek expert advice and to partner with other educational professions in order to further improve their parental support activities. Consequently, as Hartong and Manolev argue, bringing both research fields together can offer substantial guidance in a context-sensitive investigation of ‘platformized’ parents. Their article does precisely this, by analyzing two learning platforms (ClassDojo and Antolin) as examples. Like the other contributions, this study

hereby shows that platforms at once clearly ‘do’ something to parents *and* mediate a specific professional understanding to them, but that they do this in very distinct ways: ClassDojo operates with a direct parental portal, whereas Antolin more indirectly addresses parents to participate in and on the platform. Similar to what Dabisch shows in his study on school supervisors, the paper argues that how digitally ‘elaborate’ a platform is, does not necessarily relate how it is impactful for parents. At the same time, the study shows a wide range of actual parental platform *practices*, independent from how parents are inscribed into the platform interface.

Conclusion and future research

The goal of this special issue is to unpack what happens to educational professions, and various educational professionalities, in our current context of increasing educational platformization. While all contributions in this special issue pick a ‘human’ entry point to discuss matters of ‘platformed professional(itie)s’, they all show that platforms themselves are increasingly developing agency of their own, meaning that they do way more than merely influencing what human professionals (traditional and new) do. Instead, as different case studies in this special issue indicate, this agency manifests through automated decision-making (e.g., the automated parental notes sent by the ClassDojo platform, or the automated access control of the OneSchool platform), which is framing, encouraging, but also limiting what professionals (should/not) do. This automated decision-making has, over the last few years, also been increasingly discussed in the literature, which is – little surprisingly – particularly related to the ongoing advancement of machine learning technology (e.g., Knox, Williamson & Bayne, 2020; Decuypere & Hartong, 2022). In other words, platform algorithms are found to increasingly learn and optimize themselves which decisions to make related to a specific goal (such as nudging students towards a right answer). It seems, consequently, not unreasonable to discuss in how far arguments that we know from the debate around human (de-)professionalization might equally be applicable to such machine learning contexts, and how professionalization as a concept needs to be developed further in an age of *Artificial Intelligence* (AI). While such questions are beyond the aims and scope of this special issue, we argue that the knowledge gathered in this collection can still form a fruitful foundation to develop a more fine-grained understanding of the complex and ever-changing interplay between educational platformization and (de-)professionalization.

It is precisely at this point that *Carlo Perrotta’s* afterword to this special issue offers directions and suggestions to push this emerging research field forward. His afterword starts from the argumentation that even though platforms are indeed always locally enacted and contextually embedded, at the heart of their functioning

still lie logics that seek to capitalize upon the work of educational professionals and extract value from it. Based on this insight, Perrotta argues that educational professionals will not only be impacted by platformed logics and understandings in the future, but that many of these ‘future’ developments (such as automated decision making) are indeed already part and parcel of many of today’s educational practices. Even though such practices of automation might seek to transform and improve educational practice in the name of managerialist accountability and efficiency, Perrotta argues – in a very nuanced manner – that such practices might at the same time decrease personal and social forms of accountability, qualities of professional judgement, as well as activities that might have intrinsic pedagogical and educational meaning. Responding to these evolutions, and in drawing this special issue to a close, Perrotta offers two final insights that form the contours of a new research agenda on platformed profession(alitie)s. First, he shows how it is an inherent feature of platforms that they curtail and diminish the ‘decision space’ of educational professionals, and that it is the task of future research to, in that respect, find ways in order to reclaim this decision space and safeguard ‘meaningful’ educational work (in all the connotations of the word). Second, and as an ultimate hopeful message, Perrotta equally offers guidelines that can assist researchers in (re-)designing new ways in which education professionals can navigate this complex platform ecology, in order to be able to learn to dwell, and to find and make new educational ‘homes.’

Note

1. This work was supported by the German Research Foundation (grant number HA 7367/3-1) for Sigrid Hartong.
2. In many regards, such calls mirror developments in the broader field of organizational studies, which for instance investigated the ‘transforming professional’ in terms of reorganization (e.g., ‘good’ working hours), restratification (e.g., the emergence of networked elite professionals with highly specific knowledge), or relocation (e.g., the growing importance of professional time spent in ‘home office’) (Noordegraaf, 2016). Some of that research has in the last years also specifically addressed the impacts of digitization and platformization, including their ambivalent impacts on specific professions and professionalities (e.g., Pareliussen, Æsøy & Giskeødegård, 2022).

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‘Out of time’: Constructing teacher professionalism as a perpetual project on the *eTwinning* digital platform

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Abstract

This paper seeks to understand what digital schooling platforms do to teacher *professionalism*; that is, the combination of professional knowledge, discretion and responsibility that enables a teacher to be professional. Specifically, we explore how the European Commission’s (EC) teacher professional learning platform *eTwinning* promotes a *projectified* (i.e., project-focused) and *platformed* (i.e., largely occurring on digital platforms) version of teacher professionalism. Informed by recent thinking around ‘projectification’; that is, the ability of the project form to shape work practices, as well as the topological nature of timespace within a project, we argue that projectified teacher learning and professionalism are now constituted through platform dynamics as a perpetual *project-in-itself*. As such, the projectified teacher is left simultaneously *in-time* (i.e., within the bounds of the project timespace) and *out-of-time* (i.e., out of possibilities of progress that can exist outside of the project), and thus faces the insuperable task of never-ending self-improvement through and as the project form (*teacher-as-project*).

1. Introduction

Faced with the increasing ‘platformization’ of schooling and society (Decuyper, Grimaldi & Landri, 2021; van Dijk, Poell & de Waal, 2018), as well as the growing significance of digital data within education (e.g., Clutterbuck, Hardy & Creagh, 2021; Decuyper et al., 2021; Hartong, 2021; Lewis, 2020b), this paper seeks to understand the new forms of teacher professionals made possible by *digital schooling platforms*. While research to date has often focused on the ability of digital platforms to link people and places together via data infrastructures (e.g., see Decuyper,

2019; Gulson & Sellar, 2019; Hartong & Piattoeva, 2021; Lewis, 2020a; Lewis & Hartong, 2021), critical attention is increasingly being paid to platforms in terms of how they have the potential to fundamentally change what it means to *be* a teacher; how they shape notions of ‘effective’ teaching professionals, such as undertaking professional learning; and, finally, how these reconfigure the teaching profession (e.g., see Bradbury, 2019; Lewis & Holloway, 2019; Williamson, Bayne & Shay, 2020).

Building on this existing work, our purpose here is to explore what digital schooling platforms do to teacher *professionality*; that is, the combination of professional knowledge, discretion and responsibility that enables a teacher to be a professional and undertake professional practice. Despite technology exerting considerable influence across a range of professions (and, relatedly, professionals), our particular focus here is the implications of digital platforms for how teacher professional practice, responsibility and learning are being (re-)constituted. We advance the argument that digital schooling platforms reshape teacher professionalism by investing in digital organizational forms: investing in specific ways of thinking about, and acting upon, desired ways of organizing education (Decuyper et al., 2021; Thévenot, 1984). More specifically, through an inquiry into the European Commission’s (EC) teacher professional learning platform, *eTwinning*, this article analyses one such example of a dedicated digital organizational form: the *project*. By ‘project,’ we refer specifically here to a temporary, activity-focused enterprise with clear aims that is usually established to achieve certain known objectives or outcomes (see Büttner & Leopold, 2016, p. 43). First launched in 2005 and funded by the EC’s *Erasmus+* program, *eTwinning* has become a flagship education initiative for the EC, reportedly connecting more than 215,000 European schools and more than 945,000 European teachers via its online professional learning community (*eTwinning*, 2021a).¹ Drawing on our previous work into digital education infrastructures and associated modes of governance (Decuyper, 2021; Decuyper & Lewis, 2021; Lewis, 2020b), our purpose with this paper is to explore the various means by which this digital schooling platform promotes a particular version of teacher professionalism that is thoroughly *projectified* (i.e., based on the project form) and *platformed* (i.e., occurring in the digital space of the platform).

To this end, we approach the platform as a ‘situated place,’ insofar as it is a specific digital infrastructure situated within a broader environment and broader strands of thinking that impact how the platform is being shaped (Decuyper, 2021; Decuyper & Lewis, 2021). More particularly, drawing on recent thinking around ‘projectification,’ or the ability of the project form to shape work practices (Berglund, Lindgren & Packendorff, 2020; Fred, 2020; Godenhjelm, Lundin & Sjöblom, 2015; Jensen, Thuesen & Gerald, 2016), we investigate how the platformization of school-

ing contributes to the remaking of teacher professionalism through eTwinning. Although projectification and its impacts have admittedly been explored at the level of education more generally (see Vanden Broeck, 2020b), to our knowledge, it has arguably *not* yet been considered systematically at the level of the teacher and teacher professionalism. Indeed, we argue that a projectified teacher professionalism is now increasingly constituted as a perpetual *project-in-itself*, with this mechanism uniquely enacted by and through platform dynamics.

We conclude the paper with the proposition that teacher professionalism is now being governed in eTwinning through new temporalities. Such teachers find themselves ‘out of time,’ stuck in the never-ending task of completing an infinite series of projects. Moreover, the constitutive properties of the project form mean that time itself becomes reoriented to the project, meaning teachers are forced to occupy and repeat an infinite series of project time-space(s). Teachers are thus left to repeatedly perform the same (projectified) actions in pursuit of an ever-receding horizon of professional self-improvement and, ultimately unattainable, perfection.

2. Theoretical framework

2.1 The project form

In recent decades, the *project form* has emerged as a central organizational trope (see Kalff, 2017). Projectification, therefore, entails the proliferation of this “temporary, future-oriented, purposeful, time-limited organizational for” (Jensen et al., 2016, p. 25). Indeed, the ubiquity of the project and its associated logics – what Jensen and colleagues (2016) compellingly describe as *the projectification of everything* – reflects not only that there now is an increasing number of projects, but also that there is a growing reliance upon such projects to help coordinate any number of institutional or individual spaces. The significance of projectification as a shift towards “non-permanent structures” thus extends beyond mere administrative or logical changes, in which actors are encouraged to adopt “practices, assumptions, values, beliefs and rules associated with projects” (Fred, 2020, p. 352). Rather, projects are now an omnipresent feature of contemporary life (including education), shaping both what we do and how we do it, as well as informing the more fundamental ontological concerns of who teachers and students are deemed to be within the ‘project society’ (Jensen et al., 2016). Projects, then, are not mere technical tools for the organization of activities but have instead become instruments that challenge and reshape educational practices and ideals (Ylijoki, 2016).

We can see the emergence of the project as a generalized organizational solution to all manner of institutional problems (e.g., an increased need for workforce flexibility to respond to uncertain market or labor conditions), but also, interestingly, the

development of *specific* projects as solutions to specific problems (e.g., developing vaccines and treatments during the COVID-19 pandemic). Such an orientation introduces a significant solution-focused and temporally limited logic to projects, whereby projects are brought into existence for only so long as they are required to solve a given problem. Furthermore, the project form is increasingly used as a means of governing the public sector (Godenhjelm et al., 2015) in general, and the educational sector, in particular (Vanden Broeck, 2020b). This is perhaps best typified by the EC's Erasmus+ program, which supports education, training, youth and sport activity in Europe via the funding of *projects*, but which, notably, financially supports educational activities *only if* they are presented as projects (ibid., p. 664). More broadly, it has been suggested that projects now arguably comprise the *modus operandi* of the EC, insofar as it provides the means of implementing a large proportion of its policy agendas (Godenhjelm et al., 2015).

Developing the constitutive nature of the project form, projects can be said to exist within a series of “self-established causalities, moving from a problem (cause) towards its solution (effect)” (Vanden Broeck, 2020b, p. 669). Any object or theme can serve as the putative target of a project, providing, of course, that such an object “can be formulated as a problem that will be solved” (ibid., p. 670). Projects are therefore amorphous in terms of their specific form and potential: they are at once indistinct phenomena that nevertheless have a very particular way of organizing, constituting so-called ‘formless forms’ that continuously come into and then fade from existence (Vanden Broeck, 2020a, p. 845). While it is impossible to predict the exact shape, a project will take in pursuit of a solution, it is possible to determine the shaping conditions or parameters within which the project will emerge and be practiced. For instance, at least in professional contexts, a project must work along specific rules and within rigid structures, and yet, at the same time, it offers the freedom for any given project to flexibly unfold within the parameters of these rules (Berglund et al., 2020; Godenhjelm et al., 2015). In the professional fields, the project form can thus only exist in a creative tension between two seemingly contradictory positions: on the one hand, embracing professional innovation and flexibility; while on the other, codifying standardized operating procedures, structures and temporalities (Fred, 2020, p. 357). Herein lies the ultimate paradox of professional projects, insofar as they are meant to enable versatility to respond to changing environments and contingencies, and yet they provide an exceptionally prescriptive and standardized approach to perceiving and approaching problems *as projects*.

2.2 Projects as topological forms

Beyond the constitution of projects through problems, and the associated rendering of problems in such a way as to be amendable to intervention through projects, pro-

jects equally have distinct spatio-temporal qualities that are intrinsically linked to project activity. Jensen et al. (2016, p. 22) argue in this respect that projects possess four distinct characteristics: *i*) what is done (*activity*); *ii*) where it is done (*space*); *iii*) when it is done (*time*); and *iv*) with whom it is done (*relations*). Three of these project characteristics (space, time, relations) are considered thoroughly subordinate to *activity*, which itself has the power to “decide and format space, time and relations” (Jensen et al., 2016, p. 26). In many respects, the priority granted to activity necessarily emerges in response to the needs and contingencies of projects; for instance, some activity or outcome (a ‘milestone’ or ‘deliverable’) needs to get done within a certain set of time-spaces and relations and can be made material through visualizing activities via Gantt charts, or through delimiting the sorts of activities that can be done in the confines of virtual time-spaces, such as digital platforms.

Moreover, we consider the project form to be emblematic of the increasing significance of spatiotemporal continuity for economic, political and cultural life. This resonates with projects as formless forms, whereby time and space emerge in-context and are constituted through social relations (Lury, Parisi & Terranova, 2012; in education, see Decuyper, 2021; Gulson & Sellar, 2019; Hartong, 2018; Lewis, 2020a). Given this enfolding together of space, time and relations *vis-à-vis* the activities of the project, we consider projects to be archetypal relational, or *topological*, objects. By this we mean that projects are at once mutable and flexible enough to tolerate a substantial amount of deformation (see Martin & Secor, 2014): a fleeting and unique constellation of activity-time-space-relations brought together solely for a specific project(-ified) objective, which then dissolves upon its completion. Yet, despite this dynamism, there is never any substantive change in the form of the project (going from work package to work package and providing ‘deliverables’ along the way), even as its specific features (i.e., its activity, space, time and relations) necessarily shift to accommodate the requirements of a particular goal or problem.

Finally, the embedding of time-space within the project itself constitutes, in turn, a series of emergent project times and project spaces, or what we describe as *project timespace*: the experience of topological time-space by those *within* the project (see Thrift & May, 2001). We offer the concept of ‘project timespace’ to emphasize how the clear temporal boundaries and topological nature of projects means time will be experienced differently by those within a project than by those outside of it.

2.3 The projectified self

With the project so prevalent and ‘indispensable’ for coordinating work and society, it is perhaps unsurprising that the project form and logics also exert an affective (and ontological) influence, thereby helping to constitute what Kalff (2017) terms the *projectified self*. Even though the ‘projectified self’ probably stretches way beyond

professional contexts, Kalff's focus is specifically on professionals and 'knowledge workers.' He contends that, within the professional realm, the project here assumes the role of a biography or life plan for professionals who are shaped by the 'subjectivising antinomy of predictability and flexibility' (Kalff, 2017, p. 10), in which ongoing transformation and objective deadlines are inescapably embedded within the individual. The projectified self thus helps reify both the project form and, at the same time, the professional identity of the project worker (see also Lindgren & Packendorff, 2007). Central to this projectified ontology is the need to *be active* as the undergirding premise of professional identity: "if you are not active, you become invisible or, at best, just *boring*" (Jensen et al., 2016, p. 27; emphasis added).

While each individual accomplishment is itself important for the projectified self, what ultimately matters most is the cohering narrative of successive activities and successes, and especially the ability to 'project' (i.e., communicate) this tangible value to others. The project form thus also shapes how individuals see themselves, both objectively and in relation to others, in project terms, with self-worth now predicated upon one's ability to produce, and then *project* oneself as a "self-controlling, self-improving, self-commercializing, life-compartmentalizing, and deadline driven" human being (Berglund et al., 2020, p. 367). We see the multiple interpretations of the verb 'to project' is especially telling here, meaning not only to *broadcast* but also, importantly, to show oneself *as a project*. In short, it captures the shaping of reality, whereby projectified individuals seek to be understood (by themselves and others) through the lens of the project form.

Over and beyond our interest in how the project form aims to constitute projectified individual teachers, our interest in this article is equally more generally on how the project form and platform environment (re-)shape an idealized notion of the general 'figure' of the teacher and teaching practice. While these clearly have direct implications for the subjectivity of individual teachers, it is explicitly *not* our intention here to comprehend the personal effects of such changes (i.e., how *specific* teachers are shaped by and through projects and platforms). Rather, we situate our work, and the effects of the project form on teacher professionalism, in conversation with a now extensive literature that has sought to document and problematize how teacher professionalism has been actively reconstituted in response to certain constellations of discursive and material conditions (e.g., see Brass & Holloway, 2021; Hardy & Melville, 2019; Moore & Clarke, 2016; Sachs, 2016). As Holloway (2021, p. 412) notes, "constructs like 'teacher quality' and 'professionalism' are always being (re)made as products of available discourses at a particular time and place." To this discursive focus, we would also add digital technologies and practices, as well as the platform interface itself. Taking the discursive conditions associated with the eTwinning platform as our starting point, our focus is how the project shapes the

constitution of teacher professionalism, and thus how a projectified teacher *ideal type* is constructed on the platform as something to strive towards and emulate.

3. Methodological and analytical approach

As a starting point, we argue that the close association between projects and platforms readily evident in eTwinning is far from coincidental (another European example is the EC's *Erasmus+ Project Results Platform*), which suggests a close linking between the practices and logics of projectification and platformization. To that effect, the aim of this article is to study projectification in a platformed environment and, thus, to come to an understanding of how processes of projectification and platformization come empirically together on eTwinning. As we have argued above and elsewhere (Decuyper & Landri, 2021; Lewis, 2020b), both the project and platform form are characterized by 'edges' that constrain user actions, and yet also allow a significant degree of user choice and freedom within these set boundaries. Projects and platforms thus "*set the stage for actions to unfold*" (Bratton, 2015, p. 47; emphasis original); that is, they enable a sense of "ordered emergence" (ibid.) via the imbrication of adaptability and rigidity. Attending to the interconnectedness of project and platform thus enables a focus on how each recursively informs the other and, in turn, how these project(-ified) and platform(-ed) logics collectively shape emerging forms of digital governance and teacher professionalism.

Rather than focusing on the entire experience available to registered *eTwinners* (as the platform addresses its users) to analyze the ideal type of teachers constructed on the platform, we consider only the publicly visible elements of the platform; that is, those parts of eTwinning designed to appeal to *prospective* users. We intentionally *do not* consider how the platform operates once a user logs into the service as an accredited eTwinning user. Distinguishing between the different versions and features of the platform (i.e., those available to the public versus those restricted to private users) arguably requires the development and practice of a nuanced version of platform analysis (Bratton, 2015; Decuyper et al., 2021). Our efforts in this specific article are directed at purposefully considering a dedicated constituent part of the platform as one specific form of a snapshot (in time *and* space), and thus emphasizing the situated and socio-spatial dynamics of digital platforms (Bratton, 2015; Piattoeva & Saari, 2019). Building on a broader research project that seeks to account for the situated, processual and topological nature of digital platforms and infrastructures, we refrain from extending the analytical scope of this study *too far*, and instead limit ourselves to a *slow* analysis of the platform, focusing in this study on the liminal space of what happens on the platform before logging in: when one is already *on*, but not yet *in*, the platform (Decuyper & Lewis, 2021). We have therefore only included

content that is available *without* having to access the *eTwinning Portal*, a gatekeeper website that can only be accessed via eTwinners' accredited sign-in details.² We argue that the form of teacher professionalism attracted to and encouraged by the public face of eTwinning becomes a key governing aspect of the platform (*ibid.*).

Building on our efforts to undertake 'slow' platform analyses, we would also note the methodological benefits that might come from not 'logging in' too soon. Often, users can sign-in with their personal account details from the likes of Google, Apple, or Facebook when accessing third-party platforms. By contrast, eTwinning *does not* allow this: users must first be approved by the NSS (National Support Service) in their respective country before they can access the password-protected sections of the platform. While this limits what a researcher or other member of the public can readily see, it does enable one to focus more intently on what *can be seen*, rather than being overwhelmed by either too much material or, alternatively, a desire to observe too many facets of the platform at once (Decuyper, 2021). Despite the speed and instantaneous manner by which digital platforms and data are frequently accessible, we contend that platform analysis is most productive when it is slow and methodical, lest we risk missing significant features of the platform and, in turn, its ability to constitute forms of digital education governance and educational professionalism.

Our research here adopts what Decuyper et al. (2021, p. 2) describe as a critical platform gaze: "an analytical stance that approaches platforms not as neutral 'digital tools,' but ... as connective artefacts constitutive of, as well as constituted by, active socio-technical assemblages." Putting this gaze to practice, we first conducted Internet searches to provide an initial overview of eTwinning and collected all publicly available information on the eTwinning website (<https://www.etwinning.net/en/pub/index.htm>), including webpages and embedded multimedia content, such as videos, infographics press releases. In this way, we were able to work across most of the platform elements to methodically collect publicly available materials for later analysis. Finally, we conducted multiple read-throughs to collect analytic memos (Saldaña, 2013) regarding instances where eTwinning was used to *i*) mobilize new concerns and priorities amongst participating users, and *ii*) shape teacher professionalism. These segments were then extracted and subjected to subsequent rounds of analysis, using our theoretical framework to analytically track the ways that eTwinning contributed to the promotion of particular schooling discourses, practices and teacher subjectivity within teacher professional learning.

4. Platforms, projects and educational forms

Our research concerned how certain projectified logics and practices are evident within eTwinning (and vice versa), as well as how these projects and platforms

constitute new spatio-temporalities – i.e., project timespaces – for their participants. Given the close link between projects and platforms and our attendant methodological approach, our analyses focused specifically on two complementary aspects of eTwinning: *i) platforming the project*, or the ways that technical features of the platform shape how projects are practiced as distinctively *educational* projects; and *ii) projecting the platform*, or how project logics and practices recursively shape technical elements of the platform.

4.1 Platforming the project

4.1.1 Embedding the project: Staging teachers


Twinning schools, where schools connect with other schools that are geographically distant, is a well-established practice. However, twinning schools via digital means is a relatively new phenomenon, and it is exactly what the eTwinning platform aims to achieve for European schools. Moreover, the eTwinning platform aims to make such connections possible through the project form: eTwinning is a platform where almost all activities are understood in terms of undertaking projects (see Figure 1). In this section, we discuss the various ways and support initiatives in which the platform embeds projects.

In that respect, it is important to argue that first, eTwinning states very clearly that the platform is designed not merely to foster interaction between teachers, but that it is equally a space where teachers can develop professionally. To do so, the platform focuses on the facilitation of project work and, at the same time, embeds this project work in a broad program of professional development initiatives, such as *training for future teachers* (see equally below). Including such professional learning events in initial teacher training provides “a complementary strategy to mainstreaming eTwinning” and is done by “engaging with trainee teachers” (eTwinning, 2019). Importantly, these training events can only be followed and accessed by teachers whose HE institution has a formal agreement with the NSS: the teacher training area of eTwinning is “restricted to a limited number of Institutions, who must have a formal agreement with their country’s NSO” (ibid.). Second, the platform offers several *online courses* as professional development initiatives. eTwinning online courses are

aimed at addressing the needs of the eTwinning community in the area of online moderation, teaching and learning. ... Online Courses are *led by a group of experts*, and include active work and discussion among teachers. ... You can get a certificate from the participation in this event. (eTwinning, 2016b; emphasis added)


Figure 1: Getting started on eTwinning


8 easy steps to set up a project!



1

REGISTER!
on eTwinning!





2

Go to **eTwinning Live**, especially the **PARTNER FORUMS** where you can check the ideas proposed by other teachers and answer their posts. Or be proactive and **post your own ideas** on the suitable forum.

2


Go to **eTwinning Live**, especially the **PARTNER FORUMS** where you can check the ideas proposed by other teachers and answer their posts. Or be proactive and **post your own ideas** on the suitable forum.

3

Contact teachers first to check their availability, and interest in working with you. *Make sure you are available for an eTwinning Plus project.*

4

Once you find a colleague, look for them in **PEOPLE** and send them a **CONTACT REQUEST**.



5

When they accept your request, you are **ready to set up the project**. Decide which one of you is going to register the project - **only one can do it!** Go to **PROJECTS** and click on **CREATE A PROJECT**.

A.

Carefully select the name of the school

B.

Invite your colleague to the project

C.

Complete the form with all the details

D.

Use in the description a language that your colleague can understand when they read the application

Don't forget to enable access to your project for eTwinning Plus countries

6


After you submit your project, your colleague will receive a notification in their eTwinning Live to **accept it**. Once they accept the project invitation, **the project will have to be approved by the National Support Services of both countries.**

7

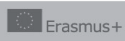
Once the project is approved you can find it in the section **PROJECTS** and you automatically have **your own private TWinspace workspace**.

8

You can now go to **PROJECTS** → **YOUR PROJECT** → **ADD NEW PARTNER(S)**: other colleagues who want to work in your project or colleagues from your school that you will collaborate with.



www.etwinning.net



Source: https://www.etwinning.net/downloads/images/project_infosheet_18/8_easy_steps_infographic_en.pdf

Next, the platform offers *online seminars*, which are ‘led by an expert’ and provide “live communication sessions where you have a chance to learn, talk and discuss” (eTwinning, 2016c). Another initiative is *learning events*, which are “short intensive online events ... related to pedagogical aspects ... led by an expert, and includ[ing] active work and discussion among teachers” (eTwinning, 2017).

What becomes clear from this variety of ‘in-depth learning opportunities’ is that they all revolve around *the figure of the expert*; that is, someone who is standing *outside* the actual project work that teachers perform themselves, but who is ultimately in charge of activities that foster teacher professional development. Put differently, expert-led activities are offered to provide teachers with knowledge they themselves cannot obtain (or cannot obtain as quickly) through merely interacting with one another. This implies that *expert expertise* is a form of expertise surrounding, but distinct from, *professional expertise*. The latter is a form of expertise that teachers *can* (and are at once promised and responsabilized to) gain through working on the project, whereas the former is a form of expertise that teachers can draw on, but which is clearly distinguished from their own expertise. As such, through staging teachers as *professionals* who are capable of performing (in) the project form, the platform at once positions those teachers as *non-experts*: experts themselves are framed as those persons who contribute to teachers’ professionalism *from outside* the project form.

Additional ways in which projects are embedded is by using project kits, a project gallery and teacher testimonials. *Projects kits* operate as toolboxes that give potential eTwinners inspiration by providing step-by-step guides that can function as ‘benchmarks for teachers.’ These do not so much operate as a stringent course of actions to follow when doing a project, but they rather provide suggestive selections from a variety of available digital tools that can be used by teachers when undertaking eTwinning activities in one’s class (eTwinning, n.d.). *Teacher testimonials* are another way in which projects are embedded, reportedly “take the spotlight away from the project, and shine it on you, the teachers” (eTwinning, 2021e). Even though it could be argued that taking the spotlight away from the project precisely re-emphasize the (importance of the) project form in eTwinning, such testimonials furthermore aim to ‘spark creativity’ and showcase ‘classrooms in action.’ Just like the *project gallery*, they aim to give accounts of how teachers go about their project work, which digital tools they employ to do so, and so on (e.g., Pateraki & Licht, 2020). Next to embedding projects into expert expertise, it can equally be argued that platformizing educational projects is accomplished by embedding them in an *ecology of abundance* of initiatives: future teacher training; online seminars; learning initiatives; project kits; teacher testimonials; and the project gallery. Indeed, in accordance to how platforms work more generally (van Dijck et al., 2018), the sheer volume of available

examples of good practice, digital tools, etc., stages eTwinners as handy-men and -women who need, and who are capable of choosing under the conducive circumstances of eTwinning, the right tool for the job. As argued elsewhere, providing sample projects, examples of best practice and adequate digital tools in abundant form is not a neutral endeavor. Instead, such practices should be conceived as a way of *governing the possible* (i.e., how teachers will use those in their concrete practice) through staging these many initiatives as actual potentials. That is, they act and operate as potential initiatives that one can draw from, and that, in doing so, circumscribe and delimit what is actually seen as exemplary teacher professionalism (and what not) (Decuyper & Simons, 2020; see equally Lewis, 2017; Simons, 2015).

4.1.2 Commencing the project: Steering teachers

Despite its overall interest in, and promotion of, the project form, the eTwinning platform is not just interested in *any* project, and neither is it aiming to make just *any* project possible. As can be seen in Figure 1, eTwinning clearly positions educational projects as projects that are to be done in, by and through collaborating, and it makes explicit that the lion's share of activities to be done on the platform (after logging in) are to be *collaborative* in nature. In doing so, the platform makes it very clear that not anything goes: for a project to start and for teachers to embark on a project, collaboration is key. In other words, educational projects are only to be considered as valuable projects – and, in a strong sense, are only considered to be projects *as such* – when they generate collaboration. Arguably, this is a way of demarcating, or steering, teacher activity in a very specific manner, whereby favored forms of teacher professionalism and practice are significantly collaborative, rather than individualized. Such an emphasis on collaboration within eTwinning in many respects mirrors and endorses significant research and policy trends over the last few decades that have sought to encourage teacher professionalism *through* collaboration (e.g., see Hargreaves, 2019; Muckenthaler, Tillmann, Weiß & Kiel, 2020; Nguyen & Ng, 2020). At the same time, however, we would note that this collaborative focus does not entirely preclude the individual, insofar as participating teachers are encouraged to engage with eTwinning (and collaborative projects) for the purpose of their own self-improvement and entrepreneurialism. Thus, the collaborative and the individual are decidedly both and within eTwinning: it is collaboration through individualism, and (at the same time) collaboration to the benefit of the individual.

In addition, Figure 1 equally shows that the successful start of a project is *contingent on approval*. Teachers cannot merely connect and start their collaborative work, since projects need to be approved by the appropriate National Support Service (NSS). In other words, the eTwinning platform turns these NSS providers into *obligatory points of passage*, since projects can only start when the NSS of the given

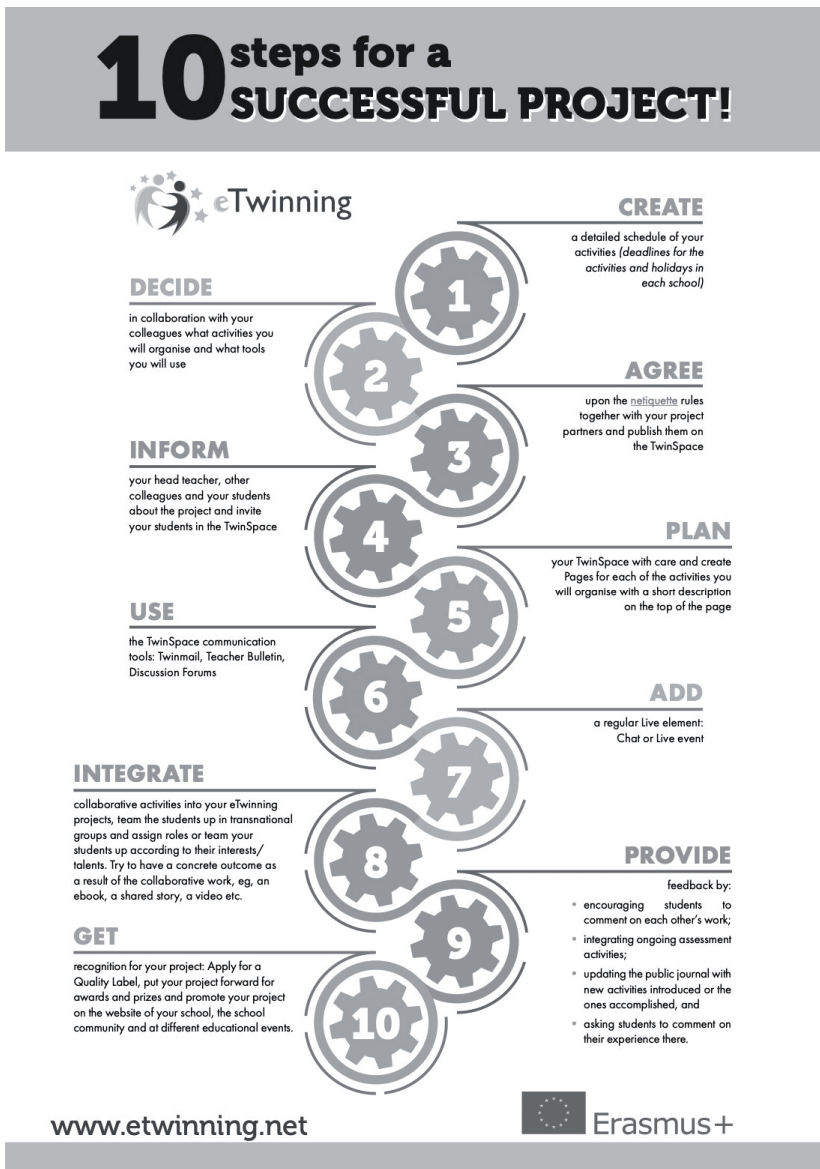
countries involved in the project grant their formal approval (cf. Callon, 1986). Platformed educational projects, thus, are at once based on an ecology of abundance (see operation described above) *and* on an ecology of scarcity through steering teachers into desired activities ('not anything goes;' 'projects need to be approved'). In addition, the fact that all projects need approval before commencing enacts a double process of *safeguarding* quality on the one hand and, at the same time, *evidencing* quality on the other hand.

4.1.3 Doing the project: Responsibilising teachers

A third operation performed by the platform is stringently outlining what actually doing a project entails, which clearly reflects how projects operate as formless forms.

As Figure 2 showcases, even though no claim is being made regarding what the *content* of a project should look like (in that sense, projects are formless), project *activities* are to be performed in a precise step-by-step manner, logically succeeding one another and applicable regardless of the specific project being undertaken (in this sense, projects very much have a designated form). This concatenation and 'logical' ordering of steps *responsibilises* teachers strongly: if they aim to act professionally, they *should* first 'create,' to only then 'decide,' to only then 'agree,' to only then 'inform' and so on, until they *should* finally and ultimately 'get recognition' for their work. Even though this process of responsabilization, and its focus on the dedicated sorts of activities to be performed, is akin to how most projects generally work, what turns this into specifically *educational* projects is that the temporal logic of the project is expected to merge with the institutional timeframe of the school in question (cf. 'create' section in Figure 2). Likewise, the platform constantly responsabilises its users to accept that projects are not operating in a self-contained manner but are precisely embedded within the school in which the teachers in question are employed. In that sense, the platformized enactment of educational projects is made equally possible by anchoring them firmly within the institutional dynamics of the school. In other words, even though eTwinning projects can be qualified as topological forms that can stretch, bend, twist, and turn according to what the specific project requires, the eTwinning platform makes very clear that this form needs to 'land' in the concrete local context specificities of each particular school. As such, the 'topological' form of the project is firmly rooted in the spatiotemporal topography of the school, and vice versa (cf. Decuyper & Lewis, 2021; Hartong & Piattoeva, 2021).

Figure 2: 10 steps for a successful project.



Source: https://www.etwinning.net/downloads/images/10_steps_successful_project/10-steps-successful-project_v3.pdf

4.1.4 Capitalizing on the project: Singularizing teachers

As we have seen thus far, as a *platform*, eTwinning adopts many of the logics and rationales that are specific for platform governance. Furthermore, as an *educational* platform, eTwinning resides within broader governance logics of the EC that increasingly consider digital platforms an effective means to maximally provide learning opportunities and learning resources (Decuyper & Simons, 2020). In a final operation that shows how the form of the project is getting a distinct shape through being embedded on an educational platform, we argue that eTwinning employs distinct ways of validating, qualifying and certifying projects, and that all of these distinct ways contribute to an increasing *singularizing* and *dataveilling* of the teacher. With singularizing, we denote an enhanced form of personalization that not only aims to tailor the platform to whatever individual teachers want/need in their project work, but which equally aims to make teachers *conspicuous*; that is, make teachers at once distinguishable and analyzable as distinct (rather than generic) platform users and project managers (Decuyper, 2019). To do so, teachers' activities must first be meticulously tracked and, importantly, teachers must also see advantages (rather than downsides) in such tracking.

In that respect, eTwinning overtly displays tracking technologies as the means to automatically extract *behavioral teacher surplus* from platform activities themselves (cf. Zuboff, 2019). For instance, the platform offers each user an automated *eTwinning portfolio*, which arguably functions as an 'eTwinning Curriculum Vitae,' and which allows teachers "to 'capitalise' on [their] eTwinning achievements" (eTwinning, 2021b). Not only does this frame teachers as persons who should consider themselves to be 'projectified' actors (see conclusion), but it equally makes clear that teachers' use of resources, completion of project activities, and attainment of achievements lose value when they are *not* readily evidenced. We can thus observe an *enfolding* of activity and automatically generated evidence, in the sense that keeping record of teacher activity in an automated manner immediately allows, enables, and in a strong sense *necessitates* that this activity be converted into valued capital (see Lury et al., 2012).

4.2 Projecting the platform

4.2.1 Making the project form visible

Thus far, this article has made clear how *educational* projects (i.e., projects that are both educational in content *and* serve to 'educate' the participating teachers) are being platformed; that is, the specific ways in which projects take shape through being hosted on a platform issued by the EC. We have tried to show how each of these ways has distinct implications for teachers and teacher professionalism. As

argued above, educational projects are a central focus of the eTwinning platform, serving as both a key activity for users engaged on the platform and the means of organizing platform content. For instance, many of the self-teaching materials and collaborative spaces are intended to prepare teachers to establish their own projects, enabling them to “connect with like-minded individuals on specific topics” if they “don’t feel ready for [setting up a new project] yet” (eTwinning, 2021c). In this way, eTwinners are always in an ongoing state of *figuration* (Suchman, 2012): they are preparing for a project (via self-teaching materials), or else completing a current project, or else developing a subsequent project by seeking out additional ‘like-minded individuals.’ One might describe this as the *project life-cycle* on the platform. Projects thus serve as the key orienting mechanism within eTwinning in terms of both user activity and platform structure, with both characteristics recursively shaping one another, whereby teacher users develop projects on the platform, and the platform content prepares teachers for undertaking project work. The pervasiveness of projects within eTwinning, as activity and structure, resonates with the ability for project activity to subordinate and determine project space, time and relations (Jensen et al., 2016).

We would argue that eTwinning figures an idealized form of teacher professionalism, in which being a good teacher presumes first being a good project worker who is constantly in a state of readiness and receptiveness for embarking on and starting projects. More precisely, eTwinners are often somewhat subsumed within the broader focus on the project form. This imbrication of teacher and project is perhaps most prominent in the manner that eTwinning recognizes teacher performance through projects. Although the two main forms of personal recognition – namely, *i) eTwinning Quality Labels* and *ii) European Quality Labels* – are notionally awarded to the participating teachers of a given project, the premise upon which this performance is recognized is explicitly *via the project*: “eTwinning Quality Labels are granted to teachers *with excellent eTwinning projects*. They indicate that *the project* has reached a certain *national* and *European* standard” (eTwinning, 2021d; emphasis added). Thus, even when participating teachers are being rewarded for their project performance, it is the project itself, arguably, that is the actual recipient, and acknowledging the project provides a key means of teaching teachers about exemplary performance. Put differently, it is as much the *project-as-teacher*, as it is the *teacher-as-project*, that is being awarded, which clearly emphasizes the project form and, specifically, the educational nature of the project within the platform.

Beyond the priority assigned to projects *as* teachers, another key initiative of eTwinning that seeks to foster project logics is its collaboration with Teacher Training Institutes (TTIs). This collaboration has sought to expand awareness of eTwinning amongst prospective and early-career teacher by facilitating the “mainstreaming

[of] eTwinning by engaging with trainee teachers” (eTwinning, 2019). First established in 2012 as a trial in four European countries, the engagement of TTIs by eTwinning intends to develop the “new generation of teachers” by including “an ‘Introduction to eTwinning’ in the TTI curriculum to their students [i.e., training teachers]” (ibid.). Since 2019, all 44 countries participating in eTwinning are eligible to include the eTwinning platform and related curricula for trainee teachers in participating higher education institutions (eTwinning, 2020). Significantly, the platform encourages mandated teacher education curricula to develop *projectified* logics and practices amongst trainee teachers:

The contribution of eTwinning in initial teacher training provides: discovery and implementation of *project teaching* and multidisciplinary work; development of ICT and language skills; European, international, intercultural experience; [and] development of *professional skills* (*project management, setting goals, planning, teamwork*). (eTwinning, 2019; emphasis added)

Despite the suggestion here that eTwinning provides teacher trainees with opportunities to acquire new projectified knowledge and skills, including ‘project teaching’ and ‘project management,’ we would argue that it is the reconstitution of what counts as ‘good teaching’ that is particularly telling. Specifically, we can see the active promotion of, and equating by, eTwinning of *project-focused* skills and logics with (teaching) *professional* skills, with these skills positioned alongside more traditional domains of teacher professional knowledge (e.g., curriculum, pedagogy). As one teacher participant noted via a video uploaded to the platform, “[eTwinning] opened my mind to become a *project teacher*, rather than just a book teacher” (eTwinning, 2016a; emphasis added).

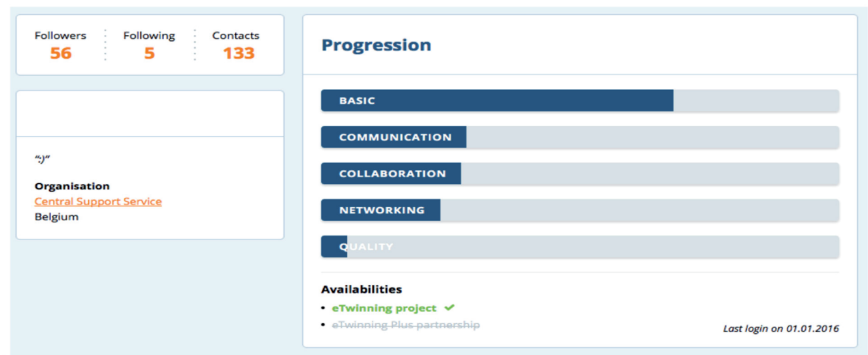
While this does not presume that project skills are now *necessarily* positioned as being more or less important than other topics during initial teacher education and, subsequently, their teaching career, there is nevertheless a stark reframing of teacher professionalism to now include projectified logics and practices alongside more conventional knowledges (e.g., pedagogy, curriculum). Embedding the project form within initial teacher training arguably reflects how eTwinning is squarely situated within the broader discursive terrain of the project society (Jensen et al., 2016), in which projects are not mere technical tools but instead work to challenge and reshape educational practices and ideals (see Ylijoki, 2016).

4.2.2 Figuring the projectified self

While the embedding of the project form within initial teacher training curricula is itself significant, the broader projectification of teachers – and the constitution of the ‘teacher-as-project’ – is arguably even more prevalent via eTwinning Live and the participant (‘eTwinner’) profile pages. eTwinning Live is the restricted access por-

tion of the platform where participants create their own profile and then perform activities, including accessing their news feed (e.g., posts from eTwinning), undertaking work in their own projects and liking and/or commenting on the activities of other eTwinners.³ In a manner analogous to many other social media platforms, the profile page is the main interface that showcases the participant and their activities to others on eTwinning, and it can be seen by all other registered users on eTwinning Live.

Figure 3: eTwinning Live profile image



Adapted from eTwinning, 2015a.

Of particular interest is what eTwinning describes as *global progression*, which provides a means of quantifying and projecting teacher performance on the platform (see Figure 3). Global progression is depicted via the ‘Progression Bar,’ which is a tool that “shows how far eTwinners have gone in their eTwinning journey. It is not meant to give any judgement on how good eTwinners are, but rather show how much they have done in eTwinning” (eTwinning, 2015b; emphasis added). Intended as a ‘snapshot’ of user activity on the platform, the profile page and progression bar thus incentivises eTwinners by offering “recognition for their achievements ... [and] motivation to go beyond the basics of eTwinning” (ibid.) and provides a highly visible *projection of oneself* to other users of the platform. Assessed across five key areas of eTwinning (*Basic, Communication, Collaboration, Networking, Quality*) and summarized as a single ‘Global Progression’ percentage score, eTwinners contribute towards the progression bar in two distinct ways: *i*) completing the self-teaching materials available on eTwinning, which accounts for 30% of their score; and *ii*) general platform usage and activity, which accounts for the remaining 70% of their score. In addition to rewarding user activity, we can see here the presence of a *project-based*

curriculum in eTwinning via the self-teaching materials; that is, not only curricula delivered *via* a project, but also curricula for teachers on how to *be* a project-based worker.

Reminiscent of the stress on being active in a project society (see above), in addition to acknowledging teacher excellence via an earmarking of exceptional projects, the vast majority (i.e., 70%) of recognition is achieved by simply *being active* on the platform, in which (trackable) action is prioritized above teacher learning or, for that matter, informing changes to teacher practice. For instance, users are awarded points for the *Basic* criterion for completing seemingly administrative (rather than educative) tasks, such as adding a profile picture, adding posts to one's personal feed and even the rudimentary activity of logging-in (see eTwinning, 2015b), which reflects the many administrative tasks that more 'traditional' (i.e., off-platform) projects frequently emphasise (see Fred, 2020; Godenhjelm et al., 2015). Similarly, many of the available self-teaching materials are oriented towards improving a user's proficiency with the platform itself (e.g., "Getting ready to become an active eTwinner"), rather than such learning being intended to improve teacher classroom practice or content mastery (eTwinning, 2015b). This arguably reflects the figuration of a 'projectified self' (Kalff, 2017), not only in terms of teacher professional learning being discrete and quantifiable (as 'global progression'), but also, importantly, because so much effort is directed towards encouraging the user to be an engaged and active eTwinner. In other words, platform activity is directly and visibly rewarded, irrespective of whether it is 'good' or 'bad' activity. Such a focus on generating visible teacher activity positions eTwinning as a material and discursive environment in which *projects* – both individual projects and the ongoing teacher-as-project – can be undertaken, as well as providing the means for the teacher to *project* their activity to other users and interested parties (see also Bratton, 2015).

Moreover, we would note an interesting tension between the discrete nature of individual eTwinning projects and self-teaching materials and, at the same time, the continuous nature of teacher development as an ongoing project. When Jensen et al. (2016, p. 25) describe the "freedom of the project," we can observe in this the apparent flexibility for eTwinners to pick and choose their own projects and teacher collaborators, as well as customize their online profiles and learning modules. However, this freedom is ultimately curtailed insofar as the completion of each project or self-teaching material can only ever be a stepping-stone to the *next project*. As noted on the eTwinning platform, "there is *always* room for improvement!" (eTwinning, 2021c; emphasis added). Given the central importance for the 'successful' project worker (and, thus, eTwinner) to be active, all past and present activity on the eTwinning platform is necessarily superseded by demands for yet further future activity

towards the ultimately unrealizable teacher-as-project, where teachers are deemed possible of improvement but never perfection (see also Lewis & Holloway, 2019).

Given how the platform is promoted, there is no grand arc or goal towards which all teachers or eTwinners move; rather, it is about each individual teacher getting better, project by project, but entirely heterogeneously, thereby establishing what Vanden Broeck (2020b, p. 671) has called an “unsynchronised simultaneity.” Ultimately, then, we argue that even though some sort of universalized experience of the project is promoted within eTwinning, this homogeneity exists only at a distance. Up close, it is highly specific and fragmented, as each eTwinner makes their own decisions and takes their own paths to achieve their own goals, again and again (see also Decuyper & Simons, 2020). This means that eTwinners are figured to create their own project timespaces independent of chronological timespace, which builds on but transcends the individual projects in which they participate, and ultimately bounds their own experiences of teacher-as-project within the platform.

5. Conclusion: Projectifying teacher professionalism and running ‘out of time’

In this paper, we have sought to demonstrate how projects – and, specifically, educational projects – occupy a central place on the eTwinning platform, as well as how project and platform logics are now increasingly shaping contemporary teacher professionalism. Rather than merely seeing the platform as a passive or neutral vehicle for hosting projects, we would instead suggest that eTwinning provides an exemplary environment for repositioning project thinking as a central, and even *necessary*, aspect of teacher professionalism. As we have shown, teacher users develop projects on the platform, whereas the platform content of eTwinning prepares teachers to undertake project work, simultaneously projectifying (i.e., foregrounding the project form and project activity) and platforming (i.e., centering the constitutive role of the platform) teacher professionalism. Moreover, the ongoing development of teacher professionalism via projects (i.e., teacher-as-project) is also accompanied, at the same time, by the educative work of projects themselves on the platform (i.e., project-as-teacher). While concerns for the changing nature of teacher professionalism are by no means an entirely recent development (e.g., see Holloway, 2021; Sachs, 2016), we would nonetheless argue that idealized forms of teacher professionalism – emphasizing the teacher-as-project/project-as-teacher and the importance of connecting with like-minded teachers – are being actively constituted via the eTwinning platform. In this sense, future research on digital education platforms and teacher professionalism should explicitly adopt a mutual concern for both platform and project logics, as well as their respective effects on one another.

In a related manner, we would also like to make the methodological point that platform analysis is arguably most productive when it is slow and methodical, despite the characteristic speed and the instantaneous manner by which digital platforms and data are frequently accessible, across everyday life and social science research. As we have noted elsewhere (Decuyper, 2021; Lewis, 2020b), research should not seek to be too fast, lest we risk missing significant features of platforms and overlook, in turn, their ability to constitute new forms of digital education governance. This is equally not to argue that research must avoid ‘logging in’ to be useful; indeed, we have every intention within our broader research project to gain access to the eTwinning platform and determine what is behind the password protection, as well as speaking with the respective platform designers, administrators and users. However, we would stress that the ability to actually be ‘in’ (i.e., privately) the platform should not preclude or diminish the insights that can also come from first, or additionally, being ‘on’ (i.e., publicly) the platform, especially when this can emphasize how these more public elements work to attract prospective teachers and participants. Notwithstanding our focus on the impact of digital data and platforms for teacher professionalism, we would also caution against education research that downplays the equally significant impact of datafication for *students* (see Bradbury, 2019; Selwyn, Pangrazio & Cumbo, 2021). In this way, research into educational platforms and projects should accommodate the specific contextualized domain of education and schooling, rather than limit itself to more generalized or presumably universalized notions of the project(-ified) and platform(-ed) self.

In closing, we would like to reiterate here the explicit connection between new forms of projectified teacher professionalism and digital platforms, like eTwinning. Such platforms now typify how individuals seeking the idealized form of teacher professionalism are forever starting individual projects anew and yet, at the same time, are never quite finishing anything. The ultimate life-long project – that is, the self-as-project – instead stretches unattainably before them (see also Rose, 1996). Indeed, the personal project timespace of each eTwinning reflects a projectified teacher professionalism that requires there always be *another project* and another opportunity for yet further improvement. As such, meaningful progress towards attaining the idealized teacher professionalism becomes impossible: for every step forward taken by the teacher, the horizon recedes further in the form of as yet un-attempted and incomplete projects. While this may not differ from a conventional understanding of profession(al)s and the premise that they are permanently seeking to improve, what we see with eTwinning is this logic taken fully to a new projectified and platformed conclusion.

In this sense, teacher professionalism is arguably being governed in eTwinning through new temporalities. Given that being part of a project is the *sine qua non* of

the contemporary teaching professional, such teachers thus find themselves ‘out of time:’ stuck in the never-ending task of completing an infinite series of projects, within an infinite series of project timespaces.

Notes

1. We should note here that eTwinning is set to merge with another EC schooling platform (the School Education Gateway) in 2022. The resulting EC ‘super-platform’ is to be known as the *European School Education Platform*, which serves the purpose of “retaining your favourite content and expanding on it in a single, modern and accessible space” (eTwinning, 2021f).
2. This user-only space, collectively referred to as *eTwinning Live*, is accompanied by *TwinSpace*, where teachers complete the team-based projects that form the basis of their eTwinning online experience. Access to all these sites and their content is restricted to eTwinning users that are accredited on the platform by the National Support Services (NSS) provider in their respective country.
3. As argued above, all references to user-only portions of the platform (e.g., eTwinning Live) adopted in this article are derived from publicly available material used to promote eTwinning to prospective users elsewhere on the platform.

Funding

This work was supported by the Australian Research Council (grant number DE190101141) and the KU Leuven Research Council (grant number C14/18/041).

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The practices of data-based governance: German school supervision, professionalism and datafied structurations¹

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Abstract

With the international rise of data-based education governance, Germany has equally seen an increasing prevalence of data in school governance. This includes the datafication of school supervision ('Schulaufsicht') which supports and simultaneously controls schools. The study explores how school supervisors' practices are (in-)formed by their datafied structurations (such as platforms, data overviews, etc.) and their professional self-perceptions. The article draws on qualitative interviews with ten school supervisors in four German states. The findings suggest that datafied structurations are widely used and influential (especially with regards to quality assurance meetings). At the same time, the supervisors continuously re-contextualize and qualify the datafied structuration. Furthermore, the interviewees highlight the importance of other knowledge sources and a trusting relationship between schools and school supervisors. In general, how datafied structurations influence supervisory practices depends highly on how supervisors perceive their profession.

1. Introduction

In Germany, the school system falls primarily under the supervision of the sixteen federal states. The state-level school supervision authority ('Schulaufsicht') is responsible for both ensuring educational quality and supporting the development of schools. Similar to many other countries around the world, the German school (supervision) system has seen an increasing prevalence of data-based (or 'evidence-based') rationales (Thiel et al., 2019; 'test-based accountability', Verger, Fontdevila & Parcerisa, 2019). This extensive implementation and usage of data infrastructures to inform decision-making is a form of 'datafication' (Hartong, 2018a). Particularly

over recent years, these data infrastructures – e.g., data dashboards to monitor school statistics or performance – have become increasingly optimized and refined. This includes the growing integration of platforms to make school monitoring data more easily accessible for governance purposes or by the wider public (Landri, 2018; Hartong, 2020; Gorur & Arnold, 2021; see also Decuypere, Grimaldi & Landri, 2021).

This growing reliance on data is affecting the practices of German school supervisors, which are the focus of this paper. However, in Germany, platforms are only one of several ways to present and structure data (Hartong, Förschler & Dabisch, 2021). School supervisors also rely on PDF data overviews, questionnaires, data tables and dashboards to get an impression of their schools. To capture this diversity, I choose the term ‘datafied structurations,’ i.e., (primarily) digital tools of ordering and visualizing school data. Conceptually, these datafied structurations are socio-technical combinations of material instruments and their underlying ideas and values (‘assemblages’, Kitchin & Dodge, 2014 or ‘thinking infrastructures’, Bowker et al., 2019).

While the adoption of such datafied structurations often reflects a desire to make decision-making more objective, data(-fied structurations) themselves are not neutral (see Williamson, 2016). Instead, they structure attention and powerfully shape what governing actors (such as school supervisors) get to see; in turn influencing which aspects of school reality they can act upon (Hardy & Lewis, 2018). For example, data dashboards focus users’ attention in particular ways, prioritize certain (readings of) data and provoke particular forms of decision-making (Hartong, 2020).

While datafied structurations consequently hold a substantial amount of regulative power, research has shown that they do not simply determine decision-making practices, as people are not “passive subjects, disciplined ... in linear and unproblematic ways” (Kitchin & Dodge, 2014, p. 19). Rather, it is crucial to consider the multiple ways in which such structurations are continuously enacted by professionals (in this case school supervisors), and influence decision-making processes (Decuypere et al., 2021; Förschler, Hartong, Kramer, Meister-Scheytt & Junne, 2021).

Following this line of argumentation, this paper empirically investigates how datafied structurations become enacted in German school supervision practices and the role played by different professional self-perceptions, given the inherent tension between support and control in school supervision (Klein & Bremm, 2020). As I will show, datafied structurations are widely used and influential but, at the same time, ongoingly re-contextualized and qualified by supervisors. An analysis of the large variance in datafied structurations between states additionally highlights the impact of more managerial or supportive professional self-perceptions and differential perceptions of data-based supervision. By centering the practices of school supervisors

and not the datafied structurations, in my study, I adopt a somewhat different perspective than other studies that seek to understand the datafication or platformization of education from the viewpoint of specific technologies, their production or composition (e.g., ‘MySchool’, Gorur, 2013; ‘Scuola in Chiaro’, Landri, 2018; ‘OneSchool’, Clutterbuck, 2020; see also Hartong & Förschler, 2019; Perrotta, Gulson, Williamson & Witzenberger, 2021).

Critical data studies in education often emphasize an investigation of teachers or principals (e.g., Holloway & Brass, 2018; Lewis & Holloway, 2019; Perrotta et al., 2021), including their (potential) de-/re-professionalization (Brass & Holloway, 2021). By contrast, the impact of datafication on actors in state agencies has often remained out of scope (except for data practices in central offices in the US, see Park & Datnow, 2009; Coburn & Turner, 2012; Honig & Venkateswaran, 2012). This mirrors a general lack of research into the specific role of school supervisors in school governance in Germany (Lengen, 1988; Brüsemeister & Newiadomsky, 2008; for an exception, see Klein & Bremm, 2020) and seems particularly salient given the growing relevance of data dashboards and platforms (see Thiel et al., 2019; Hartong, 2020; Hartong, Breiter, Jarke & Förschler, 2020).

Methodologically, the study presented in this paper follows an explorative approach, based on interviews with ten German school supervisors. The school supervisors were located in four different German states and, given the large heterogeneity of datafication between the states (Hartong et al., 2020), are provided with notably different datafied structurations. The first goal of the study is to understand what these different structurations look like – that is, to understand how data infrastructures manifest empirically in different state contexts. Secondly, and most prominently, the study explores how datafied structurations and supervisors’ professional self-perceptions (in-)form the realities of school supervision practice in Germany. The paper is thus mostly interested in how a variety of datafied structurations are integrated into the professional practices of school supervisors and their regulative consequences. The research questions explored in this paper are as follows:

- 1) How are datafied structurations enacted in school supervisors’ professional practices? Specifically:
 - a) What are more general effects of datafied structurations on professional practices?
 - b) How do varying combinations of datafied structurations interact with professional self-perceptions and practice?

The remaining parts of this contribution are as follows: First, I focus on the global expansion and enactment of educational data and the impact of data on educational professions (section 2). Next, I provide an overview of the institutional structures of

school supervision in Germany, their inherent professional tensions and the shift towards increasingly data-based governance in Germany. After presenting the methods, in the fifth section, I present a short overview of the datafied structurations present in the supervisory contexts under study and key findings from interviews with school supervisors regarding the interaction between datafied structurations, supervisory practices and their professional self-perceptions. The contribution ends with a concluding discussion.

2. Framing the study: Critical perspectives on the datafication of educational professions

In hopes of improving education, countries around the world have increasingly turned to data to govern schools, with digital data being “touted as a potential panacea for many current educational challenges” (Selwyn, 2015, p. 67). In the wake of these changes, a range of research in critical data studies has started to investigate how such data increasingly matter for education governance (Williamson, 2016), including their effects on educational professions. As such studies show, data – or datafied structurations, as framed in this paper – require complex processes of valuation and relation-making, which are often invisible in the final product (Hartong & Förschler, 2019). Although such datafied structurations are often “promoted as an objective and data-led augmentation to the conventional school inspection by expert inspectors” (Williamson, 2016, p. 130), researchers highlight that such quantified representations of reality remove context (Piattoeva, 2021) and caution against an approach “where complex (and unsolvable) social problems associated with education can be seen as complex (but solvable) statistical problems” (Selwyn, 2015, p. 72).

Particularly in Anglo-Saxon school systems, which nowadays rely heavily on numerical data as markers of educational success and which are more open to ‘high-stakes’ accountability (i.e., linking (performance) data/large-scale assessments to consequences; Verger et al., 2019), research indicates a data-based *de-* or *re-*professionalization of the teaching profession (Ball, 2016). At the same time, scholars emphasize that datafication does not *directly* determine practice. Instead, such policy pressures are always *enacted* by actors on the ground (Landri, 2021). For example, focusing on individual teachers or schools, researchers observe varying responses from ‘passive resistance,’ ‘cynical compliance’ and ‘muddling through’ to ‘begrudging acceptance’ and alignment, as well as work-around practices, fabrications, data manipulation and other unintended effects (Thompson & Cook, 2014; Selwyn, Henderson & Chao, 2015; Landri, 2021). Another example of these ambivalences is the coexistence of contradictory logics of critique and acceptance of data (a ‘double-

think' of data) in the minds of individual educators, for whom data is “worthless yet important, unnecessary yet indispensable, distracting but beneficial” (Hardy & Lewis, 2017, p. 682).

Focusing on school supervision, past studies on the enactment of data in US school districts show that superintendents and principals rely on a mix of experience, data and intuition, as well as on a trusting environment between schools and supervisory institutions so that data will be implemented meaningfully (Park & Datnow, 2009; Honig & Venkateswaran, 2012). However, in the intervening years, accountability and data pressures have expanded even more, highlighting the difficulty of maintaining such trust in a data- or test-based accountability environment (Sugrue & Mertkan, 2017; Datnow, Lockton & Weddle, 2020). As Holloway and Brass (2018) also highlight, over time, data-based accountability regimes have substantially altered teachers' professional self-perceptions, indicating “a shift in governmentality where objectification, quantification, and measurement are no longer treated as anti-thetical to teacher professionalism” (p. 380). Similarly, Lewis and Holloway (2019) show how data became part of teachers' professional self-perception and necessary to determining the 'truth' about their practices: “observation rubrics, for instance, became the consummate authority on teaching, which had the effect of marginalising the professional judgement of teachers themselves” (p. 46).

Even though in such cases data became the dominant framework through which to understand and assess teacher quality, this does not necessarily mean that data is always presented in sophisticated datafied structurations such as complex platforms or dashboards. As Selwyn (2022) highlights, in reality, the sophistication of the datafied structurations that 'data-driven' schools rely upon may not actually matter as much in the enactment. He shows how even “relative unsophisticated, pedestrian uses of data” can still lend “a veneer of precision and objectivity to otherwise woolly judgements and subjective decisions” and exert substantial influence on professional practices (ibid., p. 108).

Against the backdrop of research from mainly high-stakes systems with heavily institutionalized data usage, Germany is an interesting case with its traditionally 'low-stakes' approach, highlighting a larger resistance to school rankings and automated consequences attached to data (Verger et al., 2019; Dabisch, Hartong & Nikolai, 2021; Hartong et al., 2021). The following section provides an overview of school supervision in Germany and its professional tensions and highlights the increasing datafication of schooling and its consequences for school supervision.

3. School supervision and increasing datafication in Germany

In Germany, the 16 states are responsible for school supervision, namely the academic, legal and staff supervision of schools in their region ('Fach-, Rechts- und Dienstaufsicht', Avenarius, 2001). This includes monitoring the quality of teaching and education and the lawful operation of schools, as well as regularly supervising teachers, principals and other pedagogical personnel (see Eurydice, 2022). The form of school supervision authorities varies significantly between the 16 German states, from multi-level hierarchies in larger states to a compact school supervision team directly located in the Ministry of Education in city-states (for an overview, see Füssel, 2010).

This study focuses on the so-called 'lower' school supervision that engages directly with schools. These school supervisors at the lower end of the hierarchy are each responsible for supervising a set number of schools (in our sample mostly 10–20 schools per person). They are, on the one hand, the superiors of all school staff and, on the other hand, hierarchically subordinate to the central supervision authority and accountable to the Ministry of Education (Dederling, 2021). Consequently, supervisors have to adhere to political and educational regulations (including those on data usage) and facilitate and control the implementation of education reforms.

Traditionally, lower school supervisors have been experienced teachers, mostly former principals who, after becoming supervisors, then regularly inspected teachers (Hopf, Nevermann & Richter, 1980; Lengen, 1988). Unlike in other countries where supervisors receive special administrative or managing training and oftentimes do not have any work experience in schools (e.g., see Hartong, 2018b, for the US), German school supervisors have been trained mostly on-the-job, their professionalism largely being built on their long-term experience as teachers and principals (Bessoth, 1974). As late as the 1950s, school supervisors were often without official offices and were characterized as 'pedagogical decathletes' (i.e., all-rounders, *ibid.*; Schwab, 1979; Wieth, 2020). Since then, an increasing formalization (or 'bureaucratization') of school supervision has taken place. This included the establishment of local bureaus and regulations, supervision laws and increased paperwork and, starting in the 1970s, an increasing shift of responsibility from supervisors to principals – a development which, however, did not substantially alter the approach to school supervision overall (Hopf et al., 1980; Wieth, 2020).

Still today, school supervision is situated within a ministerial hierarchy and combines the roles of pedagogue, advisor and bureaucrat (Hopf et al., 1980; Kroupka et al., 2019; Wieth, 2020). The simultaneity of these differing roles generates a continuous tension in the school supervision profession. This tension between controlling, administrative logics on the one hand, and advisory, supportive logics on the

other has provoked numerous debates throughout the decades (Poschardt, 1978; Schwab, 1979; Hopf et al., 1980; Lengen, 1988; Dederling, 2021). Historically, studies on school supervisors' self-perception highlight that supervisors view themselves primarily as pedagogues (Bessoth, 1974; Poschardt, 1978; Schwab, 1979). However, there is also a long tradition of criticizing schools (and school supervision) for being overly bureaucratic and in conflict with the pedagogical freedom of teachers (Becker, 1954; Rosenbusch, 1994; Herrmann, 2020).

Since the diversion of responsibility for teacher supervision to principals (starting in the 1970s and accelerating in the 1990s), school supervisors increasingly focus on principals and, then only more indirectly, on their schools (Bessoth, 1974, pp. 48 ff.; Rürup & Heinrich, 2007). As a consequence, some scholars have called for managerial professionalization of school supervisors along the lines of US superintendents (Bessoth, 1974; see Schwab, 1979 for a critique). However, since then, only a few German states have implemented institutionalized and, hence, more standardized professional training for supervisors (see e.g., LISUM, 2018; Tulowitzki, 2019). Consequently, the actual practices of school supervision are still highly dependent on individual supervisors' experiences and their perception of the profession with its inherent tensions between pedagogical, advisory, administrative, supportive, and managerial logics (Bessoth, 1974; Hopf et al., 1980; Gruschka, 2010).

From the late 1990s onwards, the German states further increased individual schools' responsibilities and datafied representations of schools' outputs. While the states vary substantially regarding the design of their data-based governance instruments, there are also commonalities. Partly as a critique of traditional school supervision, many states introduced regular external school inspections ('Schulinspektion,' not to be confused with school supervisors), whereby new intermediary agencies inspect entire schools and write inspection reports (Maritzen, 2008; Heinrich, 2015).

Additionally, the states created new agencies to advise schools and provide teachers with further education courses. After the German PISA results in 2000 surprised negatively ('PISA-Schock'), the states introduced standardized performance testing for all pupils (literacy and numeracy in grade 3 and 8, known as 'VERA') and some states also founded 'quality institutes' to analyze this performance data (Hartong & Förschler, 2019; Diedrich, 2020) and develop data instruments for internal school evaluation (Thiel et al., 2019). With the aim of digitalizing school administration, the states also introduced and continuously expand school administration systems (Hartong et al., 2020). While all these new data infrastructures did not fundamentally change the basic processes of school supervision themselves, their introduction still meaningfully changed the environment of school supervision. Furthermore, with the increasing push towards a datafied (re-)professionalization of teacher training and

school supervision (LISUM, 2018), (performance) data have been gaining traction as means of influencing education professions.

In the wake of this development, schools and school supervision authorities have increasingly been asked to integrate these new data infrastructures into their practices (Thiel et al., 2019). School supervision authorities are provided with reports on varying data types by the Ministry or their ‘quality institute.’ However, research suggests a lower prevalence of (performance) data-based accountability in German schools, out of line with reformers’ hopes (Ramsteck, Muslic, Graf, Maier & Kuper, 2015; Muslic, 2017). Still, teachers report undesirable outcomes of accountability reforms such as ‘teaching to the test,’ ‘cheating’ and ‘cream skimming’ (Jäger, Maag Merki, Oerke & Holmeier, 2012; Thiel, Schweizer & Bellmann, 2017).

To facilitate the take-up of data by schools and school supervision authorities, most states introduced regular (data-based) *quality assurance* or *target agreement meetings* between schools and the lower school supervision, again with the aim of both supporting and controlling schools (Kroupka et al., 2019; Herrmann, 2020). Often, such target agreements are not focused on performance data and in most cases, no sanctions are attached (Muslic, 2017, Kroupka et al., 2019; but see the ‘Bonusprogramm’ in Berlin, Baur, 2016). The meetings are often institutionalized in the context of external school inspection reports but are also used in place of school inspections (Tarkian, Lankes & Thiel, 2019; Tarkian, Maritzen, Eckert & Thiel, 2019). However, so far, little is known about the actual practice of such meetings, underlining the need for explorative studies on school supervision.

Concluding the previous two sections, we can see that data infrastructures and datafied structurations have expanded substantially with, at least in the international context, clear regulative effects on education professions. However, such effects are not straightforward, are always locally enacted and might vary from governance context to governance context. Consequently, there is a need for explorative studies that consider the ways in which professionals enact data (here: datafied structurations) (Hartong & Förschler, 2019; Decuypere et al., 2021). This holds especially true with regards to the effects of datafication on the professional practices and self-perceptions of school supervisors, a profession with a long tradition of integrating contradictory logics.

4. Methodological approach

The study presented in this paper is part of DATAFIED (www.datafied.de), a large-scale research project combining subprojects on the expanding role of data infrastructures and practices in and around German schools, ranging from classroom interactions, software and administrative studies to governance (see Bock et al., 2023).²

The project accounted for inter-German heterogeneity by focusing on two city states and two larger (more rural) states, one of which used to be part of the German Democratic Republic (East-Germany). In the subproject on school supervisors and principals on which this study is based, we first reviewed publicly available documents for each state, as well as research literature, sketching out and mapping the formal procedures and structures of school supervision (and specifically ‘data based’ school supervision). Following that stage, we conducted 25 extensive interview conversations with school principals, supervisors and state quality or support agencies between 2019 and 2021.

For the purpose of this explorative study on supervisors’ professional self-perception, I focus on eight semi-structured, in-depth interviews with ten school supervisors in these four German states as well as the aforementioned documents related to descriptions of school supervision. The interviews ranged between 45 and 120 minutes and focused on the school supervisors’ practices and the perceptions of their different fields of activity. The partially structured qualitative interviews centered school supervisors’ professional practices and how they engaged with the datafied structurations present in their respective supervisory contexts. Despite our structuring questions, in the interviews, we responded to the school supervisors’ own sense-making of data-based school supervision. This openness allowed us to exploratively follow the perspectives of our interviewees regarding their very different professional practices.

For the analysis, I used a qualitative content analysis approach (Kuckartz, 2010), analyzing the transcribed interviews theoretically informed by critical data studies. In the states where school supervisors provided us with examples of their datafied structurations, I used these to complement the descriptions of the structurations in the interview transcripts. First, I analyzed the datafied structurations based on the provided material, public documents and the descriptions given by supervisors and principals in our interviews. After a case-by-case content analysis of the interview transcripts, I systematized the findings and focused on the instances where school supervisors referred to data practices and datafied structurations, to exploratively investigate the interactions of datafied structurations, professional practices and self-perceptions. This perspective, centering school supervisors’ practices, allowed me to explore the regulative effects of datafied structurations despite the large variety of datafied structurations.

5. Findings: Interactions between datafied structururations and professional self-perceptions in school supervisors' decision-making
- 5.1 General effects of datafied structururations on the professional practices of school supervisors

In this section, I investigate the more general effects of the use of data and datafied structururations on the professional practices of school supervisors. The aforementioned expansion of datafication is also reflected in the interviews: all supervisors use data(-fied structururations) frequently to get an overview of the schools under their responsibility. In recent years, both opportunities and the obligation to work with data have expanded substantially and, consequently, so have data-related practices.

Having examined the datafied structururations that the school supervisors in the four states are provided with, I distinguish six different types of datafied structururations: (central) digital platforms, dashboards for single (administrative) data, PDF data overviews, PDF questionnaires, data tables and single data sheets. However, as shown in Table 1, which datafied structururations are actually provided to the school supervisors varies substantially across the four states.

Table 1: Prevalence of different datafied structururations in the four federal states under research

State 1	State 2	State 3	State 4
central digital platform, dashboard for single (administrative) data, PDF data overviews, data tables, single data sheets	dashboards for single (administrative) data, PDF data overviews, PDF questionnaires, data tables, single data sheets	digital platforms, dashboard for single (administrative) data, (PDF data overviews), data tables, single data sheets	digital platforms, data tables, single data sheets

While all states use digital platforms for certain administrative tasks, such as teacher planning, budgeting or data transfer between schools and the Ministry (e.g., school administration systems), only State 1 provides a *central* digital platform that combines most school supervision tasks into one structururation. The other states mainly rely on PDF data overviews or single data sheets as datafied structururations, but also a small number of automatically updated dashboards for single administrative data.

Throughout the interviews, it becomes apparent that school supervisors make particular use of datafied structururations to support regular *quality assurance meetings* with school principals. All school supervisors use their respective datafied structura-

tions as a basis for these meetings to get an overview of the school's situation before meeting with principals.

So, all the things are represented graphically. And that's a real help, because otherwise you'd have to search for all the data yourself.

For our [quality assurance meeting], we have the [PDF data overview]. This is a very compact, very condensed summary of 'all data at a glance,' so to say. I definitely find that extremely helpful.

First of all, we look at the school's data. And for me, there are a lot of indicators of school quality.

One common data practice of all school supervisors is to ask schools to explain the data and to find out why the data are the way they are. Here, the supervisors especially focus on data that were marked as "striking" in the datafied structurations.

There are regular topics for the [quality assurance meeting] that are based on this body of data. And as a school supervisor, you go into that conversation, you ask about data that is striking, and you hear how the school interprets that data.

If there was a very serious drop [...] For example, the Maths Abitur [university entrance diploma] is always two grades below the state average. Then you really have to investigate and ask the principal: 'What's going on here?'

Here, the school supervisors acknowledge that school principals might have different interpretations of the data and deeper knowledge of the underlying reasons than they do. However, this practice of asking for an oral account to accompany the data account can simultaneously enhance understanding and increase pressure on the school.

As established in the framing of this study, datafied structurations come with inherent valuations that are not necessarily visible in the final product (Hartong, 2020). By using datafied structuration to decide which data (not) to investigate, the supervisors implicitly accept these built-in valuations. For example, a data overview will present or highlight certain data (e.g., exam results in Maths or cancelled classes) and not other data (e.g., exam results in Geography or absentee students), which in turn (in-)forms which parts of schooling can be acted upon (Hardy & Lewis, 2018). Another way in which these valuations affect supervisors' practices is rooted in the benchmarks that the structurations provide. Most datafied structurations compare the school's data to the state average for the school type. Another state additionally uses a second benchmark drawing on 'comparator' schools (schools with a similar socio-economic composition) for comparison.

How do we [referring to the school] manage our resources? It's done well. So, I'll write a one-liner, something like: Teacher substitution budget used very responsibly, clearly below state average.

In the [PDF data overview], of course, there is always a comparison with the ‘comparator schools.’ So, that means there is always at least one benchmark.

As we can see, these choices that were made in the production of datafied structurations still shape school supervisors’ decisions about which data points they investigate and which data points they ignore. However, other supervisors reject these built-in valuations provided by the structuration, warning that they sometimes compare ‘apples and oranges.’

I also check whether apples and oranges are being compared, which is sometimes the case with standardised methods, right? Like if you make comparisons on a state average and don’t look at the baseline situation [...] it’s a milkmaid’s calculation [idiom for naïve fallacy].

The majority of the interviewees have a very differentiated approach to data: Their perspective on data defies simple categories such as ‘data-critic’ or ‘data-fan.’ While they clearly make use of the data provided, the interviews also indicate a reflexive engagement with the datafied structurations. The supervisors put data into perspective, add contextual knowledge and qualify the data they use (or do not use) – even in the states that are more strongly data-orientated. Some supervisors criticize their datafied structurations more implicitly, for example by ignoring data that does not fit with their assessment of the situation. Other supervisors more explicitly criticize data in their correctness or usefulness.

Here, the supervisors do not consider the datafied structurations to be the ultimate authority on the ‘truth’ about schools (in contrast to teachers in Lewis & Holloway, 2018, for example). Instead, like superintendents in the US emphasizing the need for a mix of experience, data and intuition (Honig & Venkateswaran, 2012), school supervisors emphasize that there is more to know about schools than what is visible in the datafied structurations:

But, of course, it’s never the data basis alone. That’s very clear. It’s the knowledge of the school supervisor of the school [...] And it’s also always the school itself.

I’m not, how to put it, an uncritical data-believer, I want to see it with my own eyes [...] And there the first thing is to look at the school, to introduce myself to the principal, to the teachers, to the school community.

Throughout the interviews, supervisors consistently emphasize that relying on datafied structurations alone is not sufficient and stress their extensive contextual knowledge, which mainly stems from their direct contact with schools. This contact takes the form of (sometimes daily) calls with principals, e-mails and regular school visits (with varying reasons). All supervisors emphasize that supporting schools on a daily basis is very important.

Additionally, the supervisors organize a range of non-data-focused meetings with all principals they are responsible for (‘Schulleiterdienstbesprechung’) and in some cases also educational trips, coffee meetings or (in one case) even one-to-one coaching sessions for a struggling principal. These practices of deliberately adding context are notable, especially given the aforementioned tendency of quantified data to remove such context (Piattoeva, 2021). It is these less formalized, refined, everyday interactions with schools to which many school supervisors attribute the most importance for their decision-making, as the following quotes illustrate:

If you really want to figure something out, then the data won’t help you.

I think if you have a trusting relationship with the school, the principal will just tell you where the shoe pinches. And if you don’t, he won’t tell you anyway.

It’s all to do with observation, but not just with data. Instead, conversations are very important, so is feedback, completely different kinds of feedback.

Especially when something unusual happens, I’ll first learn it from the school principals, if it’s really dramatic. And the statistics don’t look as dramatic as the reality sometimes does.

In sum, on a more general level this section reveals that school supervisors have incorporated the provided datafied structurations into their practices, especially with regards to quality assurance meetings. The supervisors use datafied structurations as a starting point to let schools explain the data, at the same time accepting the built-in valuations, but also emphasizing that there is more to schools than the measurable. Moreover, the supervisors regularly qualify the explanatory power of data, actively add their own contextual knowledge and maintain a certain degree of skepticism towards data infrastructures.

5.2 Interactions between varying datafied structurations and supervisors’ professional practices and self-perceptions

After exploring more general effects of data usage in school supervision, this section will explore the differences between datafied structurations and how they interact with practices and self-perceptions. To analyze the different configurations of the datafied structurations and the degree to which they are processed and refined, I develop a systematization with three dimensions, in which the structurations vary from one another: centrality, visualization and modifiability/automation. High *centrality* means that many different data and functions are centralized or combined in one structuration. An example for high centrality would be a data overview that brings together various different data types, like performance data, sociodemographic data and administrative data. *Visualization* refers to the degree to which a structuration highlights certain data; processing data visually, for example, through color-coded tables, graphs or bar charts as opposed to less visualized black numbers in a table on

a white background. Finally, the last property distinguishes how *modifiable* the structurations are by the supervisors and whether data is *automatically* added, analyzed and changed; e.g., coming from a central data base.

In Figure 1, the differences in the configuration of the structurations provided by the respective states are visualized. As we can see from Figure 1, there are two states with higher and two states with lower degrees of centrality, visualization and automation in their datafied structurations. When contrasting the practices of school supervisors in the respective states, the findings in fact indicate substantial differences between those states. An intuitive assumption would be that supervisors provided with the most centralized, visualized and automated datafied structurations in State 1 would experience the strongest regulation of their practices and vice versa.

Figure 1: Differences between the states' datafied structurations according to degree of centrality, visualization and modifiability/automation

State/Properties	State 1	State 2	State 3	State 4
Centrality	high	medium	low	low
Visualization	high	high	medium	low
Modifiability/Automation	high	medium/high	medium	low

However, contrary to this assumption, professional practices are most streamlined around data in *State 2*, where school supervisors mostly rely on PDF questionnaires that schools fill out and PDF overviews on schools' data (see Table 1). Here, the supervisors are aware that the data overviews provide a focus only on selected data. However, the focus provided by the structurations are explicitly seen as positive, an orientation in the vast amount of data available, which helps save time.

I rather see it as an aid to get a quick overview and quickly see if everything is within the normal range. Or if there are really, let's say, deviations. The material and the data are processed so well that you can get a really quick overview.

The State 2 supervisors thus accept the datafied structurations and integrate the view into their perception of good supervision that improving performance test scores improves schools. In this case, both supervisors' professionalism and their datafied structurations are aligned towards what Verger et al. (2019) call test-based accountability. The supervisors here adopt more a managerial approach to their role, every year focusing on a different set of performance data.

This year, we said, we're looking very specifically at primary school [performance data] in year three. [...] So, we've asked schools to take more measures to strengthen the competencies in this area. And at some point, it has to be reflected in the results.

Much like in the high-stakes context of the US (Brass & Holloway, 2021), this re-professionalization of school staff around performance seems to bear fruit, since the supervisors report that schools are trying to improve their performance data themselves. Here, we can see that even PDF overviews and questionnaires can be very influential, when aligned with the professional self-perceptions of school supervisors. This is very much in line with Selwyn (2022), who found that even seemingly unsophisticated data usages can still shape practices in a determinative manner.

In contrast, in *State 1*, with its highly centralized digital platform and PDF data overviews (see Table 1), the supervisors emphasize supporting schools and principals as an integral part of their supervisory practice. They describe themselves as supportive actors who are in tension with the more controlling, managerial logics of the platform (and the Ministry of Education). The supervisors explicitly warn that accountability pressures lead to an erosion of trust and what Landri (2021) calls ‘fabrications,’ where schools are fabricating an image for the supervisors, following all the rules and returning good numbers, without actual improvement (‘Potemkin villages’).

You’ve got to listen in the first place, right? Otherwise, the other party will shut down and you won’t get any school development; instead, you’ll only get Potemkin villages – people then pretend.

Instead, the supervisors highlight the importance of a trusting environment, hearing the schools’ perspective and supporting schools while giving them enough time to solve their problems. The supervisors criticize their platform and feel under pressure, for example by an increasing number of ministerial surveys sent to schools through the platform, which they cannot influence. At the same time, the supervisors use the platform and the focus provided by the PDF overview. Using data to learn about the school is clearly a part of their perception of good supervision. However, while the focus of PDF overviews (and thus their inherent valuations) is accepted, their use of the platform can be described as ‘begrudging acceptance’ (Selwyn et al., 2015).

It’s actually all very formalized now. It’s clear what we have to do, what data we have to take, what data has to be analyzed, what has to be reported. Everything is pretty much bundled together into one package. It’s this so-called ‘controlling’ that people always want here.

The reporting functionalities integrated into the platform are even actively circumvented by the supervisors. For example, one supervisor deliberately takes her notes outside of the designated forms in the platform and discusses them with the principals before inserting them. Thus, the supervisors in *State 1* use the provided datafied structurations, but, in contrast to *State 2*, do not perceive their role to be managerial, instead aiming to provide an environment of trust and support without too much pressure on the schools.

In *States 3 and 4*, on the other hand, the supervisors mainly rely on datafied structurations in the form of data tables, single data sheets or less comprehensive data reports; the platforms are only used for few (mainly administrative) tasks (see Table 1). Consequently, it is the school supervisors themselves (rather than a datafied structuration) who assemble the different data that build the shared basis of the quality assurance meetings.³ Thus, the professional (data) practices more strongly depend on individual supervisors' professional perceptions of good school supervisory practice, allowing for substantial intra-state differences.

In *State 3*, the supervisors follow two different approaches to the utilization of data and its importance for school supervision, illustrating how strongly school supervisors' professional perception of good supervision and the role of data in it influences and shapes school supervision practices. The first supervisor in *State 3*, who places an emphasis on supporting schools, describes how she largely relies on talking to schools and parents to find out if she needs to support schools or intervene in a different way. The performance data is less scrutinized and mostly used by the schools themselves.

So first and foremost, it still works really 'retro' via direct communication. This means that the schools normally get in touch with me when they need support. [...] With regards to data, we only get the schools' [performance data] automatically.

The second supervisor in *State 3*, while valuing phone calls and personal visits to schools, at the same time places an emphasis on managing schools through performance tests, thus also embracing a more managerial approach. She was able to convince her schools to implement additional performance testing and even combines performance data with target agreements, attaching consequences to test results. Due to the low formalization of datafied structurations, she too is able to put her perception of good supervision as involving performance data into practice. Here, much like the supervisors in *State 2*, she follows the global trend of test-based accountability (Verger et al., 2019). However, in this case, since the state has not included this test-based accountability into its datafied structurations, both supervisors have more freedom to implement their own professional self-perception into their practice. In the absence of datafied structurations implementing test-based accountability, the supervisory practices are much more dependent on individual approaches to supervision than in the former states.

The school supervisors in *State 4*, who only use data tables and single data sheets, explicitly reject the type of data-based supervision that focusses only on specific extracts of data and highly visualized, 'processed' datafied structurations. As a result, the state's approach to data-based supervision varies distinctly from the approach in *State 2* (and, to an extent, in *State 1*). As one supervisor stresses, it is important that schools and supervisors view 'non-edited' data (tables).

I look at the data, you look at the data. You might detect something different from what I see. This means: if I have processed the data in advance in a way, so that it supports my conclusions and makes them more plausible, then, the process isn't open anymore.

Here, she directly opposes visualized data overviews as they would lead principals and supervisors in a certain direction and consequently prevent an open conversation on their different perspectives on the data. The supervisor thus criticizes certain datafied structurations for containing substantial valuation (see Hartong & Förschler, 2019) and hopes to avoid such interference by only using data tables. The practices of the second State 4 supervisor also stand in distinct contrast to States 1 and 2, as she uses *all* available data, deliberately *not* focusing on any specific data. This represents an approach to data-based supervision that rejects the focus (= valuation) that comes with data overviews, in this case because it would mean overlooking certain aspects of schooling.

I actually use all of them [the data], because that gives the full picture. In one school, they might very well do good work content-wise and yet the educational stuff might fall short. Or the other way around.

She decided which data sources she would use when her state started to conduct data-based supervision. However, she constantly updates the list of data because she regularly has new ideas as to which data could be useful, for example to find out if a hunch she has is correct. She reports that due to her long experience and deep knowledge of the context, her gut instinct is quite reliable.

Most of the time it fits with my gut instinct, because I have quite a close contact to the schools and because, maybe it's also because I know a tremendous amount of people and I know the structures here well, because I was a principal here myself [...] so I know the connections.

Concluding this section, the interaction between different datafied structurations and supervisory practices is highly dependent on how supervisors perceive their profession. In State 2, where the supervisors' perception of their profession and the datafied structurations are aligned, structurations had a strong influence on practice. However, in State 1 where they were in conflict, the supervisors opposed the more controlling notions of the platform. In the two states with less centralized datafied structurations, differing perceptions of good data-based supervision were able to influence practices even more directly. Interestingly, in State 4, this led to a specific form of data-based supervision that does not focus on specific data, but rather uses all available data.

6. Conclusion

This contribution has explored the enactment of datafied structurations by the profession of school supervisors. Drawing on interviews with ten school supervisors in four German states, the analysis explores (section 5.1) more general influences of datafied structuration on supervisory practices, but (section 5.2) also accounts for the high variance in these structurations and professional self-perceptions of supervisors.

Across the states, ‘data-based’ governance has become a large part of contemporary school supervision. For this purpose, supervisors use different datafied structurations, especially for regular *quality assurance meetings* with schools. Additional to the datafied structurations, supervisors’ perception of their profession influences substantially how data-based supervision is practiced. While supervisors use most datafied structurations they are provided with, most supervisors also engage critically with the underlying data, qualifying, ignoring, and (re-)contextualizing data as they see fit, implicitly or explicitly criticizing the reductive nature of quantified data (see Piattoeva, 2021).

In agreement with research on policy enactment, the paper highlights how data and accountability policies are always locally enacted by education professionals (see e.g., Ball, 2016; Landri, 2021). Consequently, the interviews demonstrate large differences between how datafied structurations are influencing the practices of data-based governance in the four states as well as differences between supervisors’ approaches to ‘data-based supervision.’

As argued extensively elsewhere, using data to (in-)form the (supervisory) gaze shapes and structures what can be perceived as schooling and thus acted upon by the supervisors (see Hardy & Lewis, 2018). However, as this study shows, the relationship between datafied structurations and supervisory practice is not straightforward. First, in the state with the centralized, visualized and automated digital platform, the school supervisors had a decidedly critical stance toward the built-in approaches to data-based governance. Second, while some supervisors embrace the focus (and thus valuation) by the visualized and centralized data overview as (part of) their supervisory gaze, other supervisors emphasize the importance of *not* focusing on specific data and consider all data as a means to get the whole picture. Both aspects highlight the importance of professional self-perception for supervisory practice.

The interviews also reveal that the supervisors integrate rather supportive and rather controlling aspects of school supervision. However, the supervisors put different emphasis on the different aspects, especially the embrace of managerial approaches and test-based accountability differs substantially. The article highlights that professional understandings of good supervision are a key part of enacting datafied

structurations, pointing to the importance of such explorative studies that center the practices of data use by education professionals.

As the analysis further shows, even datafied structurations in the form of PDFs can be very influential when the built-in perceptions of good school supervision align with school supervisors' perception. This highlights the importance of widening the view of critical platform studies (Decuypere et al., 2021) to incorporate seemingly simple PDF data overviews and questionnaires (see also Selwyn, 2022). With regards to the research on German school supervision, there is a need for historical studies that explore the development of the profession of school supervision in hindsight, moving beyond simplistic and normative dichotomies (e.g., of bureaucrats versus pedagogues).

Although (lower) school supervisors have always been hierarchically subordinated to the Ministry of Education (Dederich, 2021), this study adds to the conception of hierarchy by pointing to new forms of hierarchical influence that emerge through datafied structurations. Crucially, while historically, school supervisors might have been able to interpret or discuss demands from higher up in the hierarchy, today, supervisors themselves feel under pressure and are not always able to shield their schools, e.g., from ministerial surveys. This reflects a general development of German school governance towards tighter control through (performance) data (Hartong et al., 2021). With the 'Bonusprogramm' in Berlin, there is already an example of attaching high stakes to target agreements, with resources being dependent on success (Baur, 2016). Future research on supervisors and hierarchical control could benefit from taking these new forms of hierarchical influence through centralized datafied structurations into account.

It is worth noting that until a few years ago, superintendents in the US, like their German counterparts, relied on a mix of experience, data and intuition in a trusting environment, but now test-based accountability is seen to have undermined this very trust (Park & Datnow, 2009; Honig & Venkateswaran, 2012; Datnow et al., 2020). Against the backdrop of this development and the increasing prevalence of test-based accountability approaches in Germany, it is advisable to examine existing alternative methods of supervision like those presented in this study more closely and also to incorporate them into supervisory trainings. Future research could investigate more trust-based forms of supervision as alternative modes of governance, fleshing out the ways in which supervisors create and maintain such trusting relationships with schools. A promising example of such an alternative approach is Hardy's (2021) concept of 'authentic accountabilities,' which could be adapted for the (still) low-stakes environment of Germany.

Due to its explorative nature and its focus on individual supervisors, the present study has only limited explanatory power. Without interviews with principals or

participant observation, this study cannot investigate if supervisors' perceptions of themselves as supportive are reflected by principals. While differences were found between states, because of the small number of school supervisors interviewed in each state, one must be wary of overly deterministic explanations of these differences. In general, it is important to caution against claims of datafied structuration causally influencing supervisors' practice or professional self-perceptions, given their co-constitutive relationship.

In conclusion, school supervisors in this study rely on a mix of datafied structurations, contextual knowledge, professional experience and direct communication in a trusting environment. Although the increasing datafication of school supervision puts new pressures on supervisors and schools, most supervisors are (still) able to put their differing perceptions of good supervision into practice.

Notes

1. I especially want to thank Sigrid Hartong for her support and comments on earlier versions of this paper. I also want to thank my friends and colleagues as well as the anonymous reviewers whose comments on earlier versions helped to improve this paper and my thinking.
2. The project was funded by the German Federal Department of Education and Research (BMBF), project number 01JD1803D.
3. However, this assemblage of data tables is obviously shaped by the possibilities that the respective state school administration provides.

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The role of platforms in diffracting education professionalities

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Abstract

This paper examines the effect of data management platforms on professional educators. The ways in which platforms re-shape new professional patterns of school leaders and education bureaucrats is presented through the data management platform, OneSchool. OneSchool is used across 1,258 public schools in Queensland, Australia. Empirical data were gathered from interviews with senior bureaucrats, policy officers, and school leaders from Queensland's public schooling system. Thematic analysis identified shifts in educational practitioners' professional roles as they performed their tasks through OneSchool. Analysis of traditional school roles and tasks on the one hand and demands of online security and information privacy legislations on the other were brought together in an access assemblage. Access was provided by the authorized allocation of 'roles' embedded into the platform's technical code. A dual perspective of the development and use of the OneSchool platform is used to show how educational behaviors, skills and qualities are mutually constitutive of platformized professionalities. To make sense of these platformized professionalities, a diffraction lens is employed, derived from Barad's (2007) considerations within new feminist materialism and physics. Recalling Foucault's (1983) adage that everything is dangerous rather than bad, this paper provides insight into the positive and negative ways platforms disrupt and re-shape educational practitioners and their professionalities.

1. Introduction

Platforms enable data's reign of supremacy within the digital governance of education by providing the foundation technology to manage data's escalating volume, reach and flow. In doing so, platforms alter the work of educational practitioners and their ways of work (Williamson, 2016). This paper focuses on the lesser explored phenomenon of platforms' effect on the educators themselves. Specifically, the altering of their professional qualities – their 'professionalities' (see editorial of this special issue). The lived experiences of school leaders, policymakers, and bureau-

crats are used to show how educators' professional qualities (professionalities) that is, their abilities, expertise and virtuosity became 'platformized' as they engaged with the platform OneSchool. OneSchool is unique to the state education system in Queensland, Australia, where it has been used for over a decade to manage the data of more than 570,000 students across 1,258 public schools. It was not purchased from the now extensive edu-business market, but rather it was designed and created by members of the government education department. The way the OneSchool platform alters education practices and practitioners is theorized through a diffraction lens (Barad, 2007; Haraway, 2004).

Diffraction is a phenomenon that occurs when waves, usually of light or sound, progress through a gap in an obstacle, to 'diffract' creating patterns similar but different from their previous behavior. I use Haraway's (2004) concept of diffraction as a "mapping of interference" (p. 73), to show where the effects of those resulting different patterns materialize in educators. Barad (2007), who as a physicist considers diffraction as more than just a metaphor, presents the seductive concept of diffraction as showing the "entangled structure of the changing and contingent ontology of the world" (p. 73). As this paper argues, diffraction offers a fruitful conceptual lens to explain the effects of platforms on the 'being' of education practitioner. Education practitioners in schools and governing centers are shown to re-shape as they entangle with the development and use of platforms. The effects created by interference from platforms, materialize in educators' new abilities (technical development), altered expertise (information analytics) and increased virtuosity that led early technical adopters to become education leaders and influencers.

The aim of this paper is to provide critical insights into the ways educational practitioners' professionalities are re-shaped as they become increasingly entangled with educational platforms, and equally, the digital policy that surrounds platformization. I position this paper firstly within the burgeoning literature that exams the datafication of education through an array of education technologies, data infrastructures, and the policies and practices that maintain them (Hardy, 2021; Holloway & La Londe, 2020; Lewis & Hartong, 2021; Selwyn, Pangrazio & Cumbo, 2021b; Williamson, 2021a). This article adds to the body of work examining platforms/data infrastructures used in school systems through empirical data gathered from multiple education actors to provide a macro and micro perspective, examining schools' platforms from an institution-wide and individual educators' perspectives.

The social, political, and technical positionality of OneSchool within the state schooling system of Queensland, Australia, is introduced in the next step, before presenting the theoretical and methodological underpinnings of the empirical study. Building on that framework, two empirical cases are presented: first, key moments and decisions in the *development* of OneSchool. The fundamental model of

OneSchool's development relied not on commercial providers, but on close consultation with educators. These 'subject matter experts' (SMEs) from schools can be regarded as particularly interesting since, on the one hand, they mark an active incorporation of traditional pedagogical professionalism into the development of OneSchool. On the other hand, the analysis shows how these professions became simultaneously re-shaped through working on technical platform development, that is, working within a logic of platformization.

The second part of the analysis shifts the focus to when OneSchool became *embedded in the daily practices* of educators within schools. Here, the analytical emphasis lies on platformization as the allocation of platform specific 'roles,' which not only means specific platform actions made possible for different users, but also authorization for data access. The effects of this role allocation process for educators' professionalism will be discussed. Finally, the entanglements between education professionals and the OneSchool platform are theorized through a diffraction lens to show the ways and means that platforms re-shape and are themselves shaped by the diffracted patterns of platformized professionalities.

2. Positioning platforms within the capaciousness of educational technology

Educational practitioners globally are experiencing significant changes from the ever-increasing capaciousness of educational technology (Williamson, 2021b). The role of digital technologies in the unrelenting drive to improve education through the datafication of schooling is increasing discussed in the literature (Grek, Maroy & Verger, 2020; Hardy, 2021; Lewis & Hartong, 2021; Williamson, 2021b). Current literature hereby recognizes the challenges arising from the datafication of education in governing systems (Hartong, 2019; Takayama & Lingard, 2019), schools (Hartong & Piattoeva, 2021; Nemorin, 2017; Selwyn, Pangrazio & Cumbo, 2021a), teachers (Holloway & La Londe, 2020) and students (Clutterbuck, Hardy & Creagh, 2021; Daliri-Ngametua, 2021; Lupton & Williamson, 2017; Selwyn et al., 2021b). As well as educational actors and the places of education, governance by data permeates the continuum of education from early childhood (Bradbury & Roberts-Holmes, 2018) to higher education (Selwyn, Henderson & Chao, 2018; van de Oudeweetering & Decuyper, 2019; Williamson, 2021a).

Furthermore, the intensifying demand for data-evidenced accountability constituted by the pervasiveness of digital educational governance is sustained within the globalized and increasingly commercialized education landscape (Grek et al., 2020; Hardy, 2021; Williamson, 2021a).

Within this broader literature context, the representation of education professionals and students through current education data, has been found as an imbrication of challenges; surveillance challenges transparency, data flow and accountability challenge privacy and data security, and power and control challenge inequitable representation (D'Ignazio & Klein, 2020; Jarke & Breiter, 2019; Zuboff, 2019).

A comprehensive view of the datafication of education is unfolding as the ways in which data infrastructures themselves are complicit in these challenges is brought into the spotlight (Decuyper, Grimaldi & Landri, 2021; Hartong, 2021; Pangrazio, Selwyn & Cumbo, 2022; Williamson, 2021a). As Pangrazio et al. (2022) explain, the “datafication of education is reliant on the data infrastructures” (p. 3). Recognizing infrastructures and digital platforms not only as useful tools, but as ‘actor’ and ‘key participant’ in educational reforms (Williamson, 2021a, p. 50) enables platforms to be understood as mutually constitutive of the professional educators who engage with them. With educational technology recognized as being key in the global focus on reforming education (Popkewitz, 2018) it is perhaps “unnecessary (or even impossible)” (Lewis & Hartong, 2021, p. 4) to separate the roles of human and non-human participants as they re-shape within the discourse of contemporary education and schooling.

Despite this growing interest in how educational technology and human professionalism relate to one another, at least so far, research still lacks empirical insights into the symbiotic relationships of platforms and educational professionals, that is, *how* and through which mechanisms platforms alter those who engage with them (Lewis & Hartong, 2021; Selwyn, 2021).

This paper adds to the literature to show how platforms alter the professionalities of teachers, school leaders, policymakers, bureaucrats (that is, high level administrators and decision makers). Put differently, as this paper seeks to show, the professional qualities being demanded of these education practitioners as they engage with data, data infrastructures, and digital platforms are shifting, yet in multiple ways and differently depending on the stage of platform development/implementation.

3. Situating OneSchool in the education landscape

Schooling in Australia is constitutionally the responsibility of state and territory jurisdictions and operates within a blend of mandated requirements and autonomous structures that exist between jurisdictions and the Australian federal Department of Education (Australian Government, Department of Education, Skills and Employment, 2022). Federal funding is linked to a variety of federal-state agreements based on the provision of a range of mandated information such as enrolment, behavior

data, and national assessment data (Australian Government, Department of Education, Skills and Employment, 2021).

Accurate and efficient sharing of information between State and Federal education information management systems relies on agreed to interoperability frameworks. Australia's State and Federal Ministers for education endorsed the National Schools Interoperability Program (NSIP), a government and edu-businesses collaboration, in 2009 to govern the use of standardized data categories (Lingard, 2019). The development of OneSchool predated this agreement and the endorsed categories that facilitated data sharing were applied in updates.

In 2003, Queensland's education department commenced a project to purchase networked school information management systems. The previous school information management system (SMS) had operated in each school as a separate program, with school information provided to Central Office through manually activated data downloads. Direct access to the SMS program was limited to school leaders, finance and clerical staff physically based within each schools' administration building.

From 2003 to 2006, unproductive assessment and trials of commercial programs, exploration of private-public partnerships, and an unsuccessful international tender process, indicated that the edu-business field was yet not developed to a stage where it could supply a solution to manage student data across the state of Queensland (Clutterbuck, 2022). Queensland's decision to create their own online school management platform indeed was very different to how other Australian jurisdictions platformized their management of schooling a decade later through government-commercial partnerships.

Dominating the digital governance of Queensland's state schooling system, OneSchool's purpose is predominantly as a school-based, student data management platform. OneSchool is used to manage students' data in primary (elementary), secondary (high school), and special-purpose schools (special education).

Individual student's data such as name, age, emergency contact, health, year level, are entered on their first enrolment at a state school and are used throughout the platform's multiple modules without the need for re-entry. Little human action beyond initial data entry is required to aggregate all student data through state-wide data collection processes. Prior to OneSchool, school leaders would fax student enrolment numbers into Central Office in the beginning of the school year to establish state enrolment numbers. At present, however, school leaders now act merely as 'confirmers' of data, prior to the data's automatic retrieval and aggregation (Queensland Government, Department of Education, 2021).

While available in all state schools, central and regional offices, OneSchool is restricted to state employees who have been authorized and allocated specific roles

within the platform (Queensland Government, Department of Education, n.d.). Authorized access and use is controlled by a range of information privacy and security legislations, state-mandates and school-autonomous decisions (Queensland Government, Department of Education, 2022). As will be shown later in the paper, this access authorization can be regarded as a key mechanism in the re-shaping of educational professionalism. The technical coding of policy into OneSchool is used to direct the actions of teachers and school leaders as they manage a range of administrative, pedagogical and curriculum tasks including student enrolment, attendance, behavior records, and assessment and reporting. At the same time, schools retain the ability to configure aspects of even these mandated functions to reflect their own environment and situation. For example, schools *must* use OneSchool to provide academic achievement reports for parents twice a year, however they *may* choose to report more frequently, and they *may* choose to use OneSchool to record all, some or none of their curriculum and assessment records.

Aggregated data from mandated functions (enrolment, academic achievement, student absences) are available to governing authorities at regional and state levels and are frequently used to inform school reviews and policy cycles. Selected aggregated and anonymized data (enrolment, attendance and behavior) are also made available for national and public access (Australian Curriculum Assessment and Reporting Authority, 2017; Queensland Government, n.d.).

As school leaders and policymakers and technical developers bring policy, technical functions and data together through platforms they become a “relational assemblage of social and material actors” (Decuypere et al., 2021, p. 9), governing educational practitioners and their practices. It is that relational assemblage which this study focused on when tracing how educational professionalism became re-shaped through platformization.

4. Methodological approach

The methodological approach used to identify and make sense of education professions and their practices in relation to OneSchool, drew on the ethnographic perspective of my insider positioning. For my study, I could build on an insider positioning regarding OneSchool, which resulted from different professional roles I experienced through the years of 2005–2019, including roles as a classroom teacher, principal, business analyst, and policy officer. These roles moved me between schools, Central Office, OneSchool project and Regional Office. As an active research participant, the research of my own lived experiences indicated how these (my) different professionalities were re-shaped throughout my entanglement with the OneSchool platform. My long-term personal engagement, experiences, and self-reflections within

the physical and social structures of Central Office, Regional Office, project teams and schools provides a participant's view of what transpires day to day in the complex structures of Queensland's educational system. A broad ethnographic perspective utilizing my own knowledges and experiences and those of research participants, many of whom were past colleagues, provides a view of how real people deal with real situations, within real communities (Blommaert, 2018).

4.1 Methods

Empirical data were gathered from schools, governing policy centers (Central and Regional offices) and technical development projects through ethnographic field notes, policy documents and interviews. Interviews were conducted with 68 participants from three of the five organizational divisions within Central Office, a single Regional Office and four primary schools. The organizational structure of Central Office – Queensland's state education authority's administrative center – is based on a complex categorization of tasks, which are periodically rearranged to maintain alignment with government ministers' areas of responsibility and priorities. The second level of governance in Queensland's state education system is provided by seven geographically determined regions. It was from within a single contributing Regional Office that the four participating schools were located. All schools were regional city primary schools and varied in size from 600 to 1,000 students. School leaders were members of locally determined teams and included school-based combinations of the traditional roles of Principal, Deputy Principal, Head of Curriculum, Head of Special Education Services, and Head of Department. The 'School Leader' participant category reflected each school's leadership organization while maintaining anonymity of individuals. The collected data were thematically analyzed to identify the ways in which the OneSchool platform effected educational practitioners and their practices.

Including perspectives from throughout the hierarchical geographies of Central Office, Regional Office, project teams and schools, created an uncommon and distinct view of the various educational actors' roles and, hence, professional understanding. The term hierarchical geographies (Clutterbuck, 2022) describes the entanglement of human activities conducted through a hierarchy of authorized governance within diverse physical spaces.

5. The (re-)shaping of educational professionalism in the development of OneSchool

Around the early 2000s, a government decision was made in Queensland to appoint a Chief Information Officer (CIO) to the education department. The appointment of a CIO was considered

a key lynchpin ... Education had never had a CIO, they had a director of IT [Information Technology], who did the network and desktop and a few IT type things, but nothing to do with education. (Roger, senior bureaucrat)

Before the CIO role, the IT division within Central Office had little connection or communication with the pedagogical bureaucrats and policy leaders within the department's Teaching and Learning division. As people realized now, however, this focus on IT infrastructure rather than pedagogy had led to

a decade of putting in infrastructure, capturing some data, but now we have oceans of data and very little insight. We've had a decade of 'let's worry about the data!' Well, we should be worrying about the kids! (Roger, senior bureaucrat)

Put differently, the enactment of the CIO was perceived as a desired "cultural change" (Preston, senior bureaucrat) of IT being integral to the pedagogical approaches used in classrooms, but equally of pedagogy being integral to IT development. However, when looking at the rationales of the senior bureaucrats around that time, it is particularly the former which was emphasized. For example, Preston (senior bureaucrat) recalled the need

to get the people in education more responsive [toward the use of technology]. That included teachers, it also included the education department and it also included all of the stakeholders [...] including students.

Regarding governmental investments in hardware, IT-focused voluntary professional development opportunities,¹ as well as so-called VRs [voluntary redundancy² packages], the same senior bureaucrat stated:

We found a lot of teachers for example, didn't really want to get across the latest in computers and quite a lot of them were comfortable in their career and didn't want to change. I don't want to overstate this because there were a lot of really good teachers and there were sections of the teachers' union who were enthusiastic about it. But we actually did get resistance to change. I found that really frustrating. Teachers are crucial to all of this bloody stuff.

To respond to this need for cultural change, the department created a teaching workforce capable and interested in using IT in education, to foster the acceptance and use of digitalized data management systems in schools, and to simultaneously increase access to student data to a wider range of educationalists. As the bureaucrat explained:

To reform [education] ... make it a better world ... what often happens in government is the Treasury wants to manage it ... in the end you can't just rely on figures or data that Treasury come up with you also have to have the educationalists with the same data. Out of that you can end up with a receptive policy.

Interestingly, the grouping of educational professionals around a stronger embracing, but also streamlining of data access brought this group into the process of educational reform, specifically into the process of the OneSchool development.

‘Russell,’ who was a school leader around 2003, recognized that there was “something looming” in the education management space, “we didn’t quite know what. And I thought I want to be on board with that.”

At the school level, it was common around that time that there were physical and philosophical separations between the infrastructure assemblages of ‘IT-management-administrators’ and ‘IT-pedagogy-teachers.’ ‘Nick,’ another school leader, viewed this separation in terms of “who owned what.” Technologies that linked directly to the curriculum and pedagogical needs of schools were considered “the realm of the schools” (Nick, senior bureaucrat). Whereas the “box and wires of IT,” as Nick referred to schools’ government-provided IT infrastructures, including the administration servers and networks, were viewed as being ‘owned’ by the central governing authority of Central Office.

Access to the administration network that contained school and student information was restricted to school leaders and administration officers (AO) located in the school administration building. Teachers, restricted from accessing the administration server were reliant on others, often school AOs, to email or distribute physical copies of student information on behalf of school leaders. Governance of teachers’ access to data and networks through policy and physical placement was, within that context, then commonly considered a system control that actively constrained teachers’ professionalities.

Interestingly, resistance to that power asymmetry had already emerged in schools around the same time the CIO role became implemented in the department. More specifically, school-based professionals (teachers, school leaders) began to develop more autonomous technological systems, which actively sought to develop more technical and data use skills, thus re-shaping their professionalities ‘from below.’ The individually created school platforms indeed facilitated their desired flow of student data, disseminating the information to various actors within the school. However, these actions altered the flow of student data used to meet political or whole-of-organizational data needs away from the authorized data flow processes of older systems.

Within the school governance area of Central Office, the emergence of even a small number of school-developed management systems was partly viewed as a data security risk. At the same time, the ‘cultural reform’ intended from the department drew attention to those educators who were developing growing technological interest and technological skills. It was particularly those educators who the department

consequently brought together in the Management Systems for Schools (MSS) project, the forerunner of OneSchool.

Both, Russell and Nick, the aforementioned school leaders, became part of the MSS project as members of the Guiding Coalition performing as a so-called subject matter expert (SME) and business analyst.

During that time, the education department advertised for “school administrators to go and look at a new system, to test software” (Nick, senior bureaucrat).

Engaging with school-based professionals altered the decision-making environment of Central Office with the MSS project becoming ‘other’ to the traditional IT, data, and teaching and learning divisions of Central Office. This was considered influential in schools’ later acceptance of OneSchool, as Russel explains:

I think they took us onboard because we weren’t Central Office. I think we were both, it was how we were put together, we were people from schools, and we weren’t housed in Central Office.

This comment reveals the importance and relevance of the situational positioning of the future technical development as ‘belonging to schools’ to further show the prioritization of past, present and emerging school-based professionalities rather than those of the bureaucrats of Central Office.

Indeed, testing available programs through the group failed to produce the desired management solutions. As a consequence, the project moved to establishing the business specifications of a new system. To determine requirements a series of workshops, called the ‘As Is and To Be’ workshops (Education Queensland, 2006) were used to gather the technical and pedagogical requirements for the MSS project. Workshops were conducted throughout the hierarchical geographies of the state schooling system to create an assemblage of professional qualities from teachers, school leaders, policy officers and bureaucrats.

Within this context, a ‘Guiding Coalition of Leaders’ was established to clarify and confirm initial project requirements determined through analysis of the workshop data. As coalition members, principals, deputy principals, and heads of department performed as business analysts, quality assurance officers and subject matter experts, using their knowledge and skills to advise on the current processes and needs of schools existing within social-policy-technical spaces. Particular professional qualities were sought in the selection of guiding coalition members:

People who would take on change, who would be change leaders, who had the ear of other people, who had shown that they were willing to adopt new methods. (Patrick, senior bureaucrat)

The guiding coalition brought into the project a deliberately determined assemblage of professional qualities from the pedagogical field of schools; technical affinity and change orientation.

Once the requirements for the new system were defined the next stage of the project focused on selecting options for the establishment of a new platform. Purchasing was the first option however, it was found that while “there was stuff available all over the world, they only did some of [what was required]” (Martin, senior bureaucrat). Other options were then explored:

[We] didn't actually want to be the service provider ... [or think that we'd] have to be the creator of everything. We spent a year going through the value for money framework for public-private partnerships. (Roger, senior bureaucrat)

It is notable that the qualities of the informing professionals had affected the requirements to such a degree that neither of the options, “buy off the shelf” or “public-private partnerships” (Roger, senior bureaucrat) provided any acceptable result. The decision was made to enter a tender process, and local and international technology market were invited to submit a proposal for the creation of a platform that met the established requirements. The tender documents that set out the requirements for the new system were “released to the market in 2004. [We] then spent until the end of 2006 to finish evaluating [the submitted tenders]” (Roger, senior bureaucrat).

The school-based members of the project team now became, somewhat reluctantly, evaluators of the tenders. Roger (senior bureaucrat) recalled the alarmed response when the ex-school leaders were given the task of evaluating the tenders:

They all shat their pants and said but we don't know how to evaluate a tender. [And they were told] you do know how to evaluate; you just haven't done it in IT.

The professional skills associated with school assessment processes where student work is evaluated and moderated using criteria, while not acknowledged by the school-based professionals as being of value in a technological environment, were hereby indeed recognized by the project team's technical and business professionals.

By 2006, key decisions were made simultaneously in interconnecting but separate spaces. The original project team was housed on one side of a building working to create pilot platforms with the top two tenders. Eventually the decision was made “to say, ‘stop’ there was nothing there that we wanted to buy” (Roger, senior bureaucrat).

In the other half of the very same building, a small team of school-based educators (school leaders, teachers, AOs), had been brought into the project by the CIO to develop a “backup plan” (Charles, senior bureaucrat). This team developed a student data management platform based on the programs that had been autonomously developed in individual schools:

In less than 12 months we had built the first version. We had a reporting system, behaviour system, record of contact stuff, in like eight months, and we were in our pilot school in May 2007. (Charles, senior bureaucrat)

The professionalities of the originally school-based platform creators developed to a level where their proposed solution was accepted as outperforming the then embryonic international technology market. The platform was named ‘OneSchool’ and retained the pedagogical alignment with Queensland schools that had been a feature of those early school-developed programs. OneSchool proceeded beyond pilot stage quickly and moved into full production to be launched across the state in 2008.

In summary, this section has shown how educational professionalism underwent several changes within the emergence and initial development process of OneSchool. In doing so, it drew attention to a process of professional change which is neglected when solely focusing on the professional impact platforms have when being used in schools. As the analysis illustrated, OneSchool emerged within a complex, multi-level assemblage of different (state school) actors and logics, which – through being assembled in a particular way – underwent professional change, yet in multiple directions simultaneously (e.g., in the direction of bringing in pedagogical context knowledge from different schools into the platform development process, but also in the direction of becoming tender evaluators). Still, an overall re-shaping of professional decision-making can be identified, oriented towards the creation of a standardized platform which should work across school contexts.

6. The (re-)shaping of educational professionalism in the implementation of OneSchool

Taking a temporal leap, this second analytical section focuses on when OneSchool had become embedded in the daily tasks of educational practitioners across Queensland. Built to provide “access anywhere, anytime” (Martin, senior bureaucrat), OneSchool went beyond previous siloed systems, to provide access to all authorized Education Queensland employees in schools, regional and central office. At the same time, as this section will show, authorized allocation of access became directly linked to alignment of professional tasks with the platform’s functions.

Describing OneSchool through its functions is to catalogue the tasks that educational officers participate in, in relation to the management of students, policy and data. Viewing the organizing headings and categorization of OneSchool’s functions (some of which are included here), from a school site, provides insight into the platformed logic of structuring education: Student (Enrolment, Attendance, Student Profile), Curriculum & Assessment (Curriculum plans, Specific Educational Requirements, Standardized Assessments, Academic Reporting), Behavior Support

(Positive Behavior, Behavior plans) Finance, School Management, Reports (Class Dashboard, School level reports) System Management (Role allocation), Help (User Guidelines and manuals).

Access to OneSchool is recorded in policy as the responsibility of ‘requesters,’ ‘users,’ ‘endorsers,’ and ‘approvers’ (Queensland Government, Department of Education, 2022). The procedures that govern access demand attention:

Unauthorised OneSchool access or misuse of OneSchool information may result in disciplinary action ... This behaviour may also result in criminal prosecution. (Ibid.)

Those who applied for access and those who endorsed and approved access were therefore required to have the professional knowledge and understanding of what access was “necessary, appropriate, proportionate to the key tasks of the requester’s role” (ibid.).

Student data that had previously been governed by access to servers housed in school administration buildings, was now governed by an access assemblage, distributed among different OneSchool roles. More specifically, access to OneSchool relied on an assemblage of information security and privacy legislations, work-place roles (e.g., teacher, principal, AO), the tasks of educators (e.g., creating a school timetable, viewing enrolment data, recording assessment results), OneSchool roles (e.g., level 6 (classroom teacher, level 1 (principal, HOS), enrolment officer) and the tasks coded to align with those roles (e.g., marking the roll, creating a curriculum mark book, viewing whole school attendance reports).

The school-based determination of the alignment of platformized roles and tasks was at times problematic despite the influence throughout development from school voices through the Guiding Coalition, subject matter experts and user feedback. Principals responsible for allocating tasks to staff, were used to making autonomous decisions in their schools, unobstructed by the external gaze that platforms now provided Central Office. As Charles (school leader/senior bureaucrat) explained, prior to OneSchool their school had directly employed a chaplain and a nurse as part of their student services faculty, “we all used to work together for the kids and if there were any issues, we all had the information.” During OneSchool’s development, legal advice restricted access to state employees of Education Queensland:

[We were told] ‘Oh no, you can’t do that.’ I get it, those nurses aren’t a part of DET [Department of Education and Training], not employed by EQ [Education Queensland] so we shouldn’t be giving them access to the data. (Charles, school leader/senior bureaucrat)

Principals were faced with the prospect of disciplinary action if they approved access to the OneSchool platform, which when audited was deemed ‘unnecessary’ or ‘inappropriate.’ All access requests in schools and regional offices are recorded automatically within the platform for audit purposes. Formally auditing OneSchool

access brought the importance of those decisions into alignment with the importance placed on other school decisions audited during school inspections such as curriculum and financial decisions. ‘Jane,’ a school leader explained,

if we’re audited, we have to be able to back up what we’re saying.

School staff were used to taking on tasks beyond their traditional core role of ‘Classroom Teacher,’ for example, if they were responsible for setting up subject timetables required both OneSchool ‘level 6’ and ‘timetabler’ roles. The formal allocation of roles created official recognition of the additional tasks that were previously unacknowledged and unseen parts of their professionalism. For ‘Simon’ this meant the allocation of an additional ‘Financial Delegation’ role to enable him to balance his department finances – which was not standard practice. As Simon explained:

Other people in school like the principal and deputy just throw receipts [to the business manager] in the office and say, ‘do it.’ Whereas they say to me, ‘you can easily do this yourself.’

Schools differentiated the allocation of roles according to their local staffing conditions. Allocating roles, such as Simon’s financial delegation, required endorsers and approvers who were aware of staff’s abilities to complete designated tasks *in* OneSchool. Patterns of professional qualities were recognized as both familiar and changed as they were shaped by pedagogical, policy *and* (now increasingly) technical demands (of the platform). ‘Mae’, a senior bureaucrat in Central Office, recognized these re-shaping as

OneSchool really changing something about the way people view their role as teachers.

Considering re-shaped roles of self and others included finding themselves ‘caring’ for systems and platforms by the constant recording and updating of data. The demands on professionals to care and instruct platforms, rather than their students were noted. ‘Harry’ (school leader), recognised the time teachers were

expected to do OneSchool ... it ties up a lot of their time.

The additional teachers’ task “to do OneSchool” indicates one way in which teachers’ professional roles are platformized. Teachers’ engagement with student and school data, was enabled by the allocation of platformized roles. Their professionalities are thus shaped by their pedagogical and technical abilities to both record and access the data, as well as the platform’s governance of what they can and cannot view or action. As ‘Dana’ (senior bureaucrat/school leader) explained:

[In schools] there’s a lot of conversation around what different roles can see. I would sometimes go into my principal and say, ‘What, can’t you see that [report]?’

‘June,’ a senior bureaucrat in Regional Office, spoke of OneSchool as having “revolutionized our work. It’s a big word, but it’s true.” Simon also spoke of OneSchool in revolutionary terms, recalling the introduction of OneSchool:

It was revolutionary and like lots of revolutions there was blood and gore and everything, but we’ve had a nice peaceful outcome – a successful outcome would be really great.

‘Christine’ (school leader) linked the likelihood of “successful outcomes” to the need for a state-wide “consistent approach.” She was “appalled” when local high schools rejected the use of available student information in OneSchool to prepopulate enrolment forms for parents, saying that

the stress and anxiety that that causes families who don’t have literacy and who don’t trust schools is really sad.

Christine was unsure “if that’s a OneSchool thing or a local school issue.” Christine later added that the pre-population process had “become policy [in the region], but only one high school did it.”

The educators responsible for enrolment at the local high schools can thus be viewed as retaining the same patterns of professional behavior in their management of student enrolment rather than re-forming their professionalities through engagement with the OneSchool platform. Whether they were unable to use OneSchool to create a ‘gap’ through the ‘obstacle’ of enrolment process because they lacked the policy or technical skills, or if school-based policies prevented the use of their skills is unknown. The result, however, was that their enrolment process remained unaltered, as did the pattern of their professional behavior, and parents retained their “stress and anxiety” (Christine, school leader).

In summary, as this section has shown, the re-shaping of educational professionalities continued after OneSchool had become implemented in the everyday activities of the schools. A key mechanism to disentangle this re-shaping process was hereby found in the allocation of authorized roles to not only act on the platform in a specific way, but equally to be assigned with a specific form of ‘caring’ for the platform, as well as to get access to particular data (i.e., key knowledge for decision making). While, on the one hand, former professionalities (see nurse example) were hereby denied access to the platform and, thus, a professional role in the platformized school environment, on the other hand, OneSchool came with new pre-defined roles which had to be ‘filled’ by available personnel, which some teachers perceived as new/extra work. Others reported, however, that through the new role assignment they were able to ‘make visible’ former (e.g., administrative) parts of their work which had already emerged (yet invisibly) before the OneSchool implementation.

7. Concluding remarks

The aim of this article was to draw attention to the re-shaping of educational professionalities during the process of a platform development and implementation process. Hereby, the article did not focus on one specific type of profession (e.g., teachers or bureaucrats), but rather on how the OneSchool platform emerged as a relational assemblage, which brought together different professional groups at different times for different purposes, while transforming these professional groups through this assembling. This closing section argues that the concept of diffraction might be used as a theoretical ‘siting device’ (Haraway, 2004) to position the viewer (reader) to understand how the ongoing platformization of educational professionals is an assembling processes.

Recognizing the diffraction of professionalities in re-shaped education practitioners, focuses attention on the oftentimes illusory boundaries that contour the professional characteristics of ‘teacher,’ ‘school leader,’ ‘policymaker,’ and ‘bureaucrat.’ Diffraction of professional qualities is not a static process but an active ‘doing’ where both human and non-human participants are actively involved in progressing through gaps in the obstacles that appear before them.

In the two empirical situations presented – the development of OneSchool, and the governing power of role assignment on the platform – the OneSchool platform, those who developed it, and those who use it, are shown in the act of diffracting into platformized professionalities. Diffraction occurs when light or sound waves or, as presented in this paper, patterns of professionalities are impacted by some form of interference. Mapping the resulting interference generated as professional educators, on encountering obstacles to their practices find or create gaps through which to progress, creates visibility of the re-shaping of their professionalities. Obstacles highlighted throughout this paper have included restricted access, non-responsive edu-business marketplaces, user knowledge and skill levels. Gaps emerged when access – necessary, appropriate and proportionate – is allocated and authorised, when roles and tasks are identified and when human and non-human vitality are assembled rather than dismissed. In this role, OneSchool is simultaneously implicated in forming obstacles and creating gaps to become an active participant whose own professionalism is diffracted over time. Put differently, over time, OneSchool became an active contributor to education, blurring the lines between human and non-human participants and re-forming existing educational practitioners and their professional qualities.

The professional performativity of platforms is illuminated by their vitality, their ability to “impede or block the will and designs of humans” and to “act as quasi-agents or forces with trajectories, propensities, or tendencies of their own” (Bennett,

2010, p. viii). When schools experienced the obstacle of problematic access and flow of student data, technically capable and orientated educators in ‘partnership’ with platforms created gaps through which both human and non-human participants progressed. These re-shaped educators brought school-based pedagogy into the design process of OneSchool while simultaneously re-shaped policies, procedures and platforms moved into schools.

Digital infrastructures, proffered as new ways for educational actors to manage the demands for data, are implicated in how educational practitioners perform and are made into subjects (Selwyn, Nemorin & Johnson, 2017; Williamson, 2016). Platforms render visible the standards and categorizations of educational professionals, their skills, roles, and tasks to provide them with access *as* platformized professionals. How those standards and categorizations are determined is of importance to education systems globally. OneSchool’s cataloguing of professionalities was determined not by a single external developer governed by market forces and shareholders, but by a collection of internally determined and authorized personnel.

Commercial pressure from edu-businesses seeking access to Queensland state schools are increasing. However, I suggest that it is because of the experiences of having developed their own platform that the diffracted patterns of re-formed professionalities are wary. When asked about the addition of third-party applications accessing schools, Ron (senior bureaucrat) replied:

Can your vendor meet our requirements? Because if the vendor can’t meet the [security, usability] requirements, I don’t give a rat’s, and I don’t want to play with them.

As future educators continue to face the “always-already reconfiguring” (Dixon-Román, 2017, p. 437) world of education, those educators with platformized professionalities are well positioned to utilise rather than be used by the social, political and technological demands of platformized education system.

Notes

1. For example, subsidized digital cameras and handheld devices, government supplied laptops for teachers, digital use ‘awards’, digital license/certificates.
2. Voluntary redundancy provides financial incentives to employees to voluntarily become ‘redundant’ and cease their employment.

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The construction of (good) parents (as professionals) in/through learning platforms¹

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Abstract

The increasing platformization of contemporary education is reshaping schooling in a multitude of ways, including the relationship parents have with their children's education. While a growing number of research is revealing the influential impacts platforms have on various educational professions, few scholars have so far looked at how parents are designed, made visible and normatively regulated (e.g., as being/becoming professional) in/through specific platforms, also because associating parents with educational professionalism seems much less self-evident than for groups such as teachers or principals. As we argue in this contribution, drawing on ongoing discussions from the field of parenthood, studies offers fruitful inspiration to not only better understand what parental (educational) professionalization means, but equally how it can be brought together with research on parental platformization. Building on that literature framework, we then illuminate what we see when employing such an approach empirically, using two distinct learning platforms as case studies – *ClassDojo*, a classroom and behavior management platform used mainly in anglophone countries, and *Antolin*, a reading enhancement platform used in German schools. Drawing on the initial findings from both case studies, we conclude with a suggested research agenda around 'platformized parents' and offer a framework of questions to guide its advancement.

1. Introduction

The last decade has seen an increasing prevalence of 'platformization' in contemporary education, that is, digital platforms around the world are increasingly implicated "in the assembling of education, connecting artefacts, actors, epistemologies, techniques and values into novel educational forms" (Decuyper, Grimaldi & Landri, 2021, p. 2; see also van Dijck, Poell & de Wall, 2018; Perotta, 2021). In the field of

formal schooling, this transformation includes expanding usage of platforms³ for communication (e.g., between teachers and parents, among students, etc.), for administration or management, but equally for shaping pedagogical activities in the classroom, all of it further triggered with the recent and ongoing COVID-19 pandemic (Oliveira et al., 2019; Selwyn, Macgilchrist & Williamson, 2020).

With this rising presence of digital platforms has come an increased interest from researchers in the transformative effects they are having on how education is conducted, experienced, and understood (Decuypere et al., 2021; Hartong, 2021; Manolev, Sullivan & Slee, 2019). While there has, consequently, been a gradual evolution of *critical education platform studies* over the past years (see section 2), there is still much work to do to further sharpen our understanding of what exactly educational platforms ,are,‘ what they ,do‘ (not only) to schooling (DiGiacomo, Pandya & Sefton-Green, 2019), and how they can be researched conceptually, methodologically, and empirically.

In line with the overall aim of this special issue, we argue that one promising, yet equally challenging area of work associated with developing a more nuanced understanding lies in the critical investigation of platforms’ transformative effect on the roles and (self-)understandings of different actors, including the transformation of *educational professions/professionality*.⁴ Indeed, on the one hand, there is a significant body of literature, which has discussed the *usage* of platforms (e.g., in terms of platform-provided educational data) by teachers, principals or state leadership (see Tyler & McNamara, 2011; or Callaghan, 2021, as two of many examples), and which, in that context, has commonly argued for a need to ‘professionalize’ educational actors in the application of technology. On the other hand, little work so far has explicitly discussed the reshaping of these actors *through* digital technologies (but see e.g., Ideland, 2021, for the transforming ‘figure’ of the teacher) and, related to that, problematized the question of what, for example, professionalization in/through educational platforms actually means and how it manifests.

This contribution seeks to address this research lacuna, while at the same time turning its focus towards an actor group which has, at least so far, been largely ignored in critical education platform research: parents (but see Head, 2020; Selwyn, Banaji, Hadjithoma-Garstka & Clark, 2011; as well as Wong-Villacres, Ehsan, Solomon, Builn & DiSalvo, 2017). Indeed, and in contrast to the more unquestioned professional (self-)understanding of teachers of school leaders, the relationship between parents and educational professionalism seems, at least at first sight, much less self-evident. However, when looking into the field of parenthood research (see section 3), over the past years, the notion of parental educational professionalization has become intensively and also very critically discussed as part of the ongoing, global (re-)construction of parental roles (e.g., Jergus, 2018; Jergus, Krüger & Roch, 2018;

Lee, Bristow, Faircloth & Macvarish, 2014; Ott & Roch, 2018). More specifically, parental educational professionalization is hereby associated with a growing understanding of parents (1) as (data) monitors and opportunity maximizers in order to optimize their children's educational success, hereby (2) as active members of 'educational (monitoring) networks' (including the school), but equally (3) as permanent seekers for external advice/support in this process. As we will discuss in more detail below, is it particularly such findings from parenthood research which we view as providing enormous potential also for the critical analysis of educational platforms, that is, to not only better understand what parental educational professionalism 'is' but equally how it might be (re-)shaped on/through platforms (section 4).

As initial examples of what we see when employing such conceptual considerations empirically, in the second part of the paper, we turn to two platform cases we studied over the past years in different cultural contexts: *ClassDojo*, a platform used in many Anglo-American contexts to improve classroom behavior, and *Antolin*, a reading enhancement platform used mainly in German schools (section 5 and 6). Both studies broadly investigated platforms in terms of their regulative power and their effects on schooling, so specific data on parents was limited. Still, interesting precursory insights could be revealed into how parents are actually included, made visible and normatively regulated (as being/becoming professionals) in/through platforms. We summarize these cross-study findings toward the end of this contribution (section 7) and discuss how they may provide a launch pad for future, more systematic research on parents and platforms.

2. Critical education platform research: Towards a more nuanced understanding of regulation

As in the broader research field on platformization, scholars in critical education platform research have increasingly opposed an image of platforms as places of 'open' participation or as instrumental tools which, for example, visualize data for easy usage. Instead, emphasis has been put on (finding new ways of) understanding what platforms 'do' to education (Landri, 2018; Williamson, 2017b; Decuyper et al., 2021), ranging from school monitoring and governance (e.g., Hartong, 2021; Landri, 2018), to school management (Grant, 2017) and classroom practice (e.g., Manolev et al., 2019; Jarke & Macgilchrist, 2021).

A key argument hereby is that each platform enacts a particular *design-based, datafied* and, at the same time, *datafying* form of digital education (Decuyper, 2019, p. 416). Put differently, each element (not) visible or (not) operable on a platform – including the users themselves – can be regarded as the result of numerous political moments of selection and modelling (Bowker et al., 2019, p. 4), all of them carrying

powerful, yet often implicit normative inscriptions (e.g., of ‘good education,’ or ‘successful learning’) (Decuyper et al., 2021). Various design-based mechanisms such as data formatting, default option setting or user choice architecting (aka nudging, see Decuyper & Hartong, 2022; Knox, Williamson & Bayne, 2020) mediate and evoke these inscriptions to/in users, not only when they directly interact with a platform, but equally when interacting with others with relation to a platform (e.g., when teachers talk with each other about students’ platform performance). Put differently, through these inscriptions and mechanisms, platforms affect both cognitive and emotional-affectual dimensions of identity building – such as wanting to be(come) a ‘good platform user’ (Bowker et al., 2019, pp. 2–8). It is such regulative effects that we conceptualize here as the platformization of users themselves.

However, despite their regulative power, scholars have equally emphasized that education platforms should neither be regarded as all operating in the same way, nor as determining how people interact with them (e.g., Hartong, 2021). In contrast, small modifications in design – e.g., which user groups ‘see’ specific content, what exactly is contained in a pop-up window, how easily users can disable particular functions, etc. – can make large difference in terms of regulation. The same is true for various other contextual factors – such as the practical relevance of a platform, individual user dispositions or background knowledge – which affect how platforms, in the end, ‘act’ within educational settings and what effects they produce. Responding to this need for nuanced disentanglement scholars have, more recently, systematized different methodological ‘entry points.’ Such entry points include investigating platform interfaces (‘on’ the platform), their usage (‘with’ the platform), their production and design (‘behind’ the platform) as well as their wider platform ecologies (‘beyond’ the platform) (Decuyper, 2021, see also Dieter et al., 2018, for app methodologies). Such a multidimensional approach simultaneously steps away from viewing platforms as ‘objects’ which can be investigated as a whole. Rather, it is the ongoing interplay of distributed agency and cognition across multiple sites (Bowker et al., 2019) that is regarded as bringing platforms themselves into being and constantly (re-)enacting them. It is such a view that has equally been discussed in critical education platform research as the most promising gateway to shape platforms differently, that is to say, to empower schools to bring platforms into being in a more pedagogically-reflected manner (e.g., Landri, 2018; Macgilchrist, Hartong & Jornitz, forthcoming).

As noted in the introduction, a growing, yet still small number of researchers have recently taken up such a regulation/contextualization-aware view of platforms to also investigate the changing construction or subjectivation of, for instance, students or teachers (e.g., see Selwyn, Pangrazio & Cumbo, 2021; Holloway, 2021; Williamson, 2017a), with few having specifically addressed transformations of teachers’ profes-

sionality (but see e.g., Ideland, 2021; Lewis, 2020). At the same time, those initial studies revealed fruitful insights into how different interface designs (What do teachers see when? How are they nudged into particular cognition or affection? etc.), or manuals from the platform designers shape ideas of professions/professionality (e.g., the teacher as data manager or self-entrepreneur). In doing so, they can offer fruitful inspiration also for the analysis of ‘platformized parents’ and their educational professionalism/professionalization. At the same time, since this relation seems a lot less self-evident than, for instance, for teachers, it seems important to first seek more conceptual clarification, for which we turn to the field of parenthood research.

3. Parenthood research: Understanding ‘educational childhood’ as an object of parental professionalization

With regard to how constructions of parents or (good) parenthood in general, and parents’ relationship with schooling in particular, have been changing over the last decades and centuries, the (rather young) research field on parenthood⁵ (see for an overview Jergus et al., 2018) particularly points to three consequential interlinked transformations.

To begin with, in most countries around the world, parents are traditionally perceived as holding the key – natural – authority and, consequently, responsibility for childcare, while the state is generally responsible for monitoring parents’ fulfillment of these responsibilities, and for intervening in cases when parents pose a risk to their child’s wellbeing (Ott & Roch, 2018). However, as Ott and Roch (2018) show, over the past decades, there has been a significant transformation of how children’s wellbeing and risk are understood in policy and governance:⁶ whereas in earlier times, state interventions were mostly limited to cases of abuse, the focus of the state then shifted towards wide-ranging supportive and preventive measures to foster ‘optimal’ childcare/education, and to evoke the same responsibility among parents (see also Macvarish, 2014). Rose (1999) explains how, through this shift, parents have been allocated ‘social duties,’ that is, that they were increasingly responsabilized with the health, wellbeing, and academic development of their children as a means of state-driven intervention.

While this transformation resonated with ‘neoliberal’ thinking which had been penetrating various policy fields around the world since the 1980s, it equally came together with a gradual expansion of children’s rights. The result was a new construction of ‘good’ parenthood as caring for and educating children in the mode of a partnership and ongoing negotiation, but equally through clear regulations and guidance, and driven by a self-motivation to provide optimal conditions for children’s development. Other literature describes this turn as an ‘intensivication of parent-

hood' and debates the rising pressure and also insecurity this shift has caused for parents who also need to increasingly navigate between dual-career or patchwork family expectations (e.g., Faircloth, 2014; Buchinger, 2001; Wall, 2021).

Independent from this overall parental responsabilization for optimizing children's wellbeing, already since the mid-20th century, the relationship between parents and schools had substantially transformed (Head, 2020; O'Heir & Savelsberg, 2014).⁷ As research has pointed out, it was around that time when the traditional differentiation between school education (= learning) and home education (= disciplining, playing, partly being involved in family work) was increasingly replaced by an equalization of schools and parents to educate children together, both in terms of learning and disciplining (Kirk, 2012). Fölling-Albers and Heinzel (2007) describe this turn as a simultaneous 'familiarization of schools' – meaning that parents became (obliged to be) structurally involved in schools through parental boards and frequent communication with teachers – and a 'pedagogization of families' – meaning that parents were now equally expected to provide learning activities at home, e.g., supervising homework or engaging in music/arts education. Indeed, research indicates an increased parental engagement after that turn (e.g., O'Heir & Savelsberg, 2014, p. 12), mainly directed at children's cognitive development at home, but also a more active involvement of parents in the classroom. In Australia, for example, this emphasis on connecting children's educational success to the partnerships built between schools and parents has been strongly formalized in national policy since 2008. Enacted through the 'Family-School Partnerships Framework,' the policy frames education of children as a 'shared responsibility' between schools and families (Department of Education, Employment and Workplace Relations, 2008, p. 2). Moreover, the policy identifies "connecting learning at home and at school" (ibid., p. 6) as a key element through which strong school family partnerships can be fostered which it associates more broadly with "improved student learning, attendance and behaviour" (ibid., p. 2). All these examples show how parents have, already for decades, gradually moved from standing on the periphery of their children's schooling to performing a prominent role also in their children's formal education (ibid., see also Reay, 2002).

Since the turn towards the twenty-first century and, particularly, the impact of global education evaluation studies such as PISA (Programme for International Student Assessment), both ongoing transformations have joined up and were further empowered with a new global emphasis on education policy as the key to economic prosperity. While homes/parental activities were hereby again – yet now supported through large-scale numerical evidence – found to crucially matter for children's educational success, parents now became equally repositioned around what Jergus (2018) describes as the 'educational childhood' as a new collective 'object of

professionalization’ (see also Killus & Paseka, 2016; Bischoff & Betz, 2015; Head, 2020; Emerson, Fear, Fox & Sanders, 2012). What is meant by this is that the educational success of children has become re-associated with various actors (teachers, principals, parents, but also community-based educational institutions such as libraries, colleges, music schools, etc.) which altogether should install a strong network of partnership to provide optimal learning opportunities (Jergus, 2018, pp. 126 ff.). Importantly, one dimension of this expected partnering is participating in ongoing mutual monitoring and reporting, consultation and information (ibid., pp. 130 f.), which also implies making use of and producing comparable data (see also Seehaus, 2018, p. 194). Jergus (2018, p. 130) describes this shift as a new ‘invocation of parents alongside professional-pedagogical standards,’ (own translation) which means that (good) parenthood is (re-)formed alongside educational success, but – different from the figure of the teacher – imagined in the much more subtle and implicit mode of opportunities, choices and required prevention through monitoring. Still, more than ever before, this invocation has come with a perceived need to *professionalize* (to ‘activate’) parents (Crozier & Reay, 2005), that is, to ‘learn parenthood’ in this monitoring- and opportunity-oriented mode (see also Ott & Roch, 2018). While, again, targeting parents as subjects to be educated on ‘good parenthood’ is not new at all (Rose, 1999), a number of new actors and activities has recently emerged to support this new form of monitoring-oriented professionalization, of which the literature inter alia lists family guides, vouchers for educational activities or childcare consultants (e.g., BMFSFJ, 2021). Put together, within this new figure of professionalization, parents are (only) perceived as professional when they (a) accept their need for external expertise, (b) seek for (numerical) proof to have used opportunities and monitored child development well (Ott & Roch, 2018), and when they (c) agree to continuously collaborate and negotiate with the other educational partners about how to further optimize children’s opportunities (see also Deppe, 2018, pp. 248 f.).

As noted above, alongside this prevalent conceptual work, studies from parenthood research have empirically investigated how parents perceive their changing role as well as the expectations expressed towards them (e.g., Faircloth, Hoffman & Layne, 2013; Furedi, 2002). In this regard, the literature has particularly identified the enormous pressure and confusion parents experience when facing these highly demanding, yet in many ways subtle expectations, and that this often results in an expanding search for orientation and consultation (which, as stated above, is actually part of the professional figure). Unsurprisingly, digitization and the rising prevalence of digital media, in that context, is perceived ambivalently. Whereas parents, on the one side, regard digital technologies as very helpful for giving them (back) some feeling of orientation and control (e.g., children tracking technologies which give

parents the feeling to control the safety of their children, e.g., Kind & Thiele, 2016), on the other side, parents also report digitization as a rising stress factor (e.g., regarding children’s screen time and online security), alongside which parents need to navigate the path to ‘optimal’ childcare and education (BMFSFJ, 2021; Wall, 2021). Lastly, empirical investigations revealed strong differences between parents from different milieus/classes: while privileged parents seem to enthusiastically accept, or even overfulfill their role as educational optimizers, and hereby often doubt the public school system to provide optimal conditions for their children, less privileged parents much more often struggle with expectations and, consequently, are at much higher risk themselves of becoming objects of targeted intervention by the state (e.g., Bæck, 2010; Desforges & Abouchaar, 2003). Taken together, the field of parenthood research has developed a considerably nuanced understanding of the transforming role of parents in education, which consequently offers fruitful orientation in how to conceptually capture the specific meaning of ‘professionalization’ associated with the rising impact of platforms in educational settings.

4. Parents and education platforms: Bringing two research fields together

As section 2 and 3 have shown, both research fields – critical education platform research and research on the transformation of parenthood – provide important points of departure to investigate how parents become constructed in/through education platforms, and how this can be related to notions of professionalization/professionality. All the more so, since, as noted in the introduction, only very few studies have so far brought together educational platforms (or digital education technology in general) and parents. One example is Selwyn and colleagues’ study (2011) which, in accordance to what is discussed in parenthood research, shows how learning platforms compel parents “to act as monitors and guarantors of their children’s engagement with schooling” (p. 314). Ramaekers and Hodgson (2020) come up with similar conclusions, even though their study does not focus on educational platforms, but on parental apps more generally. Still, they state that such apps have empowered the notion of “an instrumentalised, scienticised, skills-based understanding of parenting [in which the apps] provide information, advice and activities to parents and children” (p. 114). Hence, in accordance with what parenthood research has shown (see section 3), parental apps contribute to ‘professionalizing’ parents, yet professionalization mainly means optimizing both their children’s and their own learning through ongoing, app-mediated, visualized (e.g., data dashboards) feedback loops. Since these feedback loops are adapted to individual users’ data input, they hereby create the feeling of personalized interaction and, consequently, are perceived by many parents as a trustworthy orientation (ibid.). Similarly, Cho, Borowiec and Tuthill (2021)

investigated schoolwide system usage of electronic behavior management programs, including ‘digital collaboration’ with families. Their findings indicate that school leaders and teachers indeed saw greater collaboration between schools and families through the use of instant notifications and qualitative notes. Somewhat in contrast, Head (2020), who studied digital home-school relations, mainly in terms of communication, reports new extensive amounts of digital information which parents are required to handle in the sense of ongoing ‘management tasks,’ is a process which she describes as “bureaucratisation of parental involvement” (p. 599).

In sum, even though small in number, the studies clearly indicate that platforms not only mirror, but seem to bring to a new level, what parenthood research has named the ‘educational childhood’ as an object of parental professionalization. At the same time, the aforementioned literature has, at least so far, remained either at a more conceptual level, or used, for instance, interviews with schools or parents to reconstruct their (general) interaction with/perception of technology, yet without investigating *specific* platform designs. Put differently, a lot of work still lies in establishing a simultaneously regulation- and contextualization-aware understanding of the specific *platform mechanisms and operations* (see section 2) that seem to be relevant in terms of (re-)shaping parents and parental professionalism.

Following this line of argumentation, we would like to use the remainder of this article to provide some initial insights into such specific mechanisms and operations when approaching different educational platforms. To do so, we revisited two platform cases we studied over the past years in different cultural contexts: *ClassDojo*, a platform used in many Anglo-American contexts to improve classroom behavior, and *Antolin*, a reading enhancement platform used mainly in German schools. Even though both studies much more broadly investigated platforms in terms of their regulative power and effects on schooling, they also revealed interesting first insights into how parents are designed, made visible and normatively regulated (as being/becoming professional) in/through specific platforms.⁸

5. Empirical insights I: ClassDojo or ‘Make routines at home easy as pie’

ClassDojo (www.classdojo.com) is a platform mainly used to support the management of classrooms, focusing in particular on interventions around student behavior and the improvement of communication within school communities (including parents). Over the past years, ClassDojo has expanded considerably and is now used by millions of schools around the world, with its biggest market shares in Anglo-American contexts (UK, the US, Australia) (see also PR Newswire, 2021). Despite this expansion however, there is a growing scholarly critique directed toward the problematic impacts of ClassDojo on contemporary education. Such critique for

example has referred to the platform's techniques of surveillance (Manolev et al., 2019; Williamson, 2017a), its implication in perpetuating existing teacher bias and prejudice (Jiahong Lu, Marcu, Ackerman & Dillahunt, 2021), its role in promoting new psychological explanations and interventions in education (Williamson, 2017a), the hidden networked digital relations of power which shape ClassDojo user experiences (Robinson, 2020), and the way it reshapes student and teacher subjectivities through the presumptions and ways of knowing encoded within its design (Williamson, 2017a, 2017b).

Indeed, the basic logic of ClassDojo is that teachers give students feedback on the platform in the form of points, which are intended to reinforce or discourage particular behaviors. The points students receive algorithmically accumulate as individual behavioral data and are displayed along-side students' names on the platform. In ClassDojo, teachers can invite parents to create an account which provides them with access to their child's data (e.g., through data dashboards), a direct line of communication with teachers, a way to receive notifications from both the platform and teachers, and ways of engaging with teacher-generated content on the platform.

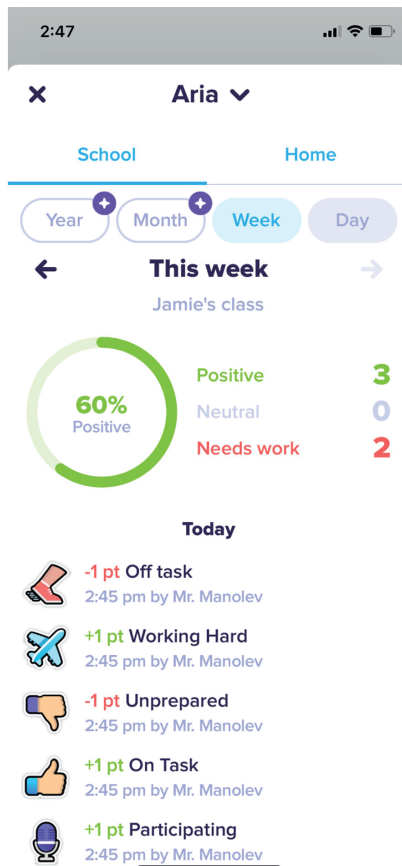
According to the provider, parents are central to the platform and its functions. Through connecting parents, teachers, students, and school leaders the company aims to 'create a positive school culture,' which on the webpage is described mainly as the creation of a collaborative work community. Teachers are hereby actively encouraged by ClassDojo to 'bring every family into your classroom' and to 'connect with families' through the platform.

Parents who use ClassDojo are required to sign up with a parent specific account which links them to their children's data profile (and to any siblings or other parent members of the same family). Parent accounts on ClassDojo are free of charge, however, a premium subscription containing additional features can be purchased (see below). The class and family connections interface displays each class a child belongs to and enables parents to either access an overview of their child's average data, or to 'zoom in' to a specific class. Students, in contrast, can be connected to multiple classes within ClassDojo, each of which stores behavioral data about the student unique to that class.

A student's profile which parents 'see,' is comprised of three separate interfaces, a student profile overview, a student behavior report, and the aforementioned class and family connections. The student profile overview displays the student's name, a monster avatar that represents the student on the platform, as well as an aggregated, color-coded behavior feedback score (see Figure 1). Positive reward points are colored green and possess a positive value, negative points are colored red and possess a negative value. Teachers can modify point values to make particular behaviors worth more or less, as well as give them a neutral value of zero. Notably, this traffic-

light-model, condensed (both graphical and numerical) visualization is a powerful mechanism which not only indicates particular actions (e.g., concentrating on eliminating or avoiding red), but equally particular self-perceptions (e.g., more red indicating poor performance). On ClassDojo, red points are categorized as a metric of ‘needs work’ behaviors. Subsequently, it is through many of these design-based features and functions that ClassDojo implicitly and normatively inscribes what it means to deploy good discipline, be a well-behaved student, and a successful learner (Decuypere et al., 2021). In addition to the summary dashboard, parents can access a detailed data-based breakdown of their child’s behavior in the behavior report.

Figure 1: Student behavior report (data dashboard) in a parental ClassDojo portal



Beyond the idea that parents should have detailed access to their childrens' behavior data, ClassDojo equally establishes an ongoing synchronization between classroom space-times and parents' daily life (which in the material is narrated as 'homes,' but actually reaches much further, since the point of reference is the parental phone). The idea is that parents should be given behavior report data which is updated in real-time whenever a student receives feedback on the platform, or when other (data) activities around the child have been registered. Feedback data notifications typically include the 'name' of the behavior, the color-coded feedback point value, the date and time it was given, and the name of the teacher who awarded the points. As commonly found with apps, notifications even appear when the app is shut down, but still runs in the background. Parents do have the option, though, of disabling push notifications within their account settings.

In sum, we see how the ClassDojo design extends the day to day of school discipline from school and classroom into family homes (aka parents' locations), mediated through a combination of data dashboards, ongoing automated data synchronization and pop-up notes. These combined features not only address parents by encouraging them to stay constantly alert to what is happening on the platform – that is, to how their children behave –, but also, at least implicitly, through potential parental reaction to the ongoing platform notifications via either communicating with the teacher on the platform (they also get a notification as soon as the teacher has read the parental message), or (later that day) with their children about their platform data. Put differently, the notification system can be interpreted as constantly seeking to activate parents to generally and continuously engage with platform data and turn it into a central source of knowledge. In doing so, ClassDojo constructs parents as partnering with teachers in intensive behavior monitoring and disciplining of their children, and to use the platform data for checking behavioral optimization – which also implies to evaluate their own success as parents through that data. The role of the parent is subsequently – in line with what Selwyn et al. (2011) have shown – mainly constructed as an inspector or children's data (Lupton & Williamson, 2017). Both forms of constantly adapting dashboards – the summary as well as the detailed, customizable reports – can hereby be regarded as highly persuasive mechanisms that not only mediate a particular view of the child and their behavior (= 'get a window into your child's day at school,' ClassDojo Parent Account Overview), but also that trigger the affective self-identification of parents.

Notably, and somewhat contradicting the idea of parents partnering with their children for educational success, in the ClassDojo design parents are positioned in relation to their children just as teachers are to students, that is, in a hierarchical relationship which encourages power to be exercised unilaterally around the enforcement of behavior norms. At the same time, however, it is mainly the teacher who,

through creating behavior data or other platform content such as messages in a specific way and at particular points in time, co-regulates *together* with the platform what parents get to see and how they are, consequently, addressed. In other words, while ClassDojo promotes a partnership between teachers and parents, it simultaneously offers an actual empowerment for teachers not only to reach, but also, within the platform design, to regulate “parents at a distance” (Wyness, 2020, p. 164).

In that regard, it seems important to note that ClassDojo’s understanding of parental engagement not only refers to fostering the dataveillance of children, but equally to track all parental activity on the platform. Here, we clearly see how ClassDojo installs a monitoring architecture which affects all participating groups alike and, consequently, implies for *all* actors that engagement in the school community equates to logged activity on the platform (Murakami Wood & Monahan, 2019). For example, whenever parents log-in, view their child’s behavior report, comment on points, or send a message to a teacher data is captured about such activity on ClassDojo and can be used to monitor and further optimize parental platform activities (e.g., optimize nudge interventions to make them respond to pop-up notes).

An additional way of optimization, which ClassDojo intensively promoted, is the premium parent account: *ClassDojo Beyond* (<https://www.classdojo.com/en-gb/plus/?redirect=true>):

Join ClassDojo Beyond: get amazing benefits for your kids at home. Make routines at home easy as pie with Dojo points. Watch your kids reach new heights with Goals and Rewards Plus, kids get access to hundreds of new monster parts! (ClassDojo website)

As we see here, through its premium version, ClassDojo provides parents the option to duplicate and directly apply the disciplinary system used in the classroom by the teacher, in their own homes. We argue that this duplication – even more than the aforementioned regulative activation – carries a strong idea of ‘platformized’ parental professionalization, that is, the construction of parents as home-based educators which, through the platform, are given the equipment to plan, monitor and control the behavioral learning of their children just the way teachers do. ClassDojo hereby takes the role of an expert adviser and facilitator role for parents on how to optimize their children’s behavior (Manolev et al., 2019) which, however, only works if parents are accepting the external expertise of ClassDojo to ‘improve’ their parenting. Parents may do so because, as noted, the idea is impressed upon them to (be able to) act like ‘professional’ (co-)teachers. The platform, thus, can be regarded as an avenue through which a school’s approach to discipline is transposed into family homes, with the role of the parent becoming one that involves more and more platform-based disciplinary practices rather than primarily behavior monitoring.

7. Empirical insights II: Antolin or ‘The teacher stopped the platform when she realized that the moms were getting the points’

In contrast to the global reach of ClassDojo, the Antolin platform was produced by a large traditional German publishing house (<https://antolin.westermann.de>) and is, at least so far, only used in the German context, yet by the vast majority (approx. 85%) of elementary schools.⁹ The self-declared aim of Antolin is the promotion of reading activities and skills. After teachers have signed students up (students or parents cannot do that themselves), students are asked to perform multiple-choice quizzes – mostly as homework assignment – on the platform based on analogue books they have read, each answer rewarding them with positive or negative points. Final scores for each quiz, as well as longer term reports of their performance are displayed to them, while the teacher equally receives comparative data dashboards about his/her students. Furthermore, Antolin includes an automated recommendation system for books to read/quiz, as well as a communication tool for students to recommend books to peers or to collaboratively work on tasks the teacher provided.

The most significant difference between ClassDojo and Antolin in terms of ‘designing in’ parents is that Antolin provides no separate parental portal, so no direct activities are enabled for parents *on* the platform. Consequently, to gain access, parents need to use their child’s profile. Also, the role of teachers is configured differently since they are not judging the performance of students and inserting it into the platform (in the case of Antolin: gaining or losing points in book quizzes). Instead, the students directly interact with the platform interface and are judged by the platform algorithm. Teachers’ activities are, hence, more focused on assigning particular books/quizzes to their students, sending messages to them via the platform, accessing data dashboards which summarize the students’ quiz performances and log data across the class, and awarding e.g., medals that are designed into the platform to students who performed particularly well. This also means that, while the students and, consequently, their parents can only see their individual score(s) on the platform, teachers often communicate comparative scores in their classes, and some (yet only a few) equally use Antolin scores as part of the course grading.

Interestingly, despite the substantially different design, the Antolin provider stresses a quite similar vision of parents as participating in Antolin as found in ClassDojo, namely to bring schools and home environments closer together in supporting the learning of children. Hence, just like in ClassDojo, in the platform material parents are addressed as key actors to ensure the platform’s successful realization (‘Antolin is not thinkable without parental collaboration,’ Hoffmann 2021, own translation). But what, then, is meant by that in the case of Antolin?

First and foremost, it means that the integration of parents into the Antolin platform mainly relates to the field ‘beyond’ the platform, that is, the active fostering of activities which may affect children’s platform interactions and performance results. Yet, such broader activities can nonetheless carry powerful normative inscriptions of (good) parenthood, even though there might not be a parental portal for acting *on* the platform.

The most prominent activity is, of course, organizing the books children want, or are required to, read/perform quizzes on, either from libraries or bookstores. However, in our analysis, we found many other types of activities and also different ways of prompting parents to engage with the platform in a particular way, yet mediated much more strongly through the teacher. For example, while ClassDojo directly sends popup notes and reminders to parents’ phones, teachers can find standard letter drafts for parents on the Antolin webpage which encourages them to follow the work of their children on the platform, to recognize the performances, to ‘praise much’ and to ‘celebrate successes’ (webpage Antolin, own translation). Also, the platform provides various add-on modules such as ‘reading effort’ (= *Lese-Fleiß*) or ‘reading pass’ (= *Lese-Pass*), with each requiring particular beyond-the-platform activities from parents. Examples include measuring how long the child is reading or signing a document after the child has completed a particular reading time, and to pass that information on to the teacher.

Another interesting activity that parents are encouraged to engage in, relates to workings that occur ‘behind’ the platform, namely the submission of potential book quizzes to the publisher. However, not only do the parents compete here with various other submitters, but it is the publisher who decides whether or not the quiz is selected for the platform. While we did not collect more detailed data about this parental activity of quiz creation in our initial study, the idea alone that parents can actually contribute to generating (platform) content for classroom activities, yet in a highly prescribed form, seems to be very interesting also with regard to the discussion on professionalization.

While the material we found on Antolin to a large extent promotes how parents can and should support the platforms’ usage or even contribute to its further development, there are also quotes which evoke a quite distinct vision of parents, as the following example illustrates:

The emotional life environment of the family marks the precondition for a beneficial, inspiring and successful reading/learning space. Ideally, parents read books themselves, value those and frequently make books a subject of conversations. Through acting as a personal role model, parents automatically integrate their children into the world of literature and stimulate more impulses around books and reading than any teacher could achieve through his/her number of classroom lessons – however high that number may be. (webpage Antolin, own translation)

Indeed, here we not only clearly see how reading as a cultural practice (‘integrating children into the world of literature’) is turned into a ‘learning space,’ but equally how parents are responsabilized to ‘stimulate more impulses around books,’ because they have, as the quote emphasizes, more opportunities in their homes than any teacher could have in a classroom. This also means, however, while the platform interface design does not include parents directly, the ‘mode of opportunities’ in which parental professionalism is created and linked to the ‘educational childhood’ (see section 3), still clearly manifests in the platform material.

In contrast to the ClassDojo study, the study on Antolin equally included data on how parents talk about Antolin, that is, how the platformized construction of parents is perceived and which activities are reported. It seems important to note, however, that the data collection only reflects particular forms of parental voices (154 posts from parental online forums as well as 5 semi-structured interviews). Still, it offers a number of interesting insights.

In general, the data indicate that many parents assess Antolin quite positively, for example with regard to its ability to motivate their children’s reading behavior. Such parents report to not only engage highly in supporting the platform usage, but also enforce and extend the numerical logic of the platform beyond the interface. As an example, some of our interviewees stated that they actively inform themselves about the scores of their child’s classmates and, based on these scores, evaluate the performances of other parents or themselves. Here we see how parents indeed adopt a strong self-understanding as permanent and comparatively oriented monitors of their children’s data as a perceived value of educational success. Some parents even reported completing the quizzes on the platform themselves in order to ‘boost’ their children’s scores, which indicates that these parents experience high pressure to proof their children’s educational success through the platform’s logic of valuation. Some teachers, then, were reported in the forums to react quite strict to such manipulative behavior:

In our case, a highly annoyed class teacher stopped Antolin when she realized that the moms were getting the points. (F3B13, parent webforum comment)

However, there are also parents who observed Antolin very critically. In addition to concerns about data security, the validity of the reading performance assessment by the platform was questioned (when seeing parents around who do the quizzes themselves). The strongest concern of parents, however, was found to be related to the quantification of reading in the form of competitively oriented scoring (especially when medals are awarded or the scores used for grading). Some parents clearly stated that reading should be fun and that schools are already competitive (enough) due to pressure to perform. Consequently, they are very worried to see their children’s attention shifting towards gaining points on Antolin – which often comes along with

increased screen time –, instead of reading because they want to. In a few cases, concerns or aversion to the platform cause parents to explicitly prohibit their children from participating in Antolin. It is the presence of such critical views on Antolin which may point to parental struggles with different (self-)expectations and, consequently, with the high complexity of being a good parent. Importantly, beyond parents who either enthusiastically follow or criticize the platform, we also found parents who are not interested in the platform and who consequently do not engage (as intended), simply because they do not care.

8. Discussion and outlook for future research

The aim of this article was to provide a contribution to the investigation of education platforms' regulative potential, particularly with regard to the roles and (self-)understandings of different actors participating in education. In particular, we hereby problematized the transformation of educational professions/professionality, and, within this 'problem space' (Lury, 2020), focused on parents as a group of actors which is – with some exceptions – still widely neglected in the field of critical education platform studies. Consequently, with this contribution, we aimed to fill that gap by providing a multidimensional discussion on how parents (may) become inscribed in(to) school platforms and how this relates to, or implies, particular understandings of professions/professionality.

Therefore, we first provided a summarizing literature review, bringing together recent developments in critical education platform studies with ongoing research on (transforming) parenthood. While the former has, over the past years, developed a profound understanding of the regulative, yet non-deterministic power of educational platforms, as well as on methodologies to study them, the latter has intensively discussed the gradual, multi-layered transformation of how parents' discursive, social and political 'positioning' occurs in relation to their children's education. Of particular interest hereby is a growing discussion on the educational childhood as an object of parental professionalization (Killus & Paseka, 2016; Bischoff & Betz, 2015; Head, 2020; Emerson et al., 2012), which indicates an expanding understanding of parents a) as (data) monitors and opportunity maximizers in order to optimize their children's educational success (and to act early to prevent educational failure), and b) as active seekers for external advice/support in this process. Building on this literature overview, we argued that bringing together both fields of research offers enormous potential for studying the 'platformization' of parents.

In the second part of the paper, we then turned towards two empirical case studies – the *ClassDojo* and the *Antolin* learning platforms – to illuminate which initial empirical findings with regard to platformizing parents we could reveal (also as poten-

tial starting points for further investigation). Hereby, a range of similarities, but equally interesting differences between the two platform cases became visible. In general, the empirical insights confirm what the literature indicates: platforms matter and they successfully trigger particular parental figures, activities, communication, and self-understandings. While ClassDojo hereby more directly ‘designs parents in,’ and equally tracks their platform activities, this does not mean that in Antolin parents are less relevant for the design, even though parental activities are much more focused on the ‘beyond’ the platform. Similarly, even though ClassDojo’s premium edition may rightly appear as a powerful further step to address and activate parents as dataveillors, Antolin equally, yet in a more indirect way, fosters a platform-aligned parent-child interaction (here: about reading) at home. However, as our data on parental reactions to Antolin showed, there are large differences in how parents ultimately perceive the platform and in how far they actually follow the inscribed parental activation (as noted above, since we did not include usage in the ClassDojo study, there are no options for comparisons at this point).¹⁰

As our contribution has further shown, educational platforms not only suggest greater control on children’s education, but equally more options for parental participation. However, when looking at the platform operations and mechanisms, parental participation seems to mostly refer to following a given design within adaptable scopes, rather than to an actual involvement in platform-relevant decisions or design issues (see also Selwyn et al., 2011, p. 322).

Summing up both the literature review and these initial findings, we would like to end this contribution by suggesting a future research agenda on education platforms and parents/parental professionalism and offer the following framework of questions to guide its advancement:

- (1) How are parents ‘designed’ into platforms, that is: what do they see when, what are they supposed to do, and how are they supposed to see themselves in/through platforms? What kind of (good) parenthood in general, and parental professionalism in particular, is, consequently, constructed in the design?
- (2) How does material about the platforms/how do designers speak about (good) parents? Do they use the idea of professionalism? Does the idea manifest in a subtle way?
- (3) How do contextual distinctions between different platform designs manifest with regard to parents and what does this mean for the construction of (good/professional) parenthood?
- (4) What do we see when disentangling parental ‘usage’ of platforms, both in terms of direct interaction with the platform, and in terms of communication/interaction with others with reference to the platform?

Inspired by the ongoing methodological discussions for platform research (see section 2), this research agenda seeks to enable investigations from multiple perspectives and methodological entry points, thus fostering an understanding of platforms as simultaneously regulative and ongoingly contextualized. In doing so, it may contribute to a further conceptual, methodological, and empirical elaboration of research, which speaks to critical education platform research and parenthood research alike.

Notes

1. This work was supported by the German Research Foundation (grant number HA 7367/3-1) for Sigrid Hartong.
2. Jamie Manolev is working at the Centre for Research in Educational and Social Inclusion, UniSA Education Futures, University of South Australia, Adelaide, Australia.
3. We use the term platform here to bundle together what is equally discussed as school management and monitoring systems, learning apps, website usage, online courses, videoconferencing tools, etc., since all of them operate on similar logic.
4. Which is, hence, closely related to being constructed as a ‘good’ teacher, ‘good’ principal, etc.
5. This refers to parenthood studies as a stand-alone research field. Of course, research on families or childhood is much older.
6. Unsurprisingly, this transformation falls together with decreasing numbers of children per family, which also intensified the role parents play in family constellations.
7. Literature here points to large similarities between western countries, while the role of parents and schools might look quite different in, e.g., Asian countries (see Busse & Helsper, 2007, p. 336).
8. The studies combined methods of interface and ‘walkthrough’ analysis (see Light, Burgess & Duguay, 2018) with analyzing material such as the public platform websites, platform descriptions, material from the school homepages, but also interviews with teachers and (in the case of Antolin) parents as well as (in the case of Antolin) data collection from parental online forums. For methodological details on both studies’ data collection and analysis see Manolev, forthcoming, as well as Förschler, Hartong, Kramer, Meister-Scheytt and Junne, 2021.
9. Some secondary schools use the platform as well, but the market share with elementary schools is much higher.
10. Noteworthy, a crucial dimension was not investigated in the Antolin study, which is the influence of different parental milieus as well as cultural differences.

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Afterword: Platformed professional(itie)s and the ongoing digital transformation of education

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As this special issue illustrates, teacher professionalism stands at a crossroads of multiple influences. Well-documented trends like pervasive managerialism and punitive accountability are now going hand in hand with datafication and the rise of ever more powerful technologies for surveilling activities and performance (Williamson, 2017). Indeed, the expert professional practice of education is now increasingly organized around the demands and affordances of platformed governance, with obvious repercussions on professional and personal identities. In their editorial, *Hartong* and *Decuyper* set the scene admirably by addressing the definitional vagueness that surrounds the study of platformization in education, proposing a taxonomy based on three key features:

- a) the presence of pervasive digital architectures that include dedicated *Graphical User Interfaces* (GUIs) and, perhaps more significant, *Application Programming Interfaces* (APIs) which underpin datafied infrastructures where functionalities, affordances, and even other platforms interoperate (Helmond, 2015; Snodgrass & Soon, 2019; Venturini & Rogers, 2019)
- b) a discourse of boundless intermediation, which promises enabling connections between actors, data and contexts but conceals a distinct form of power that manifests in the regulation of access and the (biased) streamlining of informational flows (Gillespie, 2018; Hartong, 2016; Rahman & Thelen, 2019)
- c) the existence of socioeconomic arrangements devoted for the most part to the extraction of value from engagement, affect, cognition and rapidly colonizing other aspects of social and biological life (Beer, 2018; Langley & Leyshon, 2017; Zuboff, 2019)

There is another perspective that, in hindsight, can complement this account – one less focused on the taxonomic analysis of platformization and more on the conditions in which it emerged. These conditions can be described as the concurrence of institutional mimesis and parasitism, whereby platforms rapidly adapted to and then mimicked established socioeconomic orderings. These orderings historically produced great amounts of value for their members, but their contractual and ritualistic over-complexity placed limits on who could access and appropriate such value. Ethico-political arrangements had to be developed over time with gatekeepers, guarantors, legal protocols, tacit rituals and so forth. Platformization reshaped these arrangements, configuring proprietary infrastructures as the main regulators of pre-existing networks of value, and reorganizing the relationships between people and resources along individualistic lines that invite to bypass complex relational and contractual entanglements in the name of speed, efficiency, and personal gain: just plug yourself in and play.

This has led to multiple consequences in the sphere of professional work, including the acceleration of precarity, the rise of digital micro-entrepreneurship and a general capitulation to pervasive managerial surveillance. Among these consequences there are problematic changes in professional subjectivities, with the rapid rise of forms of hyperindividualism where people no longer see themselves as part of disciplinary communities and value-based traditions, but as semi-entrepreneurs focused on improving their own relative position compared to others (Warner, 2022). *Lewis and Decuyper*'s notion of 'projectification' (this issue) is an empirical manifestation of this phenomenon, which subsumes multiple aspects of professional practice under trajectories of self-improvement and networking, with personal projects folding into larger institutional and policy projects to create a never-ending, inevitably alienating, search for excellence and distinction. *Lewis and Decuyper* rightly argue that this totalizing 'project form' has become an omnipresent feature, and that our existences are increasingly goal-oriented endeavors where outcomes are quantified, efforts tracked and where time is channeled in the interest of efficiency and accountability. It is little surprise then that entire ecologies of platforms and apps have adopted the project as an individualistic framing for action: self-improvement projects, fitness projects, financial autonomy projects, career and entrepreneurship projects and so forth. After all, the demands and affordances of digitization are perfectly aligned with projectification, understood here as an ontological and epistemological re-configuration based on the re-formatting of space, time and relations. Social life is thus operationalized, often arbitrarily, as a collection of behavioral proxies and then molded through structures of reward: achievements, badges, credits and all the other signifiers of 'project success.'

Yet there is no room for facile determinisms here, as multiple forms of contextual usage and (re-)interpretation can be empirically detected, with much diversity and localization occurring across national contexts or within distinctive sociotechnical arrangements, i.e., a specific platform or policy initiative. *Dabisch*, for instance, examines the interactions between ‘datafied structurations’ and educators’ professional self-perceptions in the German context. The argument, in this case, is that pervasive datafication is shaping the culture and practice of school supervision, which is an area distinct from teaching but still a central and established form of expert educational practice. The notion of structuration assumes that data and platforms exercise an influence on agency, but *Dabisch* is well aware of the deterministic pitfall lying in this argument, so he rightly acknowledges the contextual factors and subjective dispositions that moderate professional enactments (see also Landri, 2021). A familiar tension is thus played out with the supervisors adding interpretive nuance to the datafied formations. The distinction between the different properties of structuration is also useful from a descriptive point of view: centrality, visualization and modifiability/automation. The latter one is probably the most interesting as it suggests a dynamic relationship between data representation and agency, with a spectrum from fully customizable to fully automated.

The structuring function of platformization is again placed front and centre in *Clutterbuck’s* article, which proposes ‘diffraction’ as a framing to describe the alteration of professional practices as they travel through the prism of digital infrastructure. Diffraction is a valuable analogy because it captures something of the dynamic interaction between physical and perceptual qualities; it effectively complicates the narrative of structuration as agency is fragmented and becomes reconstituted in often problematic, but never simplistic ways. Indeed, *Clutterbuck’s* educational actors are not mere spectators of their own diffraction but are fully involved through an amalgam of deliberate entanglement and occasional resistance. In the Queensland-specific OneSchool case study, changes in the professional make up of teachers and leaders are visible but they are not a simple matter of top-down imposition: choices were made, and paths were taken as part of an attempt to engage with calls for standardization and datafication, while retaining local and sometimes resistive connotations. This negotiation is apparent in the second part of *Clutterbuck’s* account, which focuses on how the ‘OneSchool actor’ interfaced with professional decision making. Issues of implementation, acceptance and adoption are thus brought to the fore, with access protocols in particular influencing organizational structures and the division of labor, creating a fragile alignment between professional competence and digital affordance: only those with the ‘right’ qualifications could request access to certain functionalities, leading to structures within structures as technical responsibilities (requesting or approving specific technical functions) blended with educational ones

(see also Perrotta, Gulson, Williamson & Witzemberger, 2020). Once more, the goal is to rescue agency without shying away from the regimentation and disciplining effects enacted through and by the platform. Diffraction is therefore framed as an active ‘doing’ that binds humans and non-humans, leading in some cases to a productive sense of ‘wariness’ among educators who are committed to using the system while remaining suspicious of its weaknesses.

The ever-shifting terrain of structuration is again explored in *Hartong* and *Manolev*’s contribution, which brings its own fresh perspective by tackling a most interesting issue: the educational professionalism of parents. The article effectively bridges the critical study of educational platforms with literature on parenthood studies, proposing the notion of ‘platformed parent.’ The authors remind us that platformization has not caused a transformation in parental responsibilities in education. This transformation was the result of a slower process of intensification which coincided with the extension of educational remit into personal and emotional well-being, as well as the growth and diversification of academic curricula. As a result, parents and guardians have been implicitly allocated formal and informal duties relating to discipline, motivation and performance. Platforms have simply adapted to these historical transformations, enabling and accelerating the recruitment of parents in processes of datafied surveillance; they re-socialize and re-educate parents by requiring habituation to the digital infrastructure and a functional alignment with formal assessment procedures. The concept of platformed parenthood will surely resonate with those navigating first-hand the many parental responsibilities of modern education, with dinner-time household discussions moving away from the age old ‘how was school today?’ to morph into a much more professionalized discourse about tasks, deadlines and performance profiles, enabled by dashboards and other reporting mechanisms that blur boundaries between home and school. Once more, however, Hartong and Manolev choose to operate in a multidimensional and relational framework that refuses to see platforms as mere structuration devices, but as inchoate assemblages with multiple cracks and fissures. These ambivalences can enable more appropriative and emancipatory enactments, where platforms surely nudge – sometimes in insidiously oppressive ways – but can also be nudged.

Looking ahead

Something hinted at but not fully explored in the special issue is the involvement of platform logics in the partial automation of educational work. This problematic seems poised to become more prominent in the near future, but it is important to proceed with caution. A short detour through macroeconomics may help frame the topic productively in the current discussion. The word automation conjures up sce-

narios of technological pervasiveness (e.g., ‘robots in the classroom’) which may be suggestive but do not reflect the current trajectory of platformization so effectively documented in this special issue. A terminological clarification is needed. Work automation involves two rather different scenarios: the first entails the development of software or hardware systems that can augment social practices; the second is based on the creation of autonomous, self-organizing systems that can completely supplant humans in a particular line of work. This distinction has been captured effectively by Benanav:

with labor-augmenting technologies, a given job category will continue to exist, but each worker in that category will be more productive ... By contrast ... no matter how much production might increase, another telephone-switchboard operator or hand-manipulator of rolled steel will never be hired. (Benanav, 2019, pp. 9 f.)

In his analysis, Benanav reports oft-cited research (Frey & Osborne, 2017) which suggested that 47 per cent of US jobs are at high risk of automation. A recent OECD study (Nedelkoska & Quintini, 2018) made a useful distinction between global jobs that are likely to become fully automated (15%), and jobs which are set to undergo significant labor-saving and task-specific automation over the next years (32%). Similar forecasts have been proposed in relation to teaching. According to a recent report from McKinsey Global Institute (Madgavkar et al., 2019), more than 40 per cent of tasks performed by primary educators (most of whom are women) during a typical workday could be automated, resulting in the need to develop new skills and develop familiarity with platforms and the algorithmic systems that operate within them (ibid.).

Benanav’s distinction between full (‘lights out’, i.e., requiring no human presence so that lights can be turned off) and partial automation is another helpful compass to navigate the debate. To begin with, lights out automation is not a 21st century novelty but is part of a techno-utopian imaginary, which spontaneously re-arises whenever “the global economy’s failure to create enough jobs causes people to question its fundamental viability” (Benanav, 2019, p. 15). The traditional logic, in this argument, is reversed – it is not the unstoppable pace of *Artificial Intelligence* (AI) innovation that fuels the automation imaginary, but the consequences of well-documented cycles of economic stagnation and under-productivity. An ideological myopia to these structural weaknesses of capitalist modes production generates, according to Benanav (p. 38):

the upside-down world of the automation discourse. Proponents of this discourse then search for the technological evidence that supports their view of the causes for the declining demand for labour. In making this leap, the automation theorists miss the true story of overcrowded markets and economic slowdown that actually explains the decline in labour

demand ... Technological change then acts as a secondary cause of a low labour demand, operating within the context of the first.

Following this argument, automation will or will not take hold in a sector depending on two intertwined reasons. The first reason has to do with output demand; in lines of work where there is a growing demand for productivity there will be a stronger tendency to absorb human work and little appetite for automation. Concomitantly, in sectors with low productivity-growth rates there will be incentives to automate – not to liberate workers from daily toil, but to manufacture conditions of under-employment as part of cost-saving strategies. The second reason has to do with the inherent nature of human activity in many productive and professional settings. Not all tasks can be automated, and indeed there is a correspondence between the nature of work in large labor-absorbing sectors and the lack of automation. For instance, automation has not impacted in any significant way on textile work (sewing) and, notably, on first-link electronic assembling, which occurs before electronics are sent further up the productivity chain towards more ‘advanced’ automated factories. Applied to education, this line of reasoning has two consequences. Firstly, the strong societal demand for teaching as a form of work (UNESCO, 2016) is the first factor to consider when speculating on the future of automation in education: the higher the demand, the less automation will be a viable proposition, because societies benefit greatly from sectors that can absorb human labor. Employed humans, however inefficient or hard to govern, produce healthy economies. Alongside this macro-economic reason, there is the nature of pedagogical practice which cannot be fully automated because it remains stubbornly relational and embodied to a considerable degree – a ‘form of life’ and an adaptive component of the human experience, manifested in multiple forms during the life course, sustained by an evolutionary and biological substratum and deeply embedded in linguistic and value-based traditions.

With these structural and ontological (relating to the nature of pedagogical practice) factors in mind we can now return to the topic at hand: platformed professionalities. What we are left with is a view of automation as cybernetic governance – a form of control that does not pursue human replacement, but standardization, docility, and the stultification of practice. This is more akin to the notion of *automated decision making* (ADM), described as a sociotechnical paradigm driven by ‘cascading logics’, which proceed in a cumulative fashion until they gather pace and eventually reshape entire fields of cultural production and professional practice (Andrejevic, 2020). While ADM may streamline human activity and make many tasks less onerous, it also generates new trivial tasks that demand people to coordinate effectively with a plethora of platforms and data-based administrative systems. According to OECD research from 2018 (Thomson & Hillman, 2019), teachers’ workload is increasing in most ‘developed’ countries. The international average (across

30 nations) was 38.8 hours a week, with many countries exceeding this average, for instance Japanese teachers clocking an average of 56 hours a week, and several English-speaking countries (US, Australia and England and New Zealand) sitting above 40. The average working week for Australian teachers also increased by 2.1 hours since the previous survey was conducted in 2013. The main reasons for this increase are bloated reporting requirements, having to coach students for standardized testing, and other established professional duties like planning lessons and general administration. The key point is that such tasks are already considerably hybrid, requiring multiple human-machine interactions with institutional *Learning Management Systems* (LMSs), apps, dashboards, and databases. In other words, there is already a significant amount of task automation occurring in formal educational settings, which however goes hand in hand with the growing labor demands placed upon teachers. Thus, the true horizon of automation – and its relevance in the present discussion about platformed professionalism – becomes apparent: not lights out automation, but the capture of educational practice and leadership in the name of managerial accountability.

Alongside these issues, we must examine the consequences of automation on the ‘pedagogical decision making’ routinely performed by educators. The risk here is the undermining of the educational sensemaking that emerges organically from many routinized tasks (Selwyn, 2021). As Selwyn argues, the automated educational decisions enabled by platform logics and AI often elide small acts of autonomy which may produce valuable pedagogical insights, for instance when a teacher uses the daily rollcall as a pretext for establishing rapport at the start of the day, and to ‘set the scene’ for pre-planned instructional activities. This, Selwyn contends, reflects a trend detectable throughout the empirical literature: ADM often seeks to automate “practices that operators do not consider automatic” (O’Grady, 2021, p. 238). Without dismissing that many aspects of pedagogical work could be safely offloaded onto automated systems, we ought not to forget that there are epistemological and indeed formative dimensions associated with many labor-intensive processes, which could lead to more informed and ethical educational decisions. The choice perhaps should not be between an overwhelming burden and an automated one, but between technological systems that foster pedagogical sensemaking in a context of supportive and non-exploitative labor relations, and systems that unwittingly (or worse, deliberately) thwart it. From this perspective, it may be warranted to contemplate the actual ‘professional harms’ that materialize under conditions of datafied governance, which exercises dominance over practice through a pervasive and deceptive demand for compliance through the modification of ‘choice architectures’, i.e. carefully engineered nudges which reflect a fundamentally paternalistic view of labor control (Decuyper & Hartong, 2022).

At present, the magnitude of these shifts in the labor of teachers should not be overstated, especially when education is compared to other sectors where automated decision-making is already deeply embedded. Nonetheless, there are clear signs of this trend owing to the ubiquitous involvement of digital platforms in multiple aspects of teacher performance and accountability. With the prospect of task automation and automated decision-making gathering pace, a crucial challenge for platform studies in education over the next years will be to critically examine forms of delegation that undermine personal and social accountability, exacerbating educational harms ‘downstream’, that is, at the point where the behavior of an algorithmic model (to predict, to classify, to evaluate etc.) meets real life. For example, in the context of *automated essay grading* (AEG) a teacher may delegate an assessment decision to a platform trusting it to be superior to their own performance. This may occur because they have been selectively exposed to instances of accurate functioning of that AEG, where false positives and negatives have been deliberately or unintentionally concealed; or perhaps because they have been instructed by a higher authority that the system is more accurate than a human (Bainbridge, 1983). Such misplaced trust then leads to errors with multiple harmful consequences: the teacher may omit to act or react, or they may passively follow the system’s instruction trusting it over their own pedagogical judgement. These blatant cases of algorithmic misrecognition are of course important, but ‘educational harm’ in this case should be understood more broadly as something that impacts negatively on the sphere of professional work and has subjective, moral, and epistemological ramifications. The harm, in this sense, is a diminished notion of what it means to be a responsible educator, ultimately leading to ‘worst case scenario’ where teachers have become unable to exercise judgement or even to recognize a problem beyond the purview of multiple automated systems operating synchronously and often behind the scenes.

Discussion and concluding remarks

The empirical nuance offered in this issue strongly implies that platforms and professionals are still entangled in a mutually constitutive relationship. This stance bears reasserting as the critical study of educational technology is often caught up in a narrative of totalizing surveillance that does not reflect the more compromised reality of modern education. At the same time, lest we forget that while the contextual (re-)enactments of the platform logic can be empirically rich, their conditions of possibility are still preordained and beholden to extractive and exploitative prescriptions. Examining the special issue’s case studies in retrospect, what strikes the most is the intensification and, at the same time, the fragmentation of personal responsibility – a process of subjectification which allows platforms to impose their own logics by

enacting a process of deontological structuration by means of digital governance, where educators (a broad category that increasingly includes parents and guardians) must internalize how they should act, where they should go, and who they should speak to in order to be viewed as ‘successful.’ Slowly but surely, the enactments described in the papers morph into extractive operations that seek to capture the value generated through subjective labor, as educators are locked in a state of constant readiness and coiled performativity. They become themselves quantified projects (often with actual scores) governed by digital infrastructures in the interest of value extraction through cognitive and emotional labor. This brings me to the first (of two) suggestion: the very notion professionalism – even in its most affirmative connotations – is based on the reductionist concealment of antagonistic labor relations, with educators becoming entangled in a labor-intensive process that conflates tactical performativity and genuine commitment to education, displaying allegiance to the governance structure while operating despite or even against it in many cases.

Platforms and automated decision making may never be able to fully bind the idiosyncratic nature of human agency, but they are certainly causing a cascading reduction of the decision space, curtailing the actions which are available in any given situation and reducing them to arbitrary selections that leave out alternative courses of action. The reclaiming of that decision space represents a field of biopolitical struggle where a more meaningful and humane understanding of ‘educational work’, across times and contexts (e.g., school and home) can emerge. Therefore, documenting the contextual enactments of data-based governance succeeds in rescuing agency, but it glosses over the more laborious and easily exploited aspects, that is, the human labor of ‘making sense’ of multiple platformed operations, to discover within them a semblance of subjective salience (Perrotta, Selwyn & Ewin, 2022).

The second suggestion veers toward the more ‘hopeful’ side of the argument, turning to some of the more invigorating contributions from the study of networked governance in education, whose influence can be detected in this special issue. Recent work in this space offered valuable insights into the ‘topological’ nature of modern governance, which can no longer be understood as a linear, top-down imposition of directives and regulations, but is more akin to a diffused process of strategic steering, where human and non-human actors become entangled in relational assemblages which mostly operate in the service of neoliberal agendas. This ‘networked governance’ permits the movement of ideas, people, knowledge and capital across borders, shaping imaginaries where technology is simultaneously a learning enhancer and a market enabler (Decuyper, 2021; Decuyper & Lewis, 2021). The consequences are often problematic (e.g., surveillance) but not deterministic, because networked governance displays a degree of dynamism which leaves room for active or passive resistance, or mere misalignment, producing live and dynamic shapes rather than rigid

structures: ‘patterns, flows, articulations and orderings’ (Decuypere, 2021, p. 71) which are operationalized as observable practices. A topological approach frames platformization and its attendant logics as problems but also as opportunities affording new and potentially progressive forms of local educational agency. Part and parcel of these opportunities is a view of algorithmic architectures as capable of generating novel socio-spatial arrangements ‘because they are geared to profit from uncertainty, or to output something that had not been spoken or anticipated’ (Amoore, 2020, p. 111). In the same vein, recent contributions have produced rich theoretical accounts negotiating a fragile equilibrium between structure and hybrid (human and non-human) agency. For example, Gulson, Sellar and Webb (2022) suggested that predictive methods of ‘synthetic governance’ may create ‘new, possibly unsettling, political rationalities in education based on the cooperation between human and algorithmic cognition.’ In such hybrid conditions, the locus of control moves out of the individuated mind to be repositioned in the generative milieu that exists between subject, culture, and computation (Parisi, 2013).

The key thesis to take forward and expand is that the platform logic acts as a distinct form of space-time – a set of topological (geographical and chronological) arrangements super-imposed on the pre-existing structures of formal schooling and propagating across other informal contexts. As education professionals navigate this complex ecology, they must learn to adapt and coordinate, mediating between the demands of the infrastructure and the human need to ‘make a home.’ A solid point of departure in this regard is McFarlane’s anthropological analysis of learning, not in the psychological connotation so commonplace in educational discourse, but as participation and belonging in urban infrastructures (McFarlane, 2011, p. 18): “[a] heterogeneous engineering that demands a relational materialism.”

From this perspective, learning goes beyond formal knowledge acquisition and skill development, to encompass the political and lived-in dimension of geographical and symbolic space and the dynamic ‘assembling’ of affordances, resources, materials, histories. Together, these features form a generative ‘spatial grammar’ (McFarlane, 2011, p. 9) of learning which brings into view the experiences and contestations through which modern life is produced – a ‘learning to dwell’ with others, peacefully or in conflict. Applied to the topic at hand such an expanded view of ‘learning to dwell’ offers a way forward. Ingold’s anthropology of human cognition, which inspired McFarlane’s work, is the overarching theoretical compass (Ingold, 2021). Ingold was inspired by research on the ecological nature of cognition as something that does not reside inside people’s heads but happens everywhere, unfolding in the relationship between the whole organism and the surrounding environment. Once immersed in this ecology, the mind emerges as a unified experience of consciousness and agency. The influence of Bateson’s ecology is particularly strong

here, especially its rejection of a hard boundary between human subjective experience and the world, and the related dismissal of a layer of information processing between the mind and the world, through which experience passes and is then reorganized according to perceptual and cognitive schemas (Bateson, 2000). Bateson's famous example of the blind man with a cane is still very pertinent in this regard, acting as a powerful metaphor of the ecological entanglement between human experience, technology and the environment. Where does the blind person's experience end? Perhaps where the cognitive systems are located, in the brain? Or where the body meets the cane? Perhaps this boundary can be extended even further out, where the cane interacts with the environment as an extension of the blind person's perceptual system. All answers will be unsatisfactory, as the boundary (if one must be found) is constantly shifting, not least because the person is not static but dynamically moving in the surrounding space – not as an entirely individuated agent, but as an “organism plus environment” (Bateson, 1972, p. 507). In this scenario, learning becomes a sequence of practical engagements within intersecting ecologies, where minds-in-society operate following principles of apprehension, understood as a holistic and organismic act of grasping complex phenomena, not by breaking them down in their constituent parts but by coming to terms with their incomputable nature and enfolded them within a unified – intuited – experience (Whitehead, 1967).

Against this backdrop, learning-as-dwelling can be explained as a process of fitting and retrofitting (apprehending) reality to suit shifting ontological requirements; a constitutive act of world-making that makes life as we know it possible and is not entirely human, but human-plus-environment, which of course includes technology. As Ingold (2021, p. 154) puts it “worlds are made before they are lived in; or in other words, acts of dwelling are preceded by acts of worldmaking.” In this sense, learning to dwell is a universal feature of the human (plus-environment) condition, realized in multiple intersecting ecologies which include the modern educational ecologies being redefined by platformization. However, more research is clearly needed. Indeed, the very possibility of ‘dwelling’ as a form of ontological and epistemological coordination with a digital infrastructure remains unclear. First Ingold and then McFarlane developed their ideas with largely pre-digital contexts in mind. For them, learning to dwell is an adaptive, slow, and incremental process that rests upon not centuries but millennia of sedimented knowledge, manifesting as heterogenous and improvised cultural practice. The extent to which this applies to modern platformed education remains an open question. After all, digital infrastructures are not only topologies, but also meteorologies. They are certainly space-times but are also the air, the temperature and light in which we increasingly live. The recent vernacular popularity of the term ‘gaslighting’ comes to mind, as a strategy of ambient manipulation in which it is not much the space that changes but subtle environmental

aspects, which are modulated to steer behaviors and feelings towards specific outcomes.

In conclusion, the final (modest) proposal I wish to offer to the study of platformed educational professionalities – one which I believe is aligned with the broader assumptions that informed this special issue – is to pay attention to forms of local dwelling which reflect the almost atavistic need to ‘make a home.’ Learning to dwell in platformed educational ecosystems means engaging in individual and collective tactical enactments, often to find a ‘good enough’ rather than optimal degree of coordination with infrastructures and their messy retinue of actors and sociotechnical arrangements: assessment regimes, datafication, curriculum contraction, international benchmarks, predictive modelling, marketisation and privatization, and so forth. It manifests in daily routines, shortcuts, habitual movements, and deliberately disruptive omissions – the idiosyncratic actions that make life under increasingly oppressive and surveilling conditions bearable.

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Book review

Melanie David-Erb (2020). *Indigene Sprachen in der Bildung. Der Eigensinn der Bildungspraxis gegenüber Bildungspolitik und Forschung am Beispiel von Burkina Faso* (Sozialisations- und Bildungsforschung: international, komparativ, historisch, Bd. 18). Münster: Waxmann, 336 Seiten, 39,90 €

Jahrzehnte nach der Unabhängigkeit wird in den meisten afrikanischen Ländern noch immer die Unterrichtssprache der ehemaligen Kolonisatoren verwendet. Doch woran liegt das? In der vorliegenden Publikation ihrer Dissertation an der Ruhr-Universität Bochum untersucht Melanie David-Erb am Beispiel von Burkina Faso inwiefern der politische und wissenschaftliche Diskurs zur Wahl der Unterrichtssprache in der praktischen Umsetzung im formalen, non-formalen und informellen Bildungssystem zu finden ist und welche subjektiven Wahrnehmungen und Einstellungen verschiedene Bildungsakteure zur Verwendung indigener Sprachen haben. Nach Abschluss ihres Studiums (Germanistik, Philosophie, Ev. Theologie) war die Autorin von 2010–2013 als Lektorin des Deutschen Akademischen Austauschdienstes (DAAD) an der Universität in der Hauptstadt Burkina Fasos, Ouagadougou, tätig, woraus die Idee für die vorliegende Publikation entstand. Ihre Tätigkeit als Lehrende

erleichterte ihr den Kontakt zu potentiellen InterviewpartnerInnen vor Ort.

Die Publikation gliedert sich in sechs Kapitel mit 280 Seiten, gefolgt von einem ausführlichen Literatur-, Tabellen- und Abbildungsverzeichnis sowie einem Anhang, der neben der Sprachbiographie der einzelnen Interviewten auch den verwendeten Interview- und Kodierleitfaden enthält. Im ersten Kapitel werden die LeserInnen in das Thema *Indigene Sprachen in der Bildung* eingeführt. Durch den historischen Blick erfahren LeserInnen, warum die Sprachen der ehemaligen Kolonialmächte – hier Französisch – im Bildungswesen in Subsahara-Afrika dominant sind.

Anhand von vier aktuellen Länderbeispielen wird der vielfältige Umgang mit indigenen Sprachen verdeutlicht, der von der Einführung einer indigenafrikanischen Sprache als Unterrichtssprache bis zur Verbannung indigener Sprachen aus dem Klassenzimmer reicht. Es folgt ein Überblick über die internationalen politischen und wissenschaftlichen Diskurse zu indigensprachlicher Bildung sowie eine Darstellung der damit verbundenen theoretischen Annahmen. Zur Darstellung der Debatte über Mehrsprachigkeit im Unterricht identifiziert die Autorin sechs Faktoren (vgl. S. 51 ff.). Unter psychologischen Faktoren sei beispielsweise zu berücksichtigen, dass Kinder vor dem Schuleintritt zwar polyglott aufwachsen, doch gerade die europäische Unterrichtssprache im familiären Umfeld vor allem im ruralen Milieu nicht erlernten (vgl.

S. 55). Politische Faktoren zeigten, dass es in diesem Bereich vor allem um Machtfragen gehe, wie die Autorin aufzeigt, indem sie verschiedene Standpunkte sowohl westlicher als auch afrikanischer WissenschaftlerInnen aufzeigt. Ausgehend vom Ansatz der Entwicklung einer dynamischen Weltgesellschaft (Meyer, Kamens & Benavot, 1992), welcher Angleichungstendenzen von Nationalstaaten im Bereich von Bildungsinhalten, -institutionen und -politik belegt, stellt David-Erb verschiedene internationale Unterrichtsmodelle vor, die die Inklusion von Minderheitensprachen im Unterricht zeigen und verdeutlicht anhand von Stellungnahmen die bildungspolitischen Standpunkte von UNESCO und Weltbank. Ferner beschreibt die Autorin Faktoren für den Bildungserfolg, linguistische, sozioökonomische und ökonomische Faktoren. Vor diesem Hintergrund untersucht sie systematisch die Diskrepanz zwischen realer Unterrichtspraxis einerseits und Forschung sowie politischen Proklamationen andererseits.

Im dritten Kapitel geht es um den Faktor Sprache im formalen Bildungssystems Burkina Faso. Hier erhalten LeserInnen einen Blick auf den strukturfunktionalistischen Aufbau desselben und dessen AkteurInnen auf Makro-, Meso- und Mikroebene. Ferner wird die geschichtliche Entwicklung und juristische Situation bilingualer Bildung in Burkina Faso beleuchtet. Insbesondere die *Écoles Bilingues*, welche als einzige Institutionen des formalen Bildungs-

systems offiziell indigene Sprachen im Unterricht verwenden, werden ausführlich beschrieben, da die überwiegende Mehrheit der in dieser Studie Befragten aus diesem Umfeld sind.

David-Erb wertet in Kapitel 4 die Interviews mit AkteurInnen des formalen Bildungssystems anhand der in Kapitel 1 beschriebenen Faktoren zur Mehrsprachigkeit im Unterricht qualitativ aus, wobei zwei weitere Faktoren (Globale Faktoren, Zukunft) ergänzend hinzukommen. Dabei geht die Autorin der Frage nach „warum indigensprachliche Bildung im formalen Bildungssektor bis heute marginal ist, obwohl die jahrelange progressive Auseinandersetzung mit diesem Handlungsfeld von wissenschaftlicher wie politischer Seite, sowohl national als auch international, Vorteile auf vielen Ebenen herausstellt“ (S. 174).

Schließlich werden die Ergebnisse zu indigenen Sprachen durch die explorative Auswertung von Interviews mit AkteurInnen im non-formalen und informellen Bildungssektor im fünften Kapitel ergänzt. Zunächst beschreibt die Autorin verschiedene Institutionen der non-formalen Bildung, welche indigene Sprachen als Unterrichtssprachen verwenden und sich an verschiedene Zielgruppen wenden, z.B. 9–15-jährige Kinder, die ihrer Schulpflicht bislang nicht nachgekommen sind oder noch nicht alphabetisierte Erwachsene. David-Erb verweist u.a. auf daraus resultierende Probleme für die Lehrpersonen, da sich durch „die Bindung an einen spezifische

Sprache ... zugleich eine räumliche Bindung an die Region [ergibt]“ (S. 232). Auch bieten die wenigsten dieser Einrichtungen die Möglichkeit, anschließend ins formale System zu wechseln und einen staatlich anerkannten Abschluss zu bekommen. Außerdem hebt die Autorin die Pionierarbeit der Kirchen auf dem Gebiet der indigenen Sprachen – z.B. durch die Erstellung von Grammatiken oder Textsammlungen – hervor sowie deren Angebot indigensprachlicher Alphabetisierungskurse „weil man davon ausgeht, dass auf einer anderen als der individuellen Erstsprache in der Kommunikation Inhalte verloren gehen“ (S. 241). Im zweiten Teil des Kapitels geht es um die informelle Bildung durch Verbreitung indigensprachlicher Inhalte in Fernsehen, Radio, Printmedien und dem Verlagswesen, deren Zielgruppe vor allem die bildungsferne ländliche Bevölkerung ist. Während im Theater durchaus indigene Sprachen verwendet würden, vor allem von Theatergruppen, die an verschiedenen Orten unter freiem Himmel spielten, bleibe der Gebrauch dieser Sprachen im Medium Film eher die Ausnahme, da der globalisierte Filmmarkt Filme in englischer oder französischer Sprache präferiere, so die Autorin (vgl. 261 ff.).

Die Ausgangslage besteht in einer weitgehend fehlenden Forschungsliteratur zur tatsächlichen Integration indigener Sprachen in die Unterrichtspraxis, was die gewählte qualitative Forschungsmethodologie als sehr geeignet erscheinen lässt, um die Forschungs-

frage zu beantworten. David-Erb führte vor der Auswahl der InterviewpartnerInnen in einer explorativen Feldphase Dokumentenanalysen von Gesetzestexten und Evaluationsberichten des Ministeriums durch, deren Ergebnisse in die Rolle des Faktors Sprache innerhalb der Bildungsangebote und die Darstellung des burkinischen Bildungssystems einfließen. Ferner half die Auswertung der Dokumente, politische EntscheidungsträgerInnen zu identifizieren. Mit AkteurInnen der Mikroebene (Eltern, LehrerInnen, SchülerInnen), AkteurInnen des non-formalen und informellen Bildungswesens sowie (inter-)nationalen BildungsexpertInnen wurden zwischen November 2013 und März 2014 in Ouagadougou insgesamt 38 leitfadengestützte Interviews – zwei davon als Gruppeninterviews – in französischer Sprache geführt. Dieser Feldforschungsansatz erlaubt es, die GesprächspartnerInnen innerhalb ihres Aktionsradius zu interviewen und unter einer multidimensionalen Perspektive zu erforschen. Die Herangehensweise ermöglichte ferner eine induktive Hypothesenentwicklung durch Interviews sowie die Erweiterung von Theorien auf der Grundlage selbst gesammelter Daten (vgl. 122 f.), was aus ethnographischer Sicht für die vorliegende Untersuchung besonders geeignet erscheint, um die Diskrepanz von Theorie und Praxis im Hinblick auf indigensprachliche Bildung zu erforschen. Die von der Autorin geleisteten terminologischen Überlegungen zum Sprachenbegriff (vgl.

S. 19 ff.) sowie die Reflektion der eigenen Rolle im Forschungsprozess und ihr Anspruch, Euro- und Ethnozentrismus sowie Rassismus zu vermeiden (vgl. S. 145) sind eine wichtige Voraussetzung für diesen interkulturellen Forschungsansatz. Diesem Anspruch wird die Autorin David-Erb durchgehend gerecht.

David-Erb konstatiert die gleichzeitige Verwendung verschiedener Sprachkonventionen in Alltag, Schule, Beruf und Religion. Dabei werden bestimmten Bildungssystemen oder Praktiken ein bestimmter Sprachgebrauch zugeordnet: Die formale Bildung verwende fast nur die durch die ehemaligen Kolonialmächte eingeführte Sprachen, informelle Bildung dagegen nutze indigene Sprachen. Auf der Ebene der Unterrichtspraxis wie auch im Bereich der politischen Rhetorik variiere der Umgang mit indigenen Sprachen im Bildungswesen stark, und trotzdem blieben sie – auch im gesamtafrikanischen Kontext – marginal (vgl. S. 267). In Bezug auf die internationale Diskussion zu indigensprachlicher Bildung resümiert die Autorin im Rahmen ihrer Dokumentenanalyse von Publikationen der UNESCO und Weltbank: „Auf der Ebene der Proklamationen wird indigensprachlicher Unterricht normativ gefordert, handlungsrelevant werden diese Forderungen dadurch aber nicht unbedingt“ (S. 269). Eine weitere Diskrepanz zeigt sich bei den Einstellungen von Lehrenden, Eltern und Lernenden (Mikroebene), die zum Teil stark von den Standpunkten von internationalen Organisationen und

Wissenschaft abweichen. Viele Befragte halten bilinguale Schulen mit indigenen Unterrichtssprachen „eher für Kinder mit unterprivilegierter gesellschaftlicher Herkunft für geeignet, eher für Mädchen als für Jungen und eher für Kinder mit Behinderungen und Lernschwierigkeiten“ (S. 277). Eltern, die sich für ihre Kinder eine bestmögliche Bildung und Erfolg in einer globalisierten Welt wünschten, würden deshalb eine monolinguale frankophone Schule bevorzugen. Derartige Zuschreibungen belegt die Autorin auch für andere gesellschaftliche Bereiche: beispielsweise seien indigensprachliche Beiträge in Printmedien „auf die vermeintlichen Interessen einer ländlichen Bevölkerung mit geringem formalem Bildungsniveau hin ausgerichtet. Global relevante Nachrichten oder Reportagen werden nicht oder kaum unter Benutzung indigener Sprachen veröffentlicht“ (S. 277). Die Forderung nach einer flächendeckenden Einführung indigensprachlicher Bildung als Angleichung an eine globale pädagogische Norm wird durch die Entscheidungen von individuellen AkteurInnen der Mikroebene verhindert, welche sich durch die Ausbildung in einer sogenannten Weltsprache bessere Chancen auf dem Arbeitsmarkt versprechen (vgl. S. 278).

Schließlich skizziert die Autorin Forschungsdesiderate, wie z.B. den tatsächlichen Sprachgebrauch an klassischen Schulen, Vergleiche mit anderen Ländern oder die Untersuchung des Einflusses von internationalen AkteurInnen

(z.B. NGOs) auf die nationale Gesetzgebung (vgl. S. 279 f.).

David-Erbs als Länderstudie angelegte Dissertation kann in den Bereich der international vergleichenden Erziehungswissenschaft bzw. Sozialisations- und Bildungsforschung eingeordnet werden. Die sehr gut geschriebene Publikation besticht durch den logischen Aufbau sowie die durch Tabellen und Schaubilder im Text abwechslungsreiche Darstellung, welche die Lesbarkeit begünstigen. Zahlreiche Fußnoten als Verweise auf vertiefende Lektüre ermöglichen den LeserInnen weiterführende Auseinandersetzungen mit einzelnen Themen. Auch die in Fußnoten angeführte Übersetzung französischer Interviewausschnitte trägt zum besseren Verständnis bei. Insbesondere die tabellarischen Darstellungen der Sprachbiografie der Befragten und deren Umgang mit eigenen Kindern (S. 313 ff.) machen es nachvollziehbar, warum manche Akteure derselben Ebene zu zum Teil diametral entgegengesetzten Aussagen kommen. Die prägnante Darstellung der Ergebnisse gelingt der Autorin durch ihr analytisches Vorgehen bei der Beantwortung der komplexen Hauptfragestellung: Sie untergliedert diese in vier Unterfragestellungen, welche sie beantwortet und sich daraus ergebende Anschlussperspektiven diskutiert.

Kritikwürdig erscheint die tabellarische Darstellung der Autorin von „relevanten Handlungsfelder[n] und Akteurinnen und Akteure des burkinischen Bildungswesens gemäß dem Analyse-

modell von Fend (2008, S. 17)“ (S. 157): Auf der Mikroebene sind die Akteure Lehrerinnen und Lehrer, Schülerinnen und Schüler sowie Eltern genannt; als relevante Handlungsfelder werden Klassenführung, Erziehung, Unterricht, Beratung, Methodik und Didaktik sowie Unterrichtsentwicklung aufgeführt (vgl. S. 158). Hier fehlt mir das Handlungsfeld Bildung, um zu beschreiben, welche Akteure sich wie und unter welchen Bedingungen bilden, welche subjektiven Strategien sie – möglicherweise abweichend von gesetzten Erziehungs- bzw. Unterrichtszielen – entwickeln. Dieser Aspekt wird in den von David-Erb erhobenen Daten von SchülerInnen der vorliegenden Studie durchaus abgebildet.

Indigene Sprachen in der Bildung schließt eine Forschungslücke in der vorhandenen Literatur. Das Ziel der Autorin, „mögliche Antworten auf die Frage zu finden, warum die Vorgaben aus Bildungspolitik und Forschung in der Praxis nicht umgesetzt werden“ (S. 19) wird für ganz Burkina Faso nur teilweise erfüllt, da sie sich in ihrer Studie im Bereich der formalen Bildung auf die *Écoles Bilingues* konzentriert, was nur einen Teil der Bildungspraxis darstellt. Dem Vorschlag der Autorin folgend ist es wünschenswert, in zukünftigen Untersuchungen ebenso den tatsächlichen Sprachgebrauch indigener Sprachen an – monolingual französischen – klassischen Schulen in Burkina Faso zu untersuchen, um ein vollständigeres Bild des Feldes zu erhalten.

Ebenso müssten etwaige Unterschiede zwischen urbanen und ruralen Regionen untersucht werden. Neben Audio- und Printmedien sollte zukünftige Forschung auch die Verbreitung von indigensprachlicher Bildung z.B. über Youtube berücksichtigen. Die Publikation ist aufgrund ihrer theoretisch gut fundierten empirischen Analyse und der alltagsverständlichen Sprache sowohl für Studierende, wissenschaftlich Arbeitende und AkademikerInnen geeignet als auch für alle anderen an der Sprachenfrage im postkolonialen Afrika Interessierten. So habe ich z.B. selbst von der Lektüre sehr profitiert und etliche Parallelen zu meiner Forschung zu Bildungsprozessen von SchülerInnen in Gambia entdeckt: Zwar fanden auch hier die Empfehlungen der UNESCO zur Verwendung indigener Sprachen im Primarschulbereich Eingang in bildungspolitische Dokumente – die National Educational Policy (2004–2015) empfiehlt den Gebrauch indigener Sprachen als Unterrichtssprachen in Klasse 1–3 mit zusätzlichem Englischfachunterricht –, die Umsetzung in die Bildungspraxis steht allerdings noch aus.

An der von mir untersuchten privaten Schule wurde in Kindergarten und Vorschule statt Englisch indigene Sprachen verwendet, was kurz darauf aufgrund von Elternprotesten wieder rückgängig gemacht wurde. Englisch ist die Unterrichtssprache im formalen Bildungssystem vom Kindergarten bis zur Universität, außer an Koranschulen, während im informellen Bereich überwiegend indigene Sprachen verwendet werden.

Die Lektüre von Melanie David-Erbs *Indigene Sprachen in der Bildung* empfehle ich sehr, da hier ein interessantes Thema vielseitig und gut fundiert beleuchtet wird.

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