Say goodbye to 'Teacher Influencers' and hello to 'Educational Data Advocates'

Educational data advocates: Emerging forms of teacher agency in postdigital classrooms

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Abstract

The proliferation of digital apps in K-12 Education has seen the role of the teacher change. Commercial platforms are being increasingly used in the classroom as teaching and learning tools. Beyond shifts in practice to accommodate this technologisation of education, the teacher also becomes a tool of the platform - collecting and generating data for algorithmically informed learning. It is time to move away from commercial platforms working *through* teachers to influence education and towards working *with* teachers in the ethical use of educational data and analytics. The purpose of this paper is twofold. Firstly, we draw on semi-structured interviews from the *Apps in Australian Classrooms Research Project*, to present an exploratory typology of teacher influencer behaviour. Secondly, we argue that there is potential for teacher influencers to act as advocates in increasingly datafied school environments. We introduce the conceptual notion of an 'educational data advocate'. Acknowledging the commercial knowledge that Teacher Influencers have, the paper calls for Teacher Influencers to be developed and recognised by educational institutions as a source of expertise to understand the implications of the use of data-driven educational technologies. By doing so, a new pedagogical economy that promotes ethics and rights alongside educational and commercial outcomes may be generated.

Key Words: Teacher Influencer, Data Advocacy, Qualitative Methodology, Teacher Agency, Postdigital theory

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Introduction

The influx of machine learning and algorithmically informed apps in K-12 classrooms has advanced at a pace that educational policy cannot keep up with. Many teachers are unaware of the implications, as such the algorithmic (un)fairness (Green and Viljoen 2020) associated with big data and predictive analytics (Arantes 2019); protective legislation is not yet in place (ACCC 2019; AHRC 2019). This paper addresses the important topic of the economics of educational technology [edtech] and its connection with teachers' roles by exploring teachers' use of educational data, to preempt the emergence of a new kind economy. An economy deemed to be essential given the increasing commercialisation of educational settings (Williamson and Hogan 2020) via datafication based on 'technologies of machine learning and artificial intelligence' (Williamson, Potter, and Eynon 2019 88).

We begin by outlining the postdigital theoretical perspective which underpins this work. We then explore influencer cultures as a form of teacher agency within the context of schools. The paper builds from the established research (Shelton et al. 2020; Dousay et al. 2018) that presents teacher influencers as teachers who use social media platforms to gain a following and promote products for some form of remuneration. We argue that teacher influencers can have a role to play in helping other teachers understand the implications of using data-driven edtech products.

The paper draws on teachers' voices from the *Apps in Australian Classrooms Research Project* to present an exploratory incursion into the behaviour of teachers identified as teacher influencers. We delineate the various behaviours of teacher influencers into an initial typology of Sharing, Enabling, and Freelancing, to show how such actions can be harnessed for advocacy. Based on an understanding of influencer culture in schools we argue that teacher influencers could take on an advocacy role, providing communication about the data practices engaged by apps and platforms to help teachers become key policy actors in their own right.

Given the negative connotations of the term 'Teacher influencer' that positions teachers as commercial representatives of edtech, we call for a reconceptualisation of such teachers towards being considered professionals, whose agency enables them to select pedagogically and ethically sound technological supports - where warranted - as part of their practice. With their agency, influence, and knowledge of commercial platforms in education we suggest that such teachers be considered as *Educational data advocates*. Teacher agency supposes the notion that teachers are not puppets to commercial platforms, and their agency can be used to focus on data advocacy. Understanding such teachers' capacity for advocacy requires a reconceptualisation of the notion of the 'teacher influencer'. The paper concludes by suggesting a framework for advocacy that provides practical ways for such teachers to operate.

Using postdigital theory to rethink teacher identity in the datafied classroom

A postdigital perspective provides a means of exploring the changed relationship with technology that exists in highly technologised societies (such as those of wealthy industrialised countries) (Jandrić et al. 2018). The use of postdigital theory in education provides a means of looking beyond the specific apps, platforms, or products to examine the digital, non-digital, material and social relations that exist in classrooms (Fawns 2019). Postdigital theory takes as its starting point the premise that the digital revolution has already happened (rather than being indefinitely impending), and that in exploring our relationship with technology we need to change our focus from specific technologies to explore the processes, relations and material conditions engendered by its presence and use.

Postdigital theory allows for consideration of contemporary digital practices that are reshaping education systems in problematic and opaque ways (Buchanan and McPherson 2019). Increasingly, the classroom is 'datafied' - containing key processes that are quantified into data 'that is collected, processed and circulated through computers and online systems'

(Selwyn 2020: 1). Consideration of this reshaping reveals the increasingly use of dataveillance on students; the behavioural modification techniques inherent in learning analytics and personalised learning platforms; the effects of such practices on student subjectivities; and, the environmental implications of this reliance on digital technologies.

Building on work that demonstrates the utility of postdigital theory for analysis of education (Fawns 2019; Knox 2019) this paper focuses on postdigital teacher identities (Arantes 2020), noting that *teacher influencer* constitutes an emerging postdigital teacher identity. That is to say, that while teacher influencers' identities are shaped by their use of particular forms of digital technology, such identities are also constituted by social and material relations, not just the technologies that mediate these relationships. It is social relations and social practices (in tandem with the technologies that mediate these relations) that allow teachers to be influencers. Rather than providing an overview of the technologies used and spruiked by teacher influencers our interest is on their behaviour and the way in which their influence can be used in educational settings. While teachers have agency (Biesta, Priestley, and Robinson 2015) in determining the ways in which technological learning tools, such as commercial apps and platforms, are used as part of their educational practice, commercial platforms exert multiple complex and intangible influence over this agency that requires greater debate and scrutiny (Arantes 2020).

Influencer Culture in educational settings

In tandem with the increased use of digital technologies within society and the classroom an influence economy has emerged, with teacher influencers present in Australian K-12 settings (Saldaña et al. 2021; Hendry et al. 2021). The role of the teacher has always incorporated the mechanics of influence. It is the increasing presence of social media that has evolved the

association of teachers and influence, towards being akin to ‘brand ambassadors’ (Saldaña et al. 2019). Drawing on Saldaña et al. (2019, 3) a brand ambassador is defined here as ‘an individual who receives some form of compensation or perk in exchange for the endorsement of a product’.

There are emerging problems regarding trust in commercial platforms (Macgilchrist and Technology 2019) and the teachers who spruik the perceived benefits of specific branded technologies (Shelton and Archambault 2019). Shelton et al. (2019, 530) discusses the notion of teacher influencers, as ‘edu-influencers’, or teachers who can steer ‘the online conversation around teaching and learning’ by promoting education-related services, products, practices and pedagogies. Drawing on Shelton et al. (2019) we understand teacher influencers as teachers, who are typically early adopters of technology, who in disseminating their practice on social media have amassed large followers, and therefore have substantial but informal influence within the education sector. As an emerging phenomenon, teacher influencers are not well researched (but see Shelton et al. 2020 and Saldaña et al. 2021). They have been described as ‘a sort of celebrity hybrid; part race-car driver, part salesman, and part educator’ (Dousay et al. 2018: 1). While current understandings of teacher influencers remain nebulous, we consider teacher influencers to be influential online (Shelton et al. 2019), connected to other teachers through (online and in-person) professional learning networks and events such as Teachmeets (Esterman 2015) and as having deep knowledge of, and influence within their school setting (Reid 2014).

Teacher influencers providing word of mouth advertising (online and in-person) for apps and platforms and have helped platforms towards becoming ‘key policy actors in their own right’ (Williamson 2019: 395). Teacher influencers have (deliberately or inadvertently) adopted a quasi-commercial role in this process. When they are approached on social media, conferences and in the staff room, they discuss the benefits and challenges of commercial

platforms with other teachers (Hogan, Lemon, and Libai 2004). Word of mouth advertising refers to the free or very cost-effective 'informal communications between private parties concerning evaluations of goods and services' (Anderson 1998: 6). Word of mouth advertising is no longer a process of chancing across someone with similar interests. Tech savvy teachers with large numbers of engaged followers online are deliberately targeted through data proxies and marketing analytics, to promote and share information. This is not only for edtech products and services, but for a range of education related topics and themes.

Teacher influencers can provide commentary about commercial platforms and other topics of interest in return for remuneration and or kudos, professional enactment and a sense of enabling or sharing knowledge. The momentum of teachers discussing platforms and apps in online groups is profitable. Saldaña et al. state that while 'the individual effect of each social influencer may be small, the aggregate effect of a network of influencers can be substantial' (2019: 6). That is, where one teacher influencer may discuss the benefits of using an app within a community of practice, the aggregated response of those also using the app can bring about significant change to educational practice. Via processes of brand ambassadorship, relationship and influencer marketing, teacher influencers play part in a role in normalising the classroom use of Edtech products. Remuneration may be in the form of digital badges and certificates, or paid attendance at conferences, advertising revenue and swag. Thus is it important to note that teacher influencers are seen to be acting as a hybridised or niche form of a brand ambassador, not purely a brand ambassador that is exclusively beneficial to commercial platforms. It is through word of mouth that commercial platforms can indirectly reach and communicate with teachers on local and global scales, but it is through word of mouth that teacher influencers can also share knowledge and enable change.

From a commercial perspective, the market penetration of edtech platforms relies on teachers influencing their peers. How platforms use the data collected from influencers, and

how platforms are used by influencers, to create content on their social media is significant, due to perceived relatability, authenticity and credibility is well researched (Djafarova and Rushworth 2017; Pöyry et al. 2019). However, commercialisation of teachers via their role as influencers is not well documented. Where the ordinary teacher becomes increasingly visible in marketing commercial platforms, a more socio-cultural and interdisciplinary approach to the exploration of the phenomenon of teacher influencer is needed. Although the teacher influencer could be reduced to a 'Brand Ambassador', it could also be heralded as a democratising force. And it is this liberating praxis, this paper aims to consider. The contemporary form of a teacher influencer could give rise to 'real' and authentic voices (Childers, Lemon, and Hoy 2019) across the diverse array of contextually diverse educational settings; raising new questions in relation to the 'brand' and associated products.

The concept of 'brand' in schools, could be associated with rights, safety and advocacy. Some argue that influencer culture has become synonymous with attention (Drenten, Gurrieri, and Tyler 2020). However, influencer cultures are complex and multifaceted (Shelton et al. 2020), often playing an important intermediary function. For example, an influencer may enable complex ethical questions about the environment to be broken down into contextually adaptable tasks (Haider 2016; Joosse and Brydges 2018). Influencers may also encourage followers to explore political questions (Wood 2020), engage in behaviours guided by micro-celebrities (Marwick 2015), and provide voice for diverse groups in society (Duguay 2016). There are multiple commercial platforms in the classroom being sold by brands seeking relatability, authenticity and credibility with teachers. How they engage with teachers (and how teachers engage with them) varies and common terms to represent teacher influencers with such a brand is lacking.

Further, the narrative surrounding relatability, authenticity and credibility in terms of commercial data is often led by commercial rhetoric. Although claimed to be an impetus for

efficiency and innovation, educational data involves laborious negotiation of apps and platforms as part of educational practice 'sustained by various forms of continual human (hard) work across whole-school communities' (Selwyn 2020, 10). The data referred to here is not assessment or standardised test data. Examples of data include data collected and use by apps and platforms that include large 'free' platforms such as Google Classroom and Microsoft Education who offer micro-credentials for teachers. There are 'freemium' apps and platforms, such as social learning platform Edmodo (www.edmodo.com) and communication and behavioural app Classdojo (www.classdojo.com) who offer free conferences and ambassadorial programs (Manolev, Sullivan, and Slee 2019) to encourage their take up by teachers. There are also multiple paid platforms such as Education Perfect (educationperfect.com) and Stile (www.stile.com) that provide real-time adaptive or predictive insights and recommendations that teachers may use to guide or shape their educational practice. Credibility of these platforms is informed by the teachers' usage and engagement data (Arantes, 2021), not only the choice of teachers to act as commercial ambassadors.

Exploring the phenomenon of Teacher Influencers

It is naive to consider teacher influencers as merely brand ambassadors or commercial microphones. As a Brand Ambassador, the teacher gives commercial platforms access to their network of social influence and endorses the platform, thus building trust in the platform. This word-of-mouth advertising builds brand equity. 'Brand equity' is a phrase widely referred to in the marketing industry and refers to perceived brand value. A well-recognised brand, with strong brand equity, can generate more revenue due to brand recognition (Aaker 1997; Pappu, Quester, and Cooksey 2005). At present, commercialisation profits through increased brand equity and the trust teachers have in specific platforms. Successful commercialisation in education could be considered as a result of the well-known brands being endorsed by teachers

which increase the platforms' relatability, authenticity and credibility. With increased brand equity, a platform is more likely to be increasingly used.

Teachers have agency (Biesta, Priestley, and Robinson 2015) and are not just marketable representatives of commercial products. In determining ways in which the commercial app or platform are used as part of their educational practice, the teacher must also negotiate the multifaceted and elusive ways the platforms have influence over this agency. Two such commercial strategies are Relationship and Influencer Marketing. Relationship Marketing is a strategy designed to nurture customer loyalty, build interaction with the brand, and nourish long-term engagement (Möller and Halinen 2000). Through the development of relationships, commercial apps and platforms can construct resilient connections with teachers as customers. Teacher influencers and their networks are seen to be a powerful marketing conduit for those wanting to leverage Network-based Relationship marketing within and around school settings. Influencer Marketing can be considered a form of Network-based Relationship marketing (Brown and Hayes 2008), where there is a specific focus placed on the individual, rather than a target market. That is, an individual teacher is targeted with the intention of them sharing the brand message with their followers. By doing so, the platform is situated toward the individual teacher and their classroom practice.

The influencer sits at the centre of the marketing discourse (Woods 2016). Influencer marketing can, therefore, be generalised as a virtual form of word of mouth advertising, based on the relationship the teacher influencer has with their followers. Teachers who discuss the benefits and challenges of apps and platforms, whether online or offline, are building brand equity. The platform effectively is 'piggybacking' on the relationship the teacher influencer has forged with their network. Teacher influencers provide the relational aspects needed to encourage increased platform usage.

How are teachers negotiating being a 'Teacher Influencer' in postdigital classrooms?

Data plays a crucial role in how Teacher Influencers are approached by commercial platforms. Profiled and marketed to, based on their online activity (Cheney-Lippold 2011), teacher influencers are targeted through engagement campaigns on social media (Speicher et al. 2018) increasing the commercialisation of educational settings. Commercialisation in education involves commercial platforms 'working with and within… schools to support schooling processes' (Hogan, Thompson, et al. 2018: 14). Commeralisation has seen the monetising of educational data emerge as a relatively invisible, but crucial aspect of educational systems in recent years (Williamson 2015).

As educational technology trends towards machine learning, artificial intelligence, continual internet connectivity and data-gathering via the Internet-of-Things the implications are not often considered by teachers. With every piece of internet connected technology used in and around the classroom, data is being generated (Selwyn 2015). For example, when a teacher trials an app for their classroom, data is being collected, de-identified and aggregated via cookies and other tracking devices (ACCC 2019). Therefore, data is being collected from within and around educational settings, feeding algorithmic systems for teaching and learning (Perrotta and Selwyn 2019), and enabling targeted advertising (Williamson 2018). Identified and promoted through data and analytics on social media, platforms engage directly with K-12 teachers through their personal online social networks (Williamson 2017) and effectively circumnavigate established in-school processes, practices, and policies (Selwyn et al. 2017).

In postdigital education systems, teachers are conduits connecting their students (and their data) to commercial entities via the products they incorporate in their teaching practice, which gives teachers' duty of care to protect their students may represent a conflict of interest (Saldaña et al. 2021). Little is known about teachers' understanding of these dynamics. The *Apps in Australian Classroom* project sought to learn what teachers understand about their use

of educational apps. The findings in this study have been used to present an exploratory inroad concerning teachers' understanding and experiences of being a Teacher Influencer.

The Apps in Australian Classrooms Project

The *Apps in Australian Classrooms* project investigated how Australian teachers negotiate commercial apps and platforms as part of their educational practice in the classroom. The purpose was to consider how commercial apps and platforms form part of educational practice and how teachers were aware of and understood the implications of their use. The project involved an online survey and two phases of semi-structured interviews, focusing on capturing and documenting teacher voice, to obtain a 'grassroots' interpretation of commercialisation and implications associated with big data, algorithmic systems and algorithmic bias in Australian classrooms. Here we present results from a subset of semi-structured interviews with teachers who are heavy users of digital technologies.

Ethical procedures

The study was approved by our University's Human Ethics Research Committee [Approval number H-2018-0423]. Informed consent documentation was collected before the interviews and reaffirmed at the beginning of the interview. All teachers provided the researchers with their own pseudonyms which are used throughout this paper.

Participants

Two phases of interviews occurred six months apart. The first phase included 23 participants, and all were invited to participate in the second phase. Sixteen participants accepted the invitation and completed a second interview. The participants were 10 male and 13 female and predominantly practising teachers, but some were school leaders, librarians, and educational

support teachers. Two were employed within departmental roles, one of which shifted out of the classroom during the research and the other six years earlier. However, they maintained regular contact with classroom rooms as part of their role with the department. At the time of the interview, participants included one Seesaw Ambassador, four Google Certified Educators, four Microsoft Innovators, one Flip grid certified educator, and two Classdojo Ambassadors. The results presented here draw from the subset of interviews with teachers who could be understood as teacher influencers according to Saldana et al.'s (2019) definition. The meta-data for the interview participants is detailed in Table 1 below.

Table **1***: Meta-data for Interview Participants*

Self-assigned Pseudonym	M /F	Age	State	Recruit Method	Role	System	Exp	Choice of apps	Use	P1	P2
Dr John K	M	40-49	SA	Twitter	Leadership	Independent	20+	Yes	Once/ mth	Yes	No
Lisa T	F	50-64	WA	Twitter	Primary	Independent	10-19	Yes	Once/ wk	Yes	No
M	F	40-49	NSW	Twitter	Secondary	Catholic	6-9	Yes	Once/ wk	Yes	No
Redlands	F	50-64	NSW	Email (LDA)	Special Needs	Independent	20 +	Yes	Once/ wk	Yes	No
Sam	F	50-64	QLD	Email (LDA)	Support	Government	20 +	Yes	Never	Yes	No
Voz	F	50-64	NSW	Twitter	Secondary	Government	20 +	Yes	Daily	Yes	No
X	M	40-49	Vic	Twitter	Secondary	Government	6-9	Yes	Once/ mth	Yes	No
SecondaryTL	F	50-64	NSW	Twitter	Special Needs	Government	20+	Yes	Twice /mth	Yes	Yes
Adele	F	50-64	SA	Other	Librarian	Government	20+	Yes	Once/ wk	Yes	Yes
Comraddogboy	M	50-64	SA	Twitter	Secondary	Catholic	10-19	Yes	Once/ wk	Yes	Yes
Cssh	M	50-64	NSW	Twitter	Secondary	Catholic	20 +	Yes	Daily	Yes	Yes
Dimble	M	30-39	Vic	Twitter	Secondary	Government	6-9	Yes	Daily	Yes	Yes
Fred	F	50-64	QLD	Twitter	Primary	Government	20 +	Yes	Once / wk	Yes	Yes
JAM	F	50-64	NSW	Email (LDA)	Support	Government	20 +	Yes	Once/ mth	Yes	Yes
Jay	F	30-39	QLD	Facebook	Leadership	Government	6-9	Yes	Daily	Yes	Yes
Jonesy	M	50-64	NSW	Twitter	Leadership	Government	20 +	Yes	Once / wk	Yes	Yes
KL	F	30-39	NSW	Facebook	Primary	Catholic	10-19	Yes	Daily	Yes	Yes
Laura	F	40-49	NSW	Facebook	Primary	Government	20 +	Yes	Daily	Yes	Yes
Linsimma	M	40-49	WA	Twitter	Secondary	Catholic	20 +	No	Daily	Yes	Yes
Moo	M	40-49	Vic	Facebook	Secondary	Independent	10-19	Yes	Once /wk	Yes	Yes
Mr D	M	30-39	NSW	Twitter	Primary	Government	6-9	Yes	Daily	Yes	Yes
Mrs Jackson	F	30-39	NSW	Facebook	Primary	Catholic	10-19	Yes	Daily	Yes	Yes
Technologica	M	40-49	SA	Twitter	IT Ed	Government	20 +	Yes	Daily	Yes	Yes

Note: Shaded participants completed 2 phases of interviews

Data collection and analysis

The findings in this paper are part of a larger study, called the Apps in Australian Classrooms Project. The aim, research instruments and data collected as part of the larger project is represented in Table 2 below.

Table 2 Overview of data collection and analysis: The Apps in Australian Classrooms Project

Aim	Research Instrument	Data For Analysis	Method of Analysis
Snapshot of Australian Classrooms	Online Survey	Written information via survey response	Descriptive
Understanding how commercial providers communicate with teachers	Walkthrough method	Artefact produced – a platform analysis	Narrative
Focus on Commercial negotiations	Semi-structured Interview Phase 1	Audio recorded and transcribed + member checked.	Thematic
Focus on social components of negotiations	Semi-structured Interview Phase 2	Audio recorded and transcribed + member checked.	Thematic, Epistemic Network

The broad conceptual overview of the Apps in Australian Classrooms Project is represented in Appendix 1. Participants for this larger study were recruited through a targeted advertising campaign. Twitter was used to reach and engage the participants, much like commercial

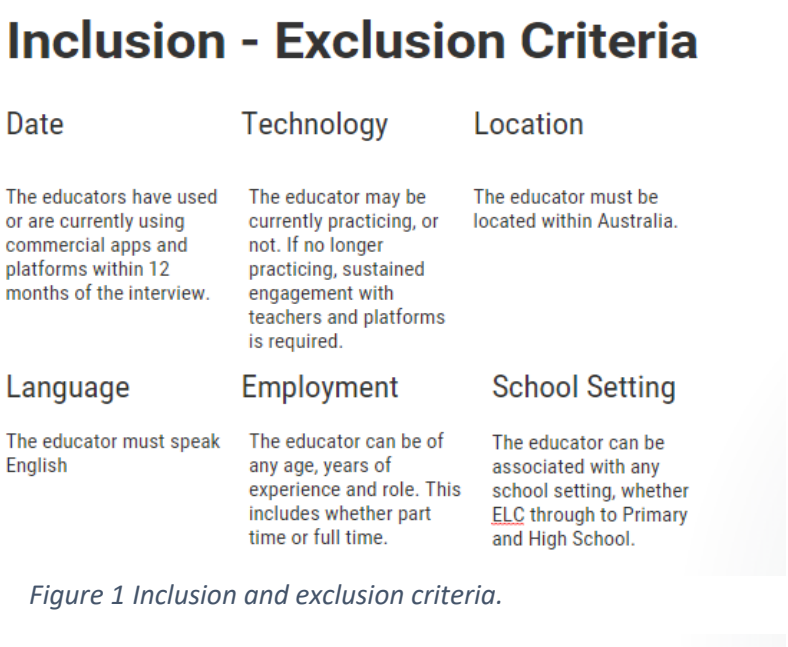

Figure 1 Inclusion and exclusion criteria.

platforms reach and engage educators concerning their products. The advertisement contained a link to a survey, and at the end of the survey, participants were invited to participate in semi-structured interviews. The inclusion criteria is detailed in Figure 1 below:

The findings presented in this paper draw only on the semi-structured interviews completed as part of the Apps in Australian Classrooms Project. The semi-structured interviews were guided by the work of Tsai et al. (2018) and an interview protocol comprising of a series of open-ended questions was used. See Appendix 1 for sample interview questions. The questions focused on the participant's negotiation of apps and platforms that use or provide predictive analytics. Each interview lasted between 45 minutes to an hour. The interviews (bar one) were conducted over the phone by one researcher, and all conversations were recorded on a digital voice recorder. One interview was conducted face-to-face at a meeting place of the participant's choice.

Following each round of interviews, the recorded conversations were transcribed in full and sent to participants for member checking (Creswell 2012). Data from the interviews underwent thematic analysis (Braun and Clarke 2006) and a developing theme focusing on the changing role of the teacher became apparent. Table 3. Illustrates the themes observed in the interview data analysis.

Table 3. Themes Observed in the Apps in Australian Classrooms Project Interviews

Phase 1 Interview Data	**Phase 2 Interview Data**
Commercialization Variable	*Control*
Personalisation	Commercial Modulatory Control
Scope	State or School Directives
Cost	*Discrimination*
Monetization	Bias
Guidance	Equality
Algorithmic Systems Variable	*Resistance*
Algorithmic Bias	The Trade-Off

Guidance	*Educational Practice*
Potential Implications	What should Learning Analytics do?
Social Dimensions Variable	What is Meaningful and Personalised?
Autonomy	*Role of the Teacher*
Power and Freedom to Act	Internal Capacity
Justice	Employment
Privacy	
Social Dimensions	

Initial inductive analysis of the interviews identified practices congruent with that of teacher influencers. The data was re-coded with this a focus on this theme and subthemes based on teacher influencer behaviour were developed. See Appendix 2. 'Sample of the Code Book' and Appendix 3. 'Sample of the coding.' Given the paucity of scholarship on teacher influencers (Shelton et al. 2020), we honed this theme (Braun and Clarke 2006) to present our preliminary exploration of this topic.

Results: A typology of Teacher Influencer behaviours

Our analysis highlighted variations in how several teachers in the study behaved as Teacher Influencers. For example, 'Dimble' was actively involved in various commercial and non-commercial online groups related to education and edtech. 'Dimble' described themselves as a 'teacher influencer' and was actively engaged in teacher discussion groups on social media. Another example was 'CSSH', who held an IT administrative position and was actively involved with commercial beta-testing of products. 'CSSH' would test apps and platforms, then share with teachers at their school how they may use technology as part of their educational practice. Another example is 'Jay' who enabled students' access to a platform and the benefits of the paid subscription by becoming a spokesperson for the platform. Using the data, we sorted Teacher Influencer behaviours into the three types: Sharing, Enabling and

Freelancing. The following reports on informed speculation to provide a rudimentary typology of Teacher Influencer behavior.

These categories represent a rudimentary typology of Teacher Influencer behavior. *Sharing* refers to educators using their relationships to build communities, train, communicate, engage and share knowledge within their school and beyond. *Enabling* refers to teachers engaging with the ambassadorial programs offered by the platform to allow others access to premium features that they would otherwise not be able to access. *Freelancing* refers to teachers who either used the title for employment purposes or to generate income beyond their role as a classroom teacher. Notably, participants' behaviours traversed all categories.

Our aim here is not to provide a definitive typology of *Teacher Influencers* behaviour. Instead, the findings are used to describe types of teacher influence behaviour (behaviours which indicate the complexity of the changing role of the teacher in postdigital classrooms). The categories are deliberately simplified and untangled to encapsulate salient aspects of the complex ways *Teacher Influencers* operate in Australian classrooms. In the following sections, we showcase sharing, enabling and freelancing behaviours.

'Sharing': Teacher Influencer as disseminator of knowledge

Sharing refers to behaviours involving teacher influencers leveraging the relationships enabled through commercial platforms to build communities, upskill, connect, and converse with educators across various contexts to share their knowledge. Through sharing teacher influencers connect with educators and share knowledge both within their school and beyond. 'Mr D', described a personal passion and interest for digital technologies. When discussing whether his IT role may involve influencing teaching and learning, he was clear that it did. For him, the goal was to share knowledge, tools, and understanding of how teaching and learning

can benefit and be challenged by technology. When asked directly, if he felt himself to be a Teacher Influencer, ‘Mr D’ replied,

> Definitely. The guys from IT, I work quite closely with a number of teachers and tech leaders from ITD, I’m part of the STEMShare’s ‘Makers and Breakers’ group that’s put out, you know, the STEMShare digital tech kits across the state. I was part of their STEMShare Learning Library. I put apps up and things like that so I’m very passionate about a wide range digital technology use in education and even in my own time, areas like cybersecurity have been a personal interest. [*Mr D, Primary Teacher, NSW*]

This personal interest and passion for discussing digital topics and sharing content was a driving force in participation in online groups. A similar approach was taken by ‘Cssh’. ‘Cssh’s vision of being a teacher influencer was one of trialling platforms and only sharing these on the basis of solid educational outcomes. ‘Cssh’ acts as a ‘platform tester’ for the school. When asked whether they would consider themselves to be a Teacher Influencer, ‘Cssh’ stated,

> Certainly, with IT, yes. … I’d go in, I’d see an app being demonstrated, and I’d bring it back ... If I was bringing it back to my school, I’d go and talk to our heads of IT, and I’d go, “Righto, here’s this app. It’s freeware, or it’s going to cost us”. If we need to cost, then that means I want to be able to find at least three to four departments that would benefit from this app. [*Cssh, secondary teacher, SA*]

‘Cssh’ provided a valuable information-sharing role within the school. Drawing on his expertise with digital technology and leadership experience, ‘Cssh’ was able to veto various platforms before they became established in his context. A similar sharing of knowledge at the local level was apparent with ‘Teacher L’. ‘Teacher L’, provided professional learning for teachers within and around the context of his school setting and stated: ‘I like that innovator role’. ‘Teacher L’ was regularly volunteering time to share knowledge and build a community of practice among teachers interested in using apps to improve educational outcomes in his local region. ‘Teacher L’ stated:

> [I have] run a whole day, every school holiday on just technology, and I've had people from all over the region, just to find out about apps. We just share apps as well, and how you could use them, and how they link to, and how they would make their life a little bit easier, or match the particular outcome in the curriculum [*Teacher L, primary teacher, NSW]*.

Sharing behaviours refer to activities that build a community of practice for sharing the common good of educational outcomes.

'Enabling': Teacher Influencers providing access

Enabling behaviours describe the actions of teacher influencers who were found to engage with the various programs offered by commercial platforms in order to enable their colleagues and/or students access to content and features not otherwise available. For example, some teachers acted as Ambassadors for platforms in return for access to premium features otherwise not accessible due to school funding restrictions. 'Jay' a secondary teacher in QLD, worked in a low socio-economic school and leveraged the offerings of ambassadorial programs for the benefit of his school setting. 'Jay' held various commercial titles as a means of accessing the paid content not otherwise available due to subscription costs. When asked about the titles held and the programs that have been enabled as a result, 'Jay' stated:

> Yeah, yeah. There's a couple of Ambassador programs I'm still looking at….Book Creator does. Book Creator Ambassadors open up extra. Makey Makey, I'm not 100% sure. I've only half looked into that. Seesaw opens up premium content as well [*Jay, secondary teacher, QLD]*.

By becoming a Seesaw Ambassador, 'Jay' enabled the paid subscription-based platform to be available at his school. 'Teacher L' described themselves as a teacher influencer. 'Teacher L' was a ClassDojo Ambassador, and when asked whether they held any other forms of accreditations, 'Teacher L' stated:

> No. There's a whole stack of them out there, and they're all a waste of time….A lot of the time they ask you to pay for things or do courses, and so they're requesting you to give up your time to give you little piece of certificate that really is not worth a lot by anyone anyway. (*Teacher L, Secondary Teacher, NSW*)

For the teacher influencers exhibiting *enabling* behaviour kudos or title is not a driving force. Rather it is a process of *enabling* equity and access to tools perceived as needed for educational outcomes that form the basis of choosing, using and promoting a specific platform. *Enabling* behaviour is underpinned by a focus on the common good and educational outcomes, by enabling others access to platforms perceived to be beneficial for teaching and learning.

'Freelancing': Behaviour that benefits the Teacher Influencer

Teachers that were understood to be engaged in *freelancing* behaviours were those that profited financially or professionally from their commercial associations. For example, some teachers were described as using the certificate provided by some platforms for employment purposes or to be garnering extra income. 'Dimble' had built a large following on various social media channels by sharing educational content. 'Dimble' explained how teachers who built such following, could then leverage their social networks and commercial platforms for personal profit. 'Dimble' stated that *freelancing* was 'pretty widely done':

> Not me personally, but there are a lot of people who are at that level, let's say. And they are actively monetising their content to the point where their teaching could become a side job rather than their main job. [*Dimble, Secondary Teacher, Victoria*]

Freelancing behaviours occur when teacher influencers are reimbursed through products, services or economic gain. Where a teacher influencer promotes their content and profits from it, they are largely not acting within established codes of conduct (Singer 2017). Some teachers, such as 'Dimble' are aware of the ethical complexity of directing students to particular products or videos. 'Dimble' noted,

But the difference is when I then force the students to watch them and say, 'This is homework', then it becomes complicated in the sense that they're captive in the use of technology as a result of me…. the students have no choice…[*Dimble, Secondary Teacher, Victoria*] Shelton and Archambault refer to 'online teacherpreneurship', as a process where a 'current or former P-12 teacher distribute their original classroom resources and ideas through online educational marketplaces such as TeachersPayTeachers.com' (2019: 398). Online 'teacherpreneurs' mostly viewed themselves as 'helpful, hard-working, creative, and organised' (Shelton and Archambault 2019: 398) and as such would also demonstrate the other behaviours (*Sharing* and *Enabling*) we describe. The defining element of *Freelancing* behaviour is that teachers are financially or professionally reimbursed for their labours by commercial platforms.

We follow this summary of teacher influencers' agentic behaviours with an exploration of teacher agency in commercialised classrooms. Each of the behaviours profiled here, sharing, enabling and freelancing demonstrate the agency of teacher influencers and their capacity to use, share and negotiate data and digital platforms to promote their brand in some cases, and/or for better teaching and learning outcomes. In their descriptions of their own or others' behaviour we can see that these teacher influencers understand that they have a better understanding of edtech products than most of their peers. For a number of the teacher influencers, we spoke to, their sharing and enabling behaviours were motivated by a desire to upskill their colleagues and connections.

Teacher agency in the commercialised classroom

Regardless of the reasons that teachers bring them into their classroom, the fundamental driver of edtech platforms is commercialisation, which draws on influencer marketing in education. As Hogan et al. (2018) have demonstrated, teachers are concerned about commercialisation. Contemporary classrooms contain complexities arising from the increased dependence on digital technologies. By way of example, teachers are largely unaware of the notion of

algorithmic bias and how it may perpetuate discrimination and inequity in predictive insights and recommendations (Arantes 2019); de-identified data does not afford privacy protections, and data is being used beyond its original intent (Culnane, Rubinstein, and Teague 2017); and, there is a significant amount of surveillance creep and widely held concerns with the types of data being collected and used (Andrejevic and Selwyn 2019).

Furthermore, with the increasing presence of analytics-based teaching and learning, new forms of risks and concerns regarding psycho-social persuasion are rapidly emerging that require ongoing scrutiny (Selwyn 2019). The data-driven products that offer predictive insights, machine learning and data analytics derive from commercial products. Here we found that teachers had the capacity and agency to be quasi-commercial actors themselves. As noted by Dimble: 'they're captive in the use of technology as a result of me', we can see that teachers are aware that they have a captive audience that they could (should they opt too) benefit from and that they are aware of how to use data to reach and engage other teachers. This capacity has yet to be leveraged for the benefit of challenging the data-driven commercialisation of education. And, there remains a strong bias in educational research to think of 'data' as standardised tests, and achievement data. This is increasingly being challenged in contemporary research (Perrotta and Selwyn 2020; Selwyn 2021; Selwyn et al. 2021). There is a *need* to talk back to this rhetoric, as it arguably perpetuates the commercial datafication of teachers and educational settings.

Where 'Jay' held various commercial titles to access paid content not otherwise available due to subscription costs, a new role could flag such opportunities and their challenges for others and enable economies of scale. Collective passions for sharing 'a wide range digital technology use in education' (Mr D) could help promote apps with strong data stewardship policies, enabling a new educational economy based on protecting educational data.

Teacher belief is understood as a central element of their agency (Biesta, Priestley, and Robinson 2015). Teachers who incorporate free apps of their choosing into their teaching were found to hold the belief that they are disseminating or enabling greater educational outcomes (Selwyn et al. 2017). How do such beliefs relate to commercialisation? How do teachers understand and delineate their educational successes and role, from their commercial successes and roles? While it is beyond the scope of this paper to answer these specifics questions, they do raise the possibility that the agency, knowledge, networks and behaviours enacted by teacher influencers could be leveraged to enable teachers to grapple with the implications of their usage of edtech apps and platforms.

Challenging what it means to be a 'Teacher Influencer' in Schools

Extrapolating from this initial discussion of teacher influencer behaviours, we propose that teacher influencers, with their amassed audience of thousands, can communicate and connect with educationalists around the benefits and challenges of educational technology, and provide guidance about data advocacy and stewardship. Not just through face to face meetings, but through targeted approaches using online communities and the data trails they produce. Thus 'data advocacy' can piggyback on the relationships the teacher has forged. Celebrating teacher influencers' agency and ability to reach and engage with teachers and leveraging commercial data to reach and engage others, teacher influencers could call for educational departments to work with them to use their 'celebrity' to advocate for increased data stewardship. As well as greater understanding of how data has impact for their employment and as part of a broader infrastructure with social and cultural implications (Beer 2017).

Part sales, part marketer, but at their core educators, the teacher influencer's ability to bring together key actors at a time when there is a fundamental shift towards intangible commercialisation, has the potential to redefine how commercial platforms are used in K-12 settings. Teacher influencers' sharing, enabling and freelancing behaviours demonstrates that

they have a range of skills that could be leveraged to raise awareness of the data-driven commercialisation of classrooms**.** Given the negative connotations of the term 'Teacher influencer', we call for a reconceptualisation of such teachers. With agency, influence, and knowledge of commercial platforms in education we suggest that such teachers be considered as *Educational data advocates*. This title encapsulates how data is central to the way in which platform capitalism functions and that data collection via digital technologies is now a feature of contemporary teaching.

The role of an educational data advocate

To better understand the rationale for teacher influencers to shift towards educational data advocacy, we turn to Priestley et al. (2012, 2011) who suggest that teacher agency is 'about repertoires for maneuver, or the possibilities for different forms of action available to teachers at particular points in time'. Secondly, the 'teacher influencer' figure can be understood as constituting a postdigital teacher identity. Postdigital teacher identities are a teacher's identity actualisation that works through algorithmic systems that infer categories of identity(s) on de-identified or anonymised data being positioned within established policy and guidelines. (Arantes 2021: 6). Given the shift occurring in contemporary Australian settings due to commercialisation, the presence of teacher agency concerning digital technologies offers a means to maneuver a counteraction. Biesta et al., (2015) acknowledge that teacher agency has the power to construct the everyday reality of educational practice both face to face and through data. As such, teacher influencers may use their agency or data by proxy, to realign their brand toward advocacy and adapt to the need for a greater understanding of the opaque uses of classroom data. The advocacy brand is significant, as commercialisation has various implications that need greater transparency and debate.

Acknowledging that the Sharing and Enabling Teacher Influencer behaviours were found not to be driven by financial or professional benefits, such calls also acknowledge that

Freelancing Teacher Influencers also have agency. As teacher agency can shape external stakeholder relationships (Buchanan 2015), this new role could cause a shift in 'the emphasis from what teachers have (skills, knowledge and capacity), to what they can do' (Hogan, Enright, et al., 2018: 672). They could actively use their influence to promote, discuss and raise communities of practice around educational data advocacy. They could actively use data to reach and engage with other teachers (as per the recruitment of participants in this study). They could act as an education data advocate in the provision of training and support for teachers negotiating commercial apps and platforms as part of their educational practice and in communication and outreach. As such, the new brand could be professionally profitable. Newly formed advocacy 'expert networks' should be integral to designing, promoting, and applying emerging policy and emergent data infrastructures. That way the distributed nature of policy design across 'different sectors, giving non-governmental organisations, businesses and other experts much more influence in the direction of policy' (Williamson 2019, 1) shifts towards advocacy more than commercialisation, platformization or sertivitation (Arantes 2019).

There is a growing presence of teacher influencers who share, enable and profit from their relationships with commercial platforms. Hogan, Enright, et al. stress that 'commercialised products and services are not necessarily problematic if the teachers and schools that choose to use them are aware of the significance of their choices and how those choices influence their educative responsibilities' (2018: 627). Therefore, with this statement in mind, we call for a new role that advocates for how data and analytics in education bring implications that commercialisation, whether inadvertent or deliberately, keeps opaque.

The educational data advocate would debate the differences between data and evidence, explain how data without context can bring about errors concerning the commercial products on offer and explain algorithmic bias within the context of their own school setting. The education data advocate could leverage teacher influencers' reach, network, and influence with

teachers. Highly networked and able to engage in greater debate and discussion but go back to their individual context to discuss how it would impact and affect them, the education data advocate is a niche form of a teacher influencer. The education data advocate would have the capabilities to discuss the new and emerging challenges facing education that are associated with big data and analytics. For example, the education data advocate with their advocacy-based brand, could draw on the work of those in the Learning Analytics community that have actively expressed concerns about the uses and abuses of educational data (Corrin et al. 2019; Kitto and Knight 2019). In doing so, education could promote calls for a new economy to be built on commercial platforms which meet advocacy standards.

At present, commercialisation profits by using teacher influencers to increase brand equity and build trust in their platforms. The education data advocate adopts a similar principle but with a brand based around advocacy. There is an opportunity to leverage the capabilities and skills that commercial organisations have long leveraged through influencer marketing strategies and use them to advocate for how data is used and shared (or not) instead. Teacher influencer agency may drive the development of education data advocates and the benefits from training and the creation of forums where like-minded teachers can share beliefs, strategies and support can be further supported and promoted. Without such a role, current concerns and risks will continue unabated.

A Pedagogical Framework for the work of the education data advocate

The ethical complexities of schooling has led to calls for educational ethicists, a role that is akin to that of bio-ethicists (Levinson 2017). While such role may take time to develop and formalise, the normative case study has been designed as a pedagogical tool for productively talking through the ethical complexities that teachers often find themselves in (Forster, McPherson, and Douglas 2019; Levinson 2017). Levinson (2015) describes normative case studies as empirically-informed case studies that centre on real-world

dilemmas of educational ethics confronting educators and policymakers. These allow for meaningful ethical reflection that encourages mutual understanding and a shared language for discussing ethical challenges. Taking our lead from the Justice in Schools project (https://www.justiceinschools.org/) who creates and distributes resources to help educators and policymakers develop their capacity to understand and negotiate ethical complexity, we advocate the develop of similar materials to support teachers in understanding the dilemmas that come with datafication of postdigital classrooms. Discussion protocols are used to fruitfully work through ethical discussions which there are no easy answers. Education data advocates could adopt this pedagogical model in order to work with other teachers and policymakers to discuss the competing priorities and hidden implications of working in data-driven schools.

Conclusion: The emerging economies of postdigital classrooms

Contemporary classrooms are highly technological spaces. Growing concern has been documented regarding the increased commercialisation of these spaces (Hogan, et al. 2018). A postdigital perspective allows for analysis beyond discussion of specific technologies, instead examining the practices, relations, and materialities produced through our changed relationships with technology. When examining postdigital classrooms, we can profile the unseen practices of data collection, data surveillance and algorithmically-driven behaviourism. These constitute a subtle form of commercialisation of classrooms that many teachers are unaware of (Arantes 2019). Teacher influencers are a group that are able to leverage the potential of the digital environment, not (only) for their own material and reputational benefit, but to share knowledge, to enable and empower colleagues and students.

Teacher influencers can use their social relationships (both online and offline), their access to various apps and platforms, and their technical knowledge to advocate for the ethical use of educational data. In presenting our vision of the education data advocate we have sought implicitly to make clear the complexity of contemporary education settings. Teachers' work not only takes place in classrooms, but also online, and teachers are frequently connected across schools, jurisdictions and countries (Arantes 2021). They are able to leverage their social relationships to share practice, knowledge and skills widely.

By opening up for discussion the processes and relationships that facilitate this sharing and the digitally driven practices taking place inside digitally connected classrooms, we hope to illuminate the often-hidden aspects of contemporary teaching. In this context the teacher influencer is a yet untapped resource for addressing concerns about commercialisation. It is also worth asking would teacher influencers in this role as education data advocate have a conflict of interest, particularly if they stand to profit from their influencing rolls around particular platforms. Further, our data suggested that some teacher influencers don't very easily understand platform capitalism. Further research is required to explore how such influencers be able to act as an education data advocate? In light of this concerning finding, what role might teacher educators need to play in providing training and support for a competent education data advocates? To adapt to emerging technologies such as artificial intelligence, automation, machine learning and algorithmically driven behaviourist technologies, an advocacy role needs to be formalised. In doing so, challenges associated with data and analytics in postdigital classrooms could be understood as being deeply contested but manageable, rather than being an inevitable aspect of commercialisation.

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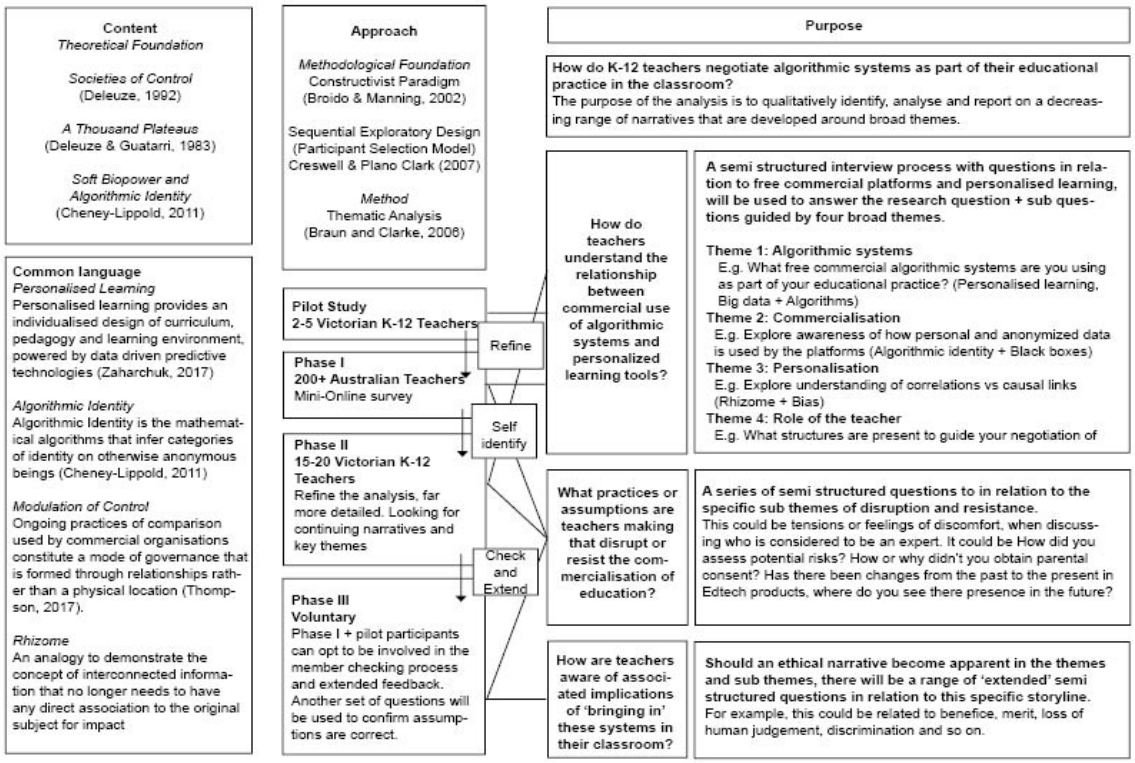
Appendix 1. Conceptual Overview of the Apps in Australian Classroom Project.



Appendix 2. Sample Interview questions

Source: SHEILA project – content has been modified to suit research (for those out of the classroom in red)		
Themes	**Questions**	**Prompts**
Usage	1. I will start with questions about what apps you currently use, whether you are still in a school setting and so on, then move into questions related various social dimensions of using apps and platforms in K-12.	a. Are you currently working in a K-12 setting? If not, how has it been since you last worked in a K-12 setting? b. Of the following apps and platforms, which have you used in the last 6 months, please say yes or no. (Edmodo, Classdojo, Duolingo, Immersive Reader, Education Perfect, Stile, Google, Youtube, Google Classroom, Microsoft Education) c. Do you work with Indigenous students or Students with Learning Difficulties or Disabilities? (Trend Analysis) d. Are you a: Apple Teacher, Microsoft Innovative Educator, Google Certified Educator (Level 2)
Terminology, SHEILA s(Purpose)	2. The next question has a look at terminology and	Referring to a statement made by a K-12 teacher on Twitter, [name withheld] "#AI @MicrosoftEDU is all about using data in a way that is meaningful for end users".

	how you may have become aware of such terminology.	a. What is meaningful education / educational practice to you? (**Theme**, previous interviews + **App walkthrough**) b. Who are the 'end users'? (**App walkthrough** - Data use, targeted advertising / partnerships) c. Do you consider there to be a difference between 'personalised learning' and 'personalisation'. (as taken from **Trend** analysis) (ie meaningful for the end user) d. Have you received any PD, been involved in any discussion and so on about the use of Artificial Intelligence in K-12 Education? (as taken from **Trend** analysis)

Appendix 3. Sample of the Code Book

1. Cost

This theme identifies the primary uses of free and paid apps, including resistance to the use of either. The types of platforms used varies according to socio economics is identified, including schooling system.

Codes	Descriptions
Free Apps	Who is using free apps, why are they using free apps, is there resistance to free apps, is there freedom of choice in free apps, what schooling system are they part of, are they regional and so on
Paid Apps	Who is using paid apps, why are they using paid apps, is there resistance to paid apps, is there freedom of choice in paid apps, what schooling system are they part of, are they regional.

2. Monetisation

This theme explores awareness and understanding of methods used in the process of platform capitalism via the 'front end' and the 'back end'.

Code	Descriptions
Monetizing Teachers – the front end	Participatory online culture and Rapid Upscaling How are teachers engaging with commercial Badges and Certificates? This includes teacher influencers and conference presentations.
Monetizing Teachers – the back end	Cookies and Monetising teacher data How do teachers understand predictive analytics, big data and targeted advertising (nudging)? Are they aware / have an understanding of 'personalised' targeted advertising on their social media?

Appendix 4. Sample of the Coding

Speaker	Comments	Commercial Modulatory Control	State or School Control	Bias	Equality	Learning Analytics	Internal Capacity	Employment	The Trade Off	Data Collection	Meaningful and Personalised
G1	Meaningful. I guess it's been meaningful in that teachers can use it so they understand it, they understand what exactly the data is about, what it's gathering, what it's looking at, and being able to use that in some way in your classroom. So they're not just gathering it for the sake of gathering it, but gathering it in order to do something with it. Something productive, something to take students' learning further, I would imagine.	0	0	0	0	0	0	0	0	0	1
G1	Well, the teachers are the ones that are using it, and they're using it to improve learning for students, so I would say the end users should be the teachers.	0	0	0	0	0	1	0	0	0	0

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