An investigation of ClassDojo as a technology of power and the school discipline practices and pedagogies performed through its use

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Abstract

Recent decades have seen a widespread 'technification' of education, creating an environment in which digital technologies have become part of the fabric of schooling and schools. Included within this technological expansion and its increasing sphere of influence is the domain of school discipline, whereby education technologies, such as ClassDojo, are becoming increasingly common and are viewed as a panacea for issues of student behaviour.

Despite its popularity, little is known about how and why teachers and schools use ClassDojo to discipline students, and its influence upon school discipline practices and pedagogies. Research into the impact of data-centric technologies is emerging; however, there remains a pressing need to understand how they are shaping classroom practices. This is particularly important for school discipline practices because they directly influence student learning and development.

The aim of this research was to critically investigate how ClassDojo shapes understandings of student behaviour and school discipline practices. Utilising a multi-method approach, the research was conducted over two phases. Phase One used a walkthrough of the ClassDojo platform and online documentary research to examine how ClassDojo's design and features influence the way student behaviour is understood and addressed. Phase Two employed unobtrusive online observations, semi-structured interviews and additional documentary research to examine how and why teachers and schools use ClassDojo to address student behaviour. The data were analysed thematically using a hybrid iterative inductive-deductive approach.

The study found that the design and functions of ClassDojo promote processes and logics of datafication, surveillance and behaviourism which shape both understandings of student behaviour and the practices used by teachers. Consistent with this, the findings showed that the platform is being used to: 1) shape student behaviour through techniques of control, 2) surveil students and make them visible, and 3) govern student behaviour with datafied constructions of knowledge. They also revealed that teachers and schools use ClassDojo for its control-oriented functions.

The study's findings were interpreted using theory based on Foucault's analytics of power. The thesis suggests that the design of ClassDojo, and consequently the ways that it is used within the classroom, is underpinned by behaviourist logics of discipline which constitute

it as a technology of behaviour modification. While teachers and schools view ClassDojo as a way to shape behaviour, gamify school discipline and increase student engagement, its implementation expands and intensifies student surveillance and exerts greater control over student behaviour. Moreover, ClassDojo's design and use in practice promote and exhibit neoliberal characteristics, suggesting it represents a new neoliberal pedagogy of school discipline. Drawn together these insights suggest that ClassDojo promotes and facilitates a narrow, datafied form of school discipline within which control is the underlying imperative.

The study contributes new knowledge in relation to school discipline and education technologies by developing new understandings of how and why ClassDojo is being used in schools to enact school discipline practices. This contribution is accentuated by directing attention to an oft-neglected aspect of practice, that is, how power is implicated in the application of technologically mediated school discipline practices.

Declaration

I declare that:

- this thesis presents work carried out by myself and does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university;
- to the best of my knowledge, it does not contain any materials previously published or written by another person except where due reference is made in the text; and
- all substantive contributions by others to the work presented, including jointly authored publications, is clearly acknowledged.



Jamie Manolev 11 October 2022

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List of publications

The following peer-reviewed publication was produced from the analyses undertaken in this thesis. It forms the basis of Chapter 5 'Phase One findings – Shaping understandings of student behaviour and school discipline practices'.[1]

Manolev, J., Sullivan, A., & Slee, R. (2019). The datafication of discipline: ClassDojo, surveillance and a performative classroom culture. *Learning, Media and Technology*, 44(1), 36–51. https://doi.org/10.1080/17439884.2018.1558237

[1] See Appendix A for the author contribution statement associated with the article.

Chapter 1: Introduction

This thesis presents a critical qualitative inquiry of ClassDojo, an education technology created for teachers to help them with the management of classrooms. The study investigated how ClassDojo shapes understandings of student behaviour and school discipline practices, how it is used by teachers and why teachers decide to use it. In particular, the study examined the manifestations of power that occur through ClassDojo when it is used as a school discipline technology. This chapter introduces the study by establishing the research problem and background to the study, outlining the significance of the study, and providing an overview of the thesis.

Background

ClassDojo was launched in 2011 (ClassDojo, n.d.) out of California's Silicon Valley by two British entrepreneurs, Sam Chaudhary and Liam Don (Mead, 2013). The pair developed the application (app) in response to concerns raised by teachers related to student behaviour and school discipline (Mead, 2013). As a result, ClassDojo was initially released as a behaviour management app that aimed to help teachers with their concerns (Barseghian, 2011). ClassDojo was founded on principles from 'assertive discipline', a behaviour management approach that was developed in 1976 by Canter and Canter (Chaudhary, 2012). It provides teachers with a tool designed to reinforce positive student behaviour and build students' character traits. Shortly after the app's release, Chaudhary declared that the technology's future development would focus on building students' character. He stated, 'we want to bring the same rigour to developing character as ed-tech … currently reserves for developing test scores' (Watters, 2011). Chaudhary was referring here to the concerted efforts of the education technology sector to provide educators and schools with ways of improving student test scores (Bentley, 2018) using rigour applied through techniques of 'measurement, assessment and reporting' (Chaudhary, 2012). His vision for ClassDojo was to emulate this 'rigorous' approach for the improvement of student character, in which 'good behaviour' would be key (Chaudhary, 2012). This focus on behaviour was integrated with a design that gave the platform a game-like look and feel, an aspect Chaudhary claimed was popular with teachers (Wan, 2014). It was also designed as a 'mobile-first platform' (Robinson, 2021, p. 599), and over time broad device compatibility meant it could be used on most devices (ClassDojo, n.d.). Despite this strong focus on behaviour, ClassDojo has evolved over the years to become more than just a

behaviour management app. Described by some as social media for schools (Rodriguez, 2016; Williamson & Rutherford, 2017), its developers have concentrated on providing additional ways for school communities to communicate. While ClassDojo's growing range of functions has undoubtably drawn many teachers to its use, its behaviour-centred features remain popular.

Since its inception ClassDojo has rapidly grown in popularity. ClassDojo is one of the most successful and widely used education technologies on the planet, with reports of 51 million users coming from almost every country in the world (Chaykowski, 2017; Mascarenhas, 2021; Nickie, 2021). Starting out with 80 teacher users in its first week (Montini, 2015), it grew quickly, and within two months it had been downloaded 30,000 times (Hess, 2015). This remarkable and rapid growth continued and by 2015 ClassDojo had outstripped mobile app titans Yelp and Tinder with downloads reaching more than 500,000 a day (Jackson, 2016). Recent reports indicate that its popularity is particularly strong in Australian, European and North American schools (Bridge & Bennett, 2018; Cook, 2019; Hillman & Esquivel, 2022; Williamson, 2019a). ClassDojo's own website states that it is being used 'in 95% of all K-8 schools in the US' and that '1 in 6 US families with a child under 14 use ClassDojo every day' (n.d.). Such figures indicate the extraordinary reach and presence of ClassDojo into schools both internationally, and within particular national contexts.

ClassDojo is promoted as a solution to the problems and concerns teachers have with school discipline, especially student behaviour. The main message on the ClassDojo website is 'no more "classroom management". Just happier classrooms :)' (ClassDojo, n.d.). ClassDojo co-founder Sam Chaudhary has explained in numerous interviews that the impetus for creating ClassDojo was a recognition of the difficulties teachers have 'managing student behaviour', and a belief that 'punitive' strategies were the only tool available to them for addressing problematic student behaviour (Hess, 2015; Mead, 2013; Wong, 2016). He claimed that ClassDojo would help teachers move beyond the use of 'carrots and sticks, detention sheets, [and] discipline trackers' to improve student behaviour (Hess, 2015). Chaudhary draws a direct connection between poor student behaviour and human character traits, claiming that poor behaviour is 'what happens when character strengths and learning habits are not developed sufficiently' (Chaudhary, 2012). In a 2015 interview, Chaudhary explained that ClassDojo was built to solve this problem by providing teachers with a way to give students 'positive' feedback (Hess, 2015), which he argued would not only build 'positive behaviour but also good character over

time' (Chaudhary, 2012). Chaudhary has also stated that low parental engagement is a problem in education, both of itself, and in relation to addressing problems of student behaviour (Hess, 2015). ClassDojo promotes itself as a technological fix for this problem, claiming on its website that through its platform teachers can 'Keep parents and students engaged' by 'connect[ing] with families' through 'communication that works' (ClassDojo, n.d.). The basic thesis from the company is that it can improve parental engagement by making it easier for teachers to share information with parents, thus fostering increased communication between parents and teachers that will build positive relationships (Mead, 2013). Importantly, this includes sharing information with parents about their children's behaviour, a practice Chaudhary believes parents value and are eager to engage with (Mead, 2013). Underpinning this rationality, and consequently ClassDojo's design, is 'the assumption that a student's education is the responsibility of more than just teachers in classrooms' (DiGiacomo et al., 2019). While ClassDojo asserts that it offers a simple and effective technological fix to both the problem of student behaviour and parental engagement, it is important to remember that 'the realities of digital technology use in education often fail to match the rhetoric' (Selwyn, 2017, p. 36).

Running counter to the solutionist narrative promoted by ClassDojo's founders and on its website, a range of concerns have been raised about the way ClassDojo is being used and the negative impacts it may be having on education. Such concerns have been raised by a range of stakeholders including researchers, educational experts, teachers and parents, and have involved a number of issues. Some of the issues raised have included data-related concerns, such as claims that ClassDojo is harvesting sensitive student data (Bridge & Bennett, 2018), and that it is being used in ways that breach students' privacy (Pilieci, 2014; Singer, 2014) and impinge on children's rights (Garlen, 2019). Concerns of a pedagogical nature have also been raised, with some arguing ClassDojo's approach to behaviour is outdated and simplistic (Terzon, 2017), and includes techniques that shame students (Vittrup, 2015), and that it subjects students to excessive levels of assessment (Chaker, 2017). While such reports are few when compared to the positive coverage ClassDojo receives across news and social media outlets, they have raised a variety of concerns about the potential negative impacts of ClassDojo as an education technology that for the most part have not been investigated.

Significance of this study

Despite ClassDojo's popularity little is known about how and why teachers and schools use it for the management of student behaviour. Building an understanding of this is important because of the influential relationship that exists between the way teachers manage classrooms and behaviour, and student learning and development (Evertson & Weinstein, 2006). As it stands, research examining ClassDojo as an education technology is scant. Of the emerging research most has focussed on exploring the effects certain ways of using ClassDojo have on student behaviour. The remaining research is less uniform in its focus and includes studies that have investigated students' views of ClassDojo (Cetin & Cetin, 2018; DiGiacomo et al., 2022; Kaplan et al., 2021), teachers' experiences using the platform (Lu et al., 2021), and the network relations within which ClassDojo has emerged and through which it operates (Robinson, 2021; Williamson, 2017b, 2017c). Importantly, largely missing is empirical research that has examined how and why teachers and schools use ClassDojo for the management of student behaviour as part of their everyday practices. While small clues about how ClassDojo has been used with students can be garnered from studies that have examined students' views, what can be learned from such clues is rudimentary. Moreover, two small studies to date have investigated aspects of this neglected research area: Lu et al.'s (2021) study examined how teachers' bias manifests in practices involving ClassDojo, and Krach et al.'s (2016) study examined how teachers use ClassDojo to produce behavioural data about students. However, due to their small sample sizes and narrow focus, the knowledge developed by these two studies is limited. Consequently, there is a need for empirical research that examines the specific practices and pedagogies that teachers and schools are implementing with ClassDojo in the everyday activities of classroom life. There is also a need for research which brings together the fields of school discipline and education technology with a focus on relations of power as research focussed on their convergence is scarce. This study was developed in response to this dearth of research on ClassDojo and seeks to contribute empirically to a greater understanding of how and why teachers and schools are using it to address issues of student behaviour. Such research will provide new ways to understand the relationship between ClassDojo and the way teachers and schools are using it with students to enact school discipline practices. This knowledge may subsequently be used by education stakeholders to consider the implications of using ClassDojo as a school discipline technology.

While the gradually expanding range of studies investigating ClassDojo signals the beginnings of an emerging body of research knowledge on the platform, studies that engage with issues of power are scarce, particularly in relation to the practices carried out through its use. It is within this space that this study seeks to make a contribution. That is, it will specifically seek to address the dearth of research knowledge regarding how and for what reasons teachers use ClassDojo for issues of student behaviour and will do so in a way that draws attention to the workings of power.

Overview of research design

This study was conducted as a critical qualitive inquiry. The study had two main purposes: to investigate a) the way ClassDojo's platform represents students and their behaviour, and the behaviour-centred functions it provides teachers, and b) how and why teachers are using 'ClassDojo' in relation to their school discipline practices. The following research questions guided the study:

1. How does ClassDojo shape understandings of student behaviour and school discipline practices?

2. How do teachers and schools use ClassDojo to manage student behaviour?

3. Why do teachers and schools use ClassDojo to manage student behaviour?

The research was carried out over two phases and incorporated a multi-method approach. Phase One investigated how ClassDojo's platform shapes understandings of student behaviour and school discipline practices and employed the walkthrough method and online documentary research to collect data. Phase Two investigated how and why teachers and schools use ClassDojo for managing student behaviour and employed the techniques of online documentary research, unobtrusive online observations and semi-structured interviews to collect data. The data were analysed thematically using a hybrid iterative inductive-deductive approach.

Thesis chapter outline

In Chapter 2 I provide a review of literature fundamental to understanding ClassDojo and the way it functions as a school discipline technology. I begin by examining the literature on school discipline with a focus on perspectives on school discipline, how understandings of student behaviour are formed, and several broad approaches to school discipline. I then

review research conducted on ClassDojo to establish what is known about the platform and its application in schools to address student behaviour. I then examine the education technology literature in relation to digital education platforms and gamification before moving on to literature examining the datafication of education. I then return to reviewing research on ClassDojo; this time however I focus on studies that have examined the platform itself. Lastly, the paradigm of 'governing by numbers' in education is explored with a focus on the fundamental processes that underpin the way numbers function as governing devices, their application in education and their links with neoliberalism.

Chapter 3 outlines the theoretical framework that underpins this study. I describe why and how I used Foucault's ideas on power to interpret and develop understandings about ClassDojo and its use as a school discipline technology. I then describe the specific theoretical tools I selected to assemble the study's theoretical framework.

I describe the critical qualitative inquiry methodology applied to this study in Chapter 4. The methodology's connection to and compatibility with the research questions and aims of the study are established, and the critical epistemology upon which it is grounded explained. This is followed by a comprehensive explanation of the research design referred to earlier which in addition outlines the purpose and justification for employing the design and the methods within it.

In Chapter 5 I report and discuss findings from Phase One of the study, which investigated how ClassDojo shapes understandings of student behaviour and school discipline practices. The chapter is presented in the form of a published peer-reviewed paper, 'The datafication of discipline: ClassDojo, surveillance and a performative classroom culture'. The main findings reported indicate that ClassDojo shapes understandings of student behaviour and school discipline through a) its datafication processes, b) its reliance on surveillance processes, and c) the behaviouristic logic embedded within its design. A discussion of these findings problematises the ways student behaviour is represented, and school discipline practices made possible and promoted, through ClassDojo's platform.

Chapter 6 then presents the findings from Phase Two of the study, which examined how, and for what reasons, teachers and schools use ClassDojo as a school discipline technology. These findings focus on describing the different techniques, strategies and practices teachers and schools deploy through and with ClassDojo when they use it for disciplinary purposes. Three main findings are reported: teachers and schools use ClassDojo a) to shape student behaviour with techniques of control, b) to monitor students and make

them visible, and c) to govern student behaviour with datafied constructions of knowledge.

A discussion of the study's findings is provided in Chapter 7. Using the theoretical framework described in Chapter 3 and relevant literatures I provide a critically oriented interpretation of ClassDojo and its use as a school discipline technology. I discuss ClassDojo in relation to the control-oriented discipline approach teachers and schools implement through the platform, the multiple forms and extensive use of surveillance deployed with ClassDojo, the neoliberal characteristics evident within the practices and pedagogies enacted through its use, and the three main reasons teachers provide for using the platform.

The thesis is brought to a conclusion in Chapter 8. I bring the study's findings together to draw conclusions about the ways ClassDojo is shaping understandings of student behaviour and practices of school discipline, how teachers are actually using it to address issues of student behaviour, and why they are using it for those purposes. I additionally consider the broader significance of this thesis by outlining the implications of the findings for practice, theory and methodology.

Chapter 2: Review of the literature

This chapter provides a review of relevant literature to establish what is known about ClassDojo and the areas of study associated with its use. I begin by reviewing the literature on school discipline to examine the purpose of school discipline, views of student behaviour, and different approaches to school discipline, which will provide a basis from which to consider the form of school discipline promoted by, and enacted through, ClassDojo. Second, I review the research that has examined ClassDojo to establish what is known about the platform, how it is used as a behaviour management technology, and what remains unexamined. I also review research that has been undertaken on ClassDojo as an education technology. Whilst this body of research is small it adds to understandings of ClassDojo by considering how broader societal arrangements have influenced ClassDojo's formation and the ways it operates. Third, I examine literature on education technology to define what is meant by the concept in this thesis, offer a conceptual framework for understanding digital education platforms, and identify gamification as a key feature of education technologies. Such ideas are important for understanding how ClassDojo functions as a technology and the range of processes and functions it provides for managing student behaviour. Fourth, I examine literature on the datafication of education. I consider how datafication is defined, the increasingly prominent role of datafication in education, and notions of objectivity associated with its use. Data are central to the way ClassDojo operates; thus considering the role they may be playing within ClassDojo's features and functions is important. Lastly, I review literature that has examined the phenomenon of governing by numbers in education. Within this section I consider the links between governing by numbers and datafication, examine several key processes associated with the use of numbers as governing devices, and consider it as a feature of neoliberal education. Considering how numbers are used to govern is important for understanding ClassDojo as numbers are embedded in a range of its functions used by teachers to govern students and their behaviour.

School discipline

Perspectives on the role and purpose of school discipline

School discipline is a mechanism 'through which the school imposes and maintains its view of order' (Maguire et al., 2010, p. 153) using practices that shape, educate and govern

the student population (Hunter 1994, as cited in Millei, 2010). School discipline sits within the broader area of classroom management (Egeberg et al., 2020). However, school discipline is concerned more specifically with student behaviour, including aspects such as the socialisation of students and the application of disciplinary interventions (Brophy, 1988). While oversimplistic notions of school discipline exist in some school contexts (Millei et al., 2010; Slee, 1995), it is recognised within school discipline research literature as a complex phenomenon that takes place amidst the convergence of an array of at times competing forces, interests and demands (Arum et al., 2019; Johnson & Sullivan, 2016a; Osher et al., 2010). Ultimately, school discipline and the policies that guide its implementation are fundamental to both the social conditions that exist within schools, and the learning and development experienced by students (Cameron, 2011). Thus, the way schools do school discipline is important and varies according to the views schools hold about order and how it should be established, which has a bearing on the way students experience school.

In his extensive research on school discipline policy and practice in Australia, Slee (1995) argues that schools often uncritically accept discipline as a synonym, and ultimately a verb, for control. Such reductionism, he argued, is the result of an untheorised notion of discipline in which 'control [has become] the imperative, discipline and education the casualties' (1995, p. 13). Thus, conceiving of school discipline in such narrow terms reduces its scope to a set of behavioural responses and intervention techniques (Carter & Doyle, 2006) with a purview primarily restricted to the attainment of student compliance (Slee, 1995). Such analysis draws attention to the purposes with which school discipline is employed and raises questions about whose interests it serves. Responding to this pervasive reductive conception of discipline, Slee (1995) offers a retheorisation that re-connects discipline with its educational origins. In it, he retrieves discipline's educational purpose and reinserts its productive possibilities for students as part of a broader educational vision of schooling. His concept emphasises discipline as an educational quest, a dialogical process that informs the governance of individual and community, a process inexplicably entwined with the relational bonds that form between student, school and learning, and a process he affirms 'is democratic not authoritarian' (Slee, 1995, p. 30). Therefore, the way school discipline is deployed in schools can take many forms and appears to be closely related to the way discipline is conceived, in particular the purposes it is seen to serve.

For many, school discipline is thought of primarily in terms of its punitive application; however, in schools it has been associated with a range of instructional and organisational purposes (Skiba & Rausch, 2006). Arguably, one of the most common purposes schools attach to its application is to create, and maintain, an orderly learning environment that is conducive to learning (Arum et al., 2019; Bear, 2015; Carter & Doyle, 2006; Johnson & Sullivan, 2016b; Raby, 2012; Skiba & Rausch, 2006; Slee, 1995). Although questions associated with the notion of order and how it can be produced with school discipline have been raised, as Slee (1995, p. 22) points out, 'the order of blind obedience is qualitatively different from an educational orderliness'. He contends that in the latter form of order the 'connection between the learner, what they are doing, how they are doing it, and where it is leading' is fundamental (Slee, 1995, p. 26). Similarly, Kohn (2006) in his critique of school discipline in North American schools argues compliance is almost always the purpose of school discipline in its pursuit of orderliness. Apart from explicit links to order, its purposes have also been maintaining school safety, deterring and preventing misbehaviour (Skiba & Rausch, 2006), developing self-discipline (Bear, 2015; Freiberg & Lapointe, 2006; Osher et al., 2010), and producing in students a 'generalised social improvement' (Slee, 1995, p. 30), or more specifically the adoption of expected societal norms, values (Arum et al., 2019; Deakin et al., 2018; Skiba & Rausch, 2006), and character traits (Bear, 2015; Lewis, 2006). Therefore, schools, collectively, view school discipline as serving a range of purposes that seem to be concerned in large part with orderliness and the moral and social development of students and their behaviour.

How schools describe and classify student behaviour

Behaviour is recognised as 'one of the dominant discourses of schooling' (Ball et al., 2012, p. 98), and is implicated in establishing how behaviours are described, what types of behaviours are important, and their significance in relation to each other. Student behaviours are often classified in broad binary terms which represent them as either positive or negative behaviours. Such terms include inappropriate, problematic, disturbing, bad and challenging on one side, and appropriate, desirable, positive and good on the other (see e.g. Ball et al., 2012; De Nobile et al., 2015; Gettinger & Fischer, 2015; Lanas & Brunila, 2019; Sugai & Simonsen, 2015; Thomson & Pennacchia, 2016). Within these broad behaviour categories, more specific descriptions of behaviour can be found. For example, negative behaviours can be subdivided into those of a severe or serious nature, such as aggressive and anti-social behaviour, or those which can be considered less serious such as disruptive or disengaged behaviours (Angus et al., 2010; Carter & Doyle, 2006;

Lyons & O'Connor, 2006; Sullivan et al., 2014b). Similarly, positive behaviours may be further classified using descriptions such as academically engaged, self-disciplined, pro-social or obedient (Colombi & Osher, 2015; Dutton Tillery et al., 2010; Lane et al., 2006). These insights provide a window into the discursive construction of behaviour within the context of school discipline, and how language is used as a classificatory system through which the understanding of behaviours is shaped.

How schools constitute notions of behaviour

Research has shown that schools often constitute behaviours in ways that categorise them as acceptable or unacceptable (Lanas et al., 2020; Raby, 2012). Such constructions reveal the way ideas about behaviour are imbued with power relations and reflect the dominant discourses embedded within schools (Lanas et al., 2020; Raby, 2012). Acknowledging that power is implicated in the ways schools constitute behaviour contradicts commonly held assumptions that decisions about behaviour are made from a neutral, value-free perspective and represent common-sense thinking (Lanas et al., 2020; Raby, 2012). Lanas et al. (2020) argue that behaviours situated outside of dominant discourses of acceptable behaviour are at significant risk of being inscribed as challenging or unacceptable. Such determinations are subject to the entangled relationships between power, discourse and authority and the way the enactment of school discipline has developed to be inextricable from authority (Clark, 1998). Within this nexus, dominant discourses often operate by constituting behaviours that sit outside of their boundary as inherently challenging to a school's authority (Lanas et al., 2020). Raby (2012) argues that this notion of authority reveals the value-laden nature of behavioural norms and rules. She notes that acceptance of, and obedience to, authority is inherent in most rules and behavioural norms within schools and can be seen in the way particular behaviours are promoted, such as obedience, punctuality and restraint. Thus, it can be argued that ideas about the acceptability of behaviours in schools reflect dominant values, are autocratic in nature, and function to produce certain kinds of students (Raby, 2012). Simply put, such behaviours are constructed 'within a cultural context that they in turn reflect and reproduce' (Raby, 2012, p. 30).

These culturally constructed views about behaviour in schools, which classify behaviours as either acceptable or unacceptable, are often communicated through behaviour codes, or codes of conduct. Consequently, behaviour codes are a normative component of schools' disciplinary programs (Fenning & Bohanon, 2006; Raby, 2012). They function as a

mechanism through which schools formalise rules for behaviour that are used to govern students' conduct (Fenning & Bohanon, 2006; Raby, 2012) while reinforcing the hierarchies of power within schools (Drew, 2018). Furthermore, research has shown that, when schools develop codes of conduct, the behaviours and rules they choose to include in them are often informed by broader philosophical aims, 'such as rights, responsibilities, obedience, and self-discipline' (Raby, 2012, p. 23). Thus, generally, behaviours deemed as acceptable within such codes include those that convey responsibility, obedience, respect and self-control, while behaviours deemed unacceptable convey irresponsibility, disobedience, aggression, unsafe behaviour and a lack of control. However, despite the orthodoxy that exists in schools of classifying behaviour in such ways, alternatives have been proposed which shift the classification of behaviour toward a stronger focus on its relationship with learning.

Recent Australian research examining student behaviour in classrooms has offered an alternative framing through which to classify behaviours that constitutes them as productive and unproductive (Angus et al., 2010; Sullivan et al., 2014b). Unproductive behaviours were defined as 'actions that impeded a student's academic progress' (Sullivan et al., 2014b, p. 46), while behaviours that facilitated academic progress were labelled as productive (Angus et al., 2010). The use of such language marks a departure from the common terminology used within school discipline literature, such as acceptable and unacceptable. This departure is not inconsequential; rather it indicates an important reframing of behaviour that restores its connection with teaching and learning (Slee, 1995; Sullivan et al., 2014b). Furthermore, it aligns with the view that 'the way we look at the problem often determines its solutions' (Freiberg, 1999a, p. 15). Thus, reframing behaviour in terms of its relationship with teaching and learning creates possibilities for addressing unproductive behaviours that move beyond seeking compliance and maintaining order, to those consistent with the educational role of the school (Slee, 1995).

The prevalence of unproductive behaviour types in schools

A growing body of research on student behaviours reveals that the unproductive behaviours teachers most frequently encounter are considered minor behaviours (Angus et al., 2010; Beaman et al., 2007; Graham, 2016; Johnson et al., 1993; Sullivan et al., 2014b). More serious unproductive behaviours, such as aggressive and anti-social behaviours, occur on an infrequent basis (Angus et al., 2010; Graham, 2016; Lyons & O'Connor, 2006; Sullivan et al., 2014b). Despite the majority of unproductive behaviours being minor in

nature, they are nonetheless prevalent, and regarded by teachers as concerning and difficult to deal with (Arbuckle & Little, 2004; Sullivan et al., 2014b).

In their study on classroom behaviour and student engagement, Angus et al. (2010) raised significant concerns associated with the impact of minor unproductive behaviours on student outcomes. The study found that disengaged student behaviours were the most common and particularly problematic, revealing that students who were disengaged from school performed at significantly lower academic levels than their engaged peers (Angus et al., 2010). Disengaged students were described as generally compliant and cooperative yet uninterested in their schoolwork, stopped work on tasks before they were completed, were distracted easily, were unprepared for lessons, and chose not to participate in class activities (Angus et al., 2010). This major finding is important as it emphasises the significance of attending to disengaged behaviours. However, more than this, it also provokes a reconsideration of how unproductive behaviours are conceived of in schools, a point made by Sullivan et al. (2014b, p. 53), who argue:

> by focusing on engaging students, there is a need to unsettle notions of what constitutes unproductive behaviour. This requires educators to rethink what is normal or acceptable classroom behaviour by considering what behaviours support engagement in learning and schooling more generally.

In this way of thinking behaviour is considered according to its relationship with educational engagement, rather than, for example, compliance or obedience. Such a view supports an educative approach to school discipline which attends to the most common unproductive behaviours in schools. However, while distinguishing behaviours in such ways is a key aspect of the way schools discipline students, so too is how they interpret the causes of student behaviour.

Dominant views about student behaviour and factors influencing student behaviour

Interpretations of student behaviour and the factors that influence it are dominated by attributional theories that explain the causes of behaviour in individualised and pathologised terms (Down, 2016; Johnson & Sullivan, 2016b; Slee, 1995; Taylor & Kearney, 2018). That is, behaviour, in particular behaviour that is disruptive, is understood as exclusively derived from, and residing within, a learner (Taylor & Kearney, 2018). Such interpretations are evident in the explanatory scripts commonly and routinely used in schools which explain unproductive student behaviour as an outcome of perceived

deficiencies in the student and/or their family (Bullough & Richardson, 2015; Johnson & Sullivan, 2016b). However, a rich body of scholarship argues that viewing student behaviour as an isolated and individualised phenomenon offers inadequate resources for understanding behaviour as it obscures from view influences associated with the school, as well as society's broader social, political and economic conditions (Apple, 1984; Baak, 2016; Coulby, 1988; Furlong, 1991; Johnson et al., 1993; Johnson & Sullivan, 2016b; Slee, 1995). Rather, understandings of student behaviour are better served by multidimensional models that cater for the complexities of behaviour and consider influences of a social nature through to those within the individual (Slee, 2014).

Understanding the factors influencing student behaviour is complicated, and requires considering the 'personal, historic, and contextual' elements of classrooms and students' lives, and the influence they have on 'the ways students think about, interact with, and respond to other people at school' (Sullivan et al., 2014a, p. 12). In their comprehensive study of student behaviour in Australian schools, Sullivan et al. (2014a) developed a model of *influences on student behaviour in schools* which identified these influences and demonstrated the complexity of their relationship with student behaviour (Figure 1). The model includes 'the most powerful influences' on student behaviour and sorts them into three connected domains: 'the classroom, the school, and the broader society' (Sullivan et al., 2014a, p. 12).

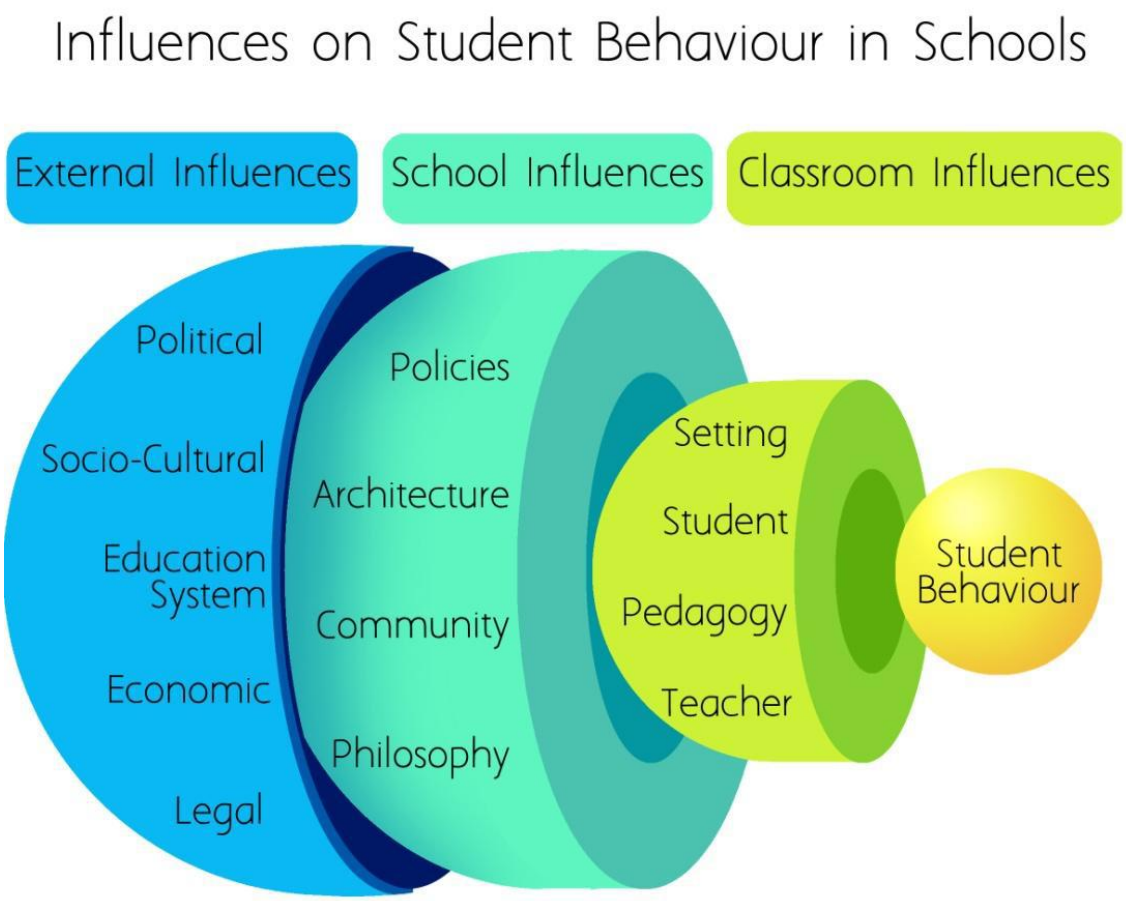


Figure 1 Influences on student behaviour in schools' model (Sullivan et al., 2014a, p. 12)

Classroom influences are those associated with conditions in the classroom, which are described by Sullivan et al. (2014a, p. 12) as 'powerful shapers of student behaviour'. These influences include the physical setting of a classroom, classroom rules, the student, and the knowledge, skills and dispositions of teachers. Such aspects can have a significant influence on the way social interactions occur in the classroom, the types of behaviours they promote, and the type of broader classroom environment they create.

School-level influences are the contextual factors that frame the conditions which arise in a school and have an impact on student behaviour (Sullivan et al., 2014a). These influences include a school's policies, architecture, communities and the philosophies they adopt. Such influences may be evident, for example, in the shared beliefs held about the nature of children and how they should be treated, or the philosophical tenets a school adopts to understand the status of children and how they are expected to behave. Moreover, such

influences can also be used to inform school policies that govern the ways staff engage with students on issues of behaviour, and the school rules they use to regulate them.

Lastly, influences furthest from the classroom and school, and consequently least often implicated in discussions of student behaviour, are societal influences (Sullivan et al., 2014a). These influences include the political, socio-cultural, economic, legal and the education system within which schools operate. However, despite their broader nature, Sullivan et al. (2014a) argue societal influences on student behaviour are becoming increasingly important. These 'meta-influences', as they describe them, are far reaching and derive from sources such as legal and policy imperatives that regulate life in schools, and socioeconomic and educational inequalities that impact student wellbeing and the way students engage with school.

Therefore, it has been established that, while the causes assigned to student behaviour are dominated by individualised and pathologised theories, factors influencing behaviour are diverse and extend well beyond such theories. Likewise, the approaches and strategies teachers and schools employ in response to student behaviour are not homogenous and do not adhere to a set of uniform principles. Rather, a range of different approaches are used to make sense of behaviour and ways it may be responded to, reflecting the different views, philosophies and dispositions teachers and schools hold about how school discipline should be enacted and what form it should take (Ball et al., 2012).

School discipline approaches

The strategies administered by teachers and schools for disciplinary purposes are wide-ranging and at times used for different reasons (Arum et al., 2019; Hester et al., 2021), yet most can be categorised as belonging to one of three broad approaches. Academics have established these three distinct approaches based on the assumptions through which strategies and techniques function as disciplinary devices, including assumptions related to the nature of students and behaviour: interventionists, non-interventionists and interactionists (Millei, 2010; Millei et al., 2010; Slee, 1995; Woolfolk Hoy & Weinstein, 2006). This is not to say however that teachers adhere strictly to one approach and the strategies and techniques belonging to it; rather, for most, the strategies and techniques they use may derive predominately from one approach yet also include some from the other two (Witcher et al., 2008; Woolfolk Hoy & Weinstein, 2006).

Interventionist approaches

Interventionist approaches involve strategies designed to govern student behaviour through intervention. Such approaches are often used to target specific student behaviours and develop self-regulation by way of practices and techniques of training (Millei, 2010). The premise underpinning such practices and techniques is that students learn through experiencing consequences, that is, rewards and sanctions (Woolfolk Hoy & Weinstein, 2006). Among such practices and techniques are the installation of behavioural rules, behaviour monitoring, dispensing praise and rewards, and administering punishments – often in escalating severity such as warnings, in-class time out, out-of-class time out, suspension and so on (Millei, 2010; Raby, 2012; Sullivan et al., 2014b; Woolfolk Hoy & Weinstein, 2006). Subsequently, an interventionist approach can be characterised as one focussed on close student observation, and rapid intervention via teacher responses that seek to suppress unproductive behaviour (Slee, 1995). As Millei (2020) explains 'all these techniques utilise a form of power that is conceptualised as located on the teachers' behalf and to which students have to submit' (Millei, 2010, p. 15).

Slee (1995) traced out the theoretical underpinnings of various interventionist approaches, declaring they owe much to Skinner's model of operant conditioning. Slee explained that in this model Skinner placed analytical emphasis upon the reinforcement and punishment of behaviour in order to condition future behaviour. He explained that, for Skinner, 'indiscipline represents the manifestation of learned behaviour deemed inappropriate for the context', which through operant conditioning can 'be unlearned and replaced by the conditioners' preferred behaviour patterns' (Slee, 1995, p. 86). This unlearning and replacement occur through unproductive behaviours attracting negative consequences, and desired behaviours attracting positive rewards. With this type of approach, 'the environment shaped by the teacher [becomes] the focus' (1995, p. 86).

> This process came to be known as behaviour modification. The focus was upon the shaping of individual behaviour by concentrating upon the types of responses elicited by particular behaviours. For classrooms this meant the identification and observation of inappropriate behaviours of individual students, developing teacher responses that provided a lack of stimulus for such behaviour and the shaping of acceptable alternatives. This was generalized to group dynamics (Kounin 1970), to develop ways in which interaction with one student could cause a ripple effect on the rest of the class. (Slee, 1995, p. 86)

Ultimately, such behaviourist strategies are grounded in principles that promote obedience and compliance as mechanisms for modifying behaviour (Weinstein, 1999) and have been described as 'shallow short-term responses' to the complex aims of discipline in school (Freiberg, 1999b, p. 77). What is more, they operate on a set of assumptions that students require close regulation for them to behave appropriately, students require adults to set explicit and precise behavioural expectations and consequences to behave appropriately, and for behaviour to be repeated it must be positively reinforced (Irby & Clough, 2015; Kohn, 2006).

Non-interventionist approaches

Contrastingly, non-interventionist approaches are described as promoting a student-centred model of classroom discipline (Millei, 2010; Slee, 1995). Grounded in humanistic psychology and psychotherapy (Slee, 1995), these approaches operate under the assumption that students are inherently good and capable (Millei, 2010; Woolfolk Hoy & Weinstein, 2006), thus they often place responsibility for regulating behaviour on the students themselves (Millei, 2010). As such, classroom environments are intended to facilitate student self-control (Millei, 2010) through the teacher playing a role that is 'authoritative rather than authoritarian, facilitator rather than director' (Slee, 1995, p. 88). The teacher acts as a compassionate, empathetic listener (Witcher et al., 2008; Woolfolk Hoy & Weinstein, 2006). Through such approaches, students are handed the responsibility for developing their own 'reasonable' guidelines and classroom rules and encouraged to self-monitor and regulate their feelings and behaviour according to their own needs (Millei, 2010), the needs of others, and the requirements of the curriculum (Woolfolk Hoy & Weinstein, 2006).

A key non-interventionist strategy for ameliorating unproductive behaviour involves the teacher counselling and guiding students on matters of behaviour (Slee, 1995). However, Slee (1995) has warned that counselling procedures promoted through these approaches require careful attention in terms of their structure and the way power is exercised within a facilitating role. He states:

> to argue that one does not impose, or abuse, power because of their care for the client is no guarantee of divestment. Indeed, the language of concern, and the structuring of the issues before the child, may provide clear alternatives that are not essentially child-centered, though expressed as such. (1995, p. 88)

The risk in such counselling procedures is that they are conducted in a manner that serves the interests of adults rather than those of the student (Jones, 2009).

Interactionist approaches

'Interactionalist approaches carry an outwardly democratic style to discipline' (Millei, 2010, p. 15) and emphasise strategies that involve the teacher interacting with students (Woolfolk Hoy & Weinstein, 2006). In general, these strategies require the teacher to perform 'a socialising role' which aims to assist students in building an understanding of 'the nature and importance of classroom tasks and rules' (Woolfolk Hoy & Weinstein, 2006, p. 194). Moreover, school discipline scholars have established that interactionist approaches principally derive from one of two major theoretical foundations: the individualist psychology of neo-Adlerian theory; or William Glasser's control theory (Millei, 2010; Slee, 1995).

In general, interactionist approaches reflect a utilitarian logic, in that the needs of the group are prioritised over that of the individual student and the teacher (Millei, 2010). They also operate on the assumption that students act as rational and autonomous individuals, and that all behaviour has purpose (Millei, 2010; Slee, 1995). The teacher's role in interactionist approaches is framed as that of a leader through which authority is supposedly established via expertise rather than other forms of authority (Millei, 2010). In the pursuit of classroom order, interactionist strategies often involve the development of a small number of 'reasonable' rules which students adopt as their own (Millei, 2010). Strategies also include those that provide students with 'mental tools' that enable them to solve problems rationally, effectively and independently without interfering with the needs of others, and are based on democratic values, such as mutual respect, cooperation, participatory decision making, self-discipline, freedom and responsibility (Millei, 2010). Other strategies include individual and class meetings, applying natural and logical consequences for unproductive behaviour, and teacher-parent-student meetings (Porter, 2020).

These three dominant disciplinary approaches have all emerged from the field of educational psychology and they have significantly shaped and limited the way children and behaviour are thought about and responded to in schools (Slee, 1995). The major limitation they all face lies in the way they omit factors that complicate understandings of what causes behaviour, relying instead on understandings focussed entirely on the dynamics of teacher–pupil exchange (Slee, 1995). Subsequently, these approaches

predominantly situate the cause of behaviour, or 'the problem', within the student and ignore the possibility of it residing in school and classroom contexts (Sullivan et al., 2014a). As a result, teachers are given space to 'exonerate school organisation, curriculum and teaching from the discipline matrix' (Slee, 1995, p. 89). Slee (1995, p. 91) goes on to qualify this critique, explaining:

> this is not to argue that [such approaches] hold no value for teachers and researchers. A caveat of clarification must be inserted here. Clearly, the teacher must be able to allay disruptive incidents and manage the crisis that will inevitably arise to threaten the safe conduct of the classroom … However … by reducing discipline to the status of what we do to the student to generate compliance for organisational harmony drastically limits the potential for intervention, school improvement and successful learning.

Therefore, while the application of such approaches to discipline provides teachers with tools for re-establishing classroom order and student compliance, they are confined to promoting a discourse of concealment (Barthes, 1973) which locates behaviour exclusively within the individual (Maguire et al., 2010).

In summary, I have established that school discipline is a mechanism deployed by schools for the purpose of instituting and maintaining order. Yet, the form it takes, that is, the approaches, strategies, techniques, assumptions and logics of its operation, vary in accordance with the views schools hold about school discipline. Fundamental to formations of school discipline are issues concerning behaviour. How schools conceive of student behaviour, including its classification, judgements regarding acceptability, and its connection, or not, to learning and teaching, influence the ways schools understand and respond to student behaviour. Relatedly, research indicates that individualising and pathologising narratives about the causes of student behaviour dominate views within schools. Such narratives ultimately restrict the way schools respond to behavioural issues. This is because they sit in stark contrast to understandings of behaviour that acknowledge its complexity and the diversity of influences that may contribute to its manifestation. Therefore, in bringing the above literatures together I argue that views about behaviour are imbued with power relations that influence the ways schools and teachers constitute and respond to it through the mechanism of school discipline. Narrow conceptions of behaviour and discipline thus often reduce school discipline to a program of compliance. School discipline should not simply be regarded as a mechanism for establishing and maintaining order. It should also be recognised for the important role it plays in the socialisation of students and for its educative purpose, which would reinstate its

productive possibilities. Such ideas are important to understanding ClassDojo as a school discipline technology as they provide a basis from which to consider the type of school discipline ClassDojo promotes through its platform design, as well as the actual practices teachers perform with it in their classrooms.

ClassDojo as a behaviour management technology

ClassDojo is an education technology that is used widely in schools to help teachers manage student behaviour. It is used across the world by more than 51 million users (Nickie, 2021), and in 95 per cent of K–8 schools in the United States (ClassDojo, n.d.). It can be used through a computer or mobile device and provides teachers with a range of features that make it simple to give students both positive feedback and negative feedback about the behaviours they perform. This feedback is stored by the platform as data about students and can be shared with parents. Furthermore, it provides these features to teachers in a way that makes behaviour management look and feel like a game. Having previously reviewed school-based understandings of behaviour and the strategies teachers use to manage it in the classroom, I now turn to literature which examines how ClassDojo is used as a behaviour management technology. Following a thorough search, thirteen studies were identified which have examined how schools and teachers have used ClassDojo to manage student behaviour. Broadly, these studies have focussed on three different aspects of ClassDojo: 1) how ClassDojo has been used within the classroom to manage student behaviour; 2) its impact on student behaviour; and 3) student and teacher perspectives on the platform and how it is used to manage student behaviour and classrooms.

How ClassDojo is used to manage student behaviour

Research investigating how ClassDojo is used to manage student behaviour is scant. That which was located has focussed on two different areas: the characteristics of the school discipline approach deployed by teachers who use ClassDojo, and the way some teachers use ClassDojo to chart student behaviour. This research suggests ClassDojo is used to apply a reductive form of school discipline, and that when used to chart behaviour it produces large and diverse amounts of data.

To date, only two studies have examined how ClassDojo is used to manage student behaviour. Lu et al. (2021) conducted an investigation aimed at understanding the experiences and practices of teachers who used ClassDojo to manage behaviour. The study

was carried out in the United States with twenty kindergarten to eighth grade teachers. The researchers used semi-structured interviews to collect data. The study produced four main findings. First, ClassDojo represents behaviour in a way that encourages teachers to ignore its root causes. Teachers often used ClassDojo's points system as a tool for shutting down unwanted behaviours yet paid no attention to identifying its root causes. Second, ClassDojo overlooks the human-to-human aspects of student behaviour, and the way teachers respond to it. Through the platform's data-based approach such interactions were devalued and considered unnecessary. Furthermore, students for whom such interactions were important were rendered invisible through ClassDojo's surveillance. Third, ClassDojo reproduced biases through the practices employed with its platform. This included both teachers' biases and institutional biases which manifest, for example, via intentionally targeting and profiling students with ClassDojo on the basis of negative stereotypes. Lastly, ClassDojo is potentially having a negative psychological impact on students. Teachers in the study revealed it was common for students who were regularly targeted with ClassDojo points to get discouraged and develop an 'I don't care attitude'. As a result, students may internalise the feelings created by being treated unfairly and targeted. The authors concluded that the school discipline practices teachers employed with ClassDojo produced a range of unintended consequences for students, that together amplify existing disadvantage and inequality in education.

In contrast, Krach et al.'s (2016) study examined teachers' use of behaviour management charts. The study aimed to understand how different charts are used by teachers to collect and track student behaviour, but also to compare ClassDojo as a technological form with traditional paper-pencil methods such as tally marks, behaviour journals, check marks and discipline logs. The study involved ten kindergarten to fifth grade teachers in one US school. Three teachers used ClassDojo. Data were collected from the behaviour charts teachers used. Data were then analysed to compare the type of data collected by each teacher for each child. The researchers classified behaviours recorded by teachers as either positive, negative or neutral. The study found significant variation between teachers' use of ClassDojo and traditional tools in relation to the volume and type of behavioural data recorded. Teachers who used ClassDojo recorded up to eighteen times more behavioural data than those using traditional methods. In addition, the data collected by those using ClassDojo identified twice as many positive behaviours than negative behaviours and represented some students significantly more than others. While this study did not consider the specific ways in which ClassDojo had been implemented within the

classrooms, it did indicate that, compared to more traditional methods of behaviour management, ClassDojo's technological form supported teachers in collecting a broader, more comprehensive volume and range of data for tracking student behaviour, both positive and negative, over time.

The two studies reviewed in this section investigated how ClassDojo is used to manage student behaviour. The two studies focussed their investigations on different areas and found that ClassDojo is used to implement a reductive and potentially unjust form of behaviour management, as well as one that produces a significant volume and range of data about student behaviour. While Lu et al.'s (2021) study considered some of the detrimental impacts to students from using ClassDojo to manage student behaviour, a larger group of studies have focussed their attention on ClassDojo's impact on student behaviour, although from an instrumental rather than a critical perspective.

ClassDojo's impact on behaviour

The most common focus of studies that have examined ClassDojo as a behaviour management technology has been its impact on student behaviour. Collectively, these studies suggest ClassDojo can be an effective tool for modifying student behaviour. However, I consider each of them individually due to the different contexts within which they were conducted, and the variation with which ClassDojo was implemented.

In a study which examined using ClassDojo's core features to track students and provide them with feedback, Mora (2020) used an experimental case study design to examine ClassDojo's impact on behaviour. The study involved 21 first-year student in a Spanish secondary school. Conducted over a four-week period, the study tracked both negative and positive behaviours through the use of ClassDojo itself as a data collection instrument. Data were thus generated in the form of student feedback data and behaviour reports which were produced and stored within the platform. The study found that, over the course of the study, positive behaviours increased substantially while negative behaviours saw an equal decrease. However, these changes varied between specific behaviours and students. For example, behaviours such as 'standing up without permission', 'using cell phones' and 'sitting down inappropriately' were almost eliminated completely, whereas 'not doing homework' only improved moderately. The authors concluded that ClassDojo offered an effective approach to correcting behavioural problems, overall providing a beneficial means of managing some, but not all, forms of unproductive student behaviour.

In the first of four studies that investigated using ClassDojo to implement a traditional behaviour management strategy, Lipscomb et al. (2018) examined its use with a strategy called Tootling. The study aimed to investigate the impact of ClassDojo on the behaviour of a small sample of students with intellectual disabilities in a postsecondary program at one American university. Specifically, the study sought to identify whether there were differences in the impact on student behaviour when ClassDojo was used either with or without Tootling – a behaviourist intervention that involves students reporting their peers' prosocial behaviours. The researchers trained course instructors in using ClassDojo, and then observed them using it during classes. The study found that using ClassDojo without Tootling reduced problem behaviour the most. However, the differences between the two interventions were small, and both showed decreases in problem behaviour for the class as a whole and for most individuals. The authors concluded that both interventions demonstrated a reduction in problematic student behaviours. This study therefore provides similar findings to the Mora (2020) study regarding ClassDojo decreasing problem behaviour.

In a similar study, Dillon et al. (2019) investigated the effect of using ClassDojo to implement Tootling as a behavioural intervention. The experimental study aimed to investigate the effect Tootling had on both disruptive and academically engaged behaviour when implemented through ClassDojo. Collecting ClassDojo-generated data on the incidence of disruptive and academically engaged behaviour among three rural primary school classes in the United States, the authors found that ClassDojo Tootling decreased problem behaviour and simultaneously increased academically engaged behaviours across all three classes. These findings are in line with those of both Lipscomb et al. (2018) and Mora (2020) in showing ClassDojo can have a positive behaviour impact; however, importantly the findings suggested that the effects of the intervention faded as soon as it was withdrawn. While the authors suggest that ClassDojo Tootling is an effective intervention for improving behaviour in primary school classrooms, this finding does raise questions over the extent to which it can have a lasting or permanent impact on behaviour.

Alternatively, Lynne et al. (2017) investigated teachers using ClassDojo as a digitally enhanced version of the Good Behaviour Game.[2] The aim of this research was to

[2] 'The Good Behavior Game (GBG) … involves dividing a classroom into teams, and informing the class of behavioural expectations … students … either earn points for class rule infractions or earn points for following classroom rules … At the conclusion of an intervention period, all team

investigate the effect using ClassDojo in this way had on students' disruptive and academically engaged behaviour. The experimental study used an ABAB withdrawal design, was conducted in a rural primary school in the United States over a period of approximately four weeks and included 65 student participants from three classes (two fourth grade, and one first grade). Observations were used to generate data for the study. The study found that the ClassDojo intervention decreased disruptive behaviour and increased academically engaged behaviour in students. The findings also revealed that, when the ClassDojo intervention was applied, teachers increased the rate of behaviour-specific praise they gave to students. However, similar to those of Dillon et al. (2019), the findings also indicated that the effects on student behaviour disappeared when the intervention was withdrawn, or teacher supervision was absent. The authors concluded that using the Good Behaviour Game may temporarily improve student behaviour and increase the frequency with which teachers provide praise to students; however, its effect vanishes once teachers stop using it.

In the final study which investigated using ClassDojo to enhance a traditional behaviour management strategy, Saber (2017) examined the effects of using ClassDojo to implement a token economy system on the academic behaviour and performance of undergraduate students. The experimental study was conducted over five weeks in an American university with 147 undergraduate student participants (76 in a control class and 71 in a ClassDojo class). Data were collected with the ClassDojo platform in the form of feedback points and behaviour reports, a student survey and students' course assessments records. The study reported two main findings. The first was that the ClassDojo token economy system significantly increased students' academic behaviours, consistent with the other studies reviewed above. Second, the study found that the ClassDojo token economy also significantly increased students' academic performance, with students' self-reported effort, interest and enjoyment all increasing when ClassDojo was used. The author concludes that using a ClassDojo token economy system has the potential to improve targeted student behaviours while also directly enhancing academic performance, therefore offering undergraduate educators a useful classroom management technique.

Lastly, da Rocha Seixas et al. (2015) investigated the effectiveness of two different education technologies – ClassDojo and ClassBadges – in enhancing student engagement.

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members of teams that have earned infractions below a predetermined level or points above a predetermined level receive a reward' (Lynne et al., 2017, p. 1051).

ClassBadges is a technological tool that enables teachers to award students digital badges[3] when they accomplish specific goals. Using a mixed-methods approach, the researchers gathered data through observations, semi-structured interviews, and a survey of 61 eighth grade students (13–14 years old) and their teacher within one Brazilian primary school. The study found that both education technologies had positive effects on student engagement. ClassDojo was linked to increases in student autonomy, participation, collaboration, teamwork, questioning, social interaction, organisation of the environment, care and fun. However, student engagement was directly associated with the number of rewards given to students through the platforms, with those given more rewards demonstrating higher levels of engagement. Different to Mora's (2020) examination of ClassDojo's gamified approach for correcting behaviour, the authors of this study concluded that platforms like ClassDojo that incorporate gamification can act as powerful mechanisms for student engagement. However, they argue it is important that when platforms are used in this way their implementation is aligned with educational purposes.

The studies reviewed within this section have all examined the impact ClassDojo has on student behaviour, including when it is used generally to manage behaviour and in more specific ways such as to enact strategies like the Good Behaviour Game. These studies found that ClassDojo can increase students' productive behaviours and decrease students' unproductive behaviours; however, the effects are temporary, varied and depend on how it is implemented. A smaller group of studies has also examined ClassDojo's application as a behaviour management technology but focussed instead on investigating how key stakeholders perceive the platform and the way it is used to manage behaviour and classrooms.

Perspectives on ClassDojo and its use for managing student behaviour

These studies investigated the perspectives of students, parents and principals to develop understandings about the different groups that use ClassDojo and the experiences they have when using the platform to manage student behaviour. This includes perspectives on ClassDojo's different features and ways they are used. Together, they suggest that perceptions of ClassDojo and the ways it is used are predominantly positive. Similar to the

[3] The Alliance for Excellent Education and Mozilla Foundation define digital badges as 'credentials that represent skills, interests, and achievements earned by an individual through specific projects, programs, courses, or other activities' (2013, p. 2).

previous section, I consider the studies independently due to the variation in research contexts and stakeholder perspectives included within each study.

Benhadj et al. (2019) investigated students' perceptions of ClassDojo as a platform for managing their behaviour. The study was conducted over six months and involved 41 sixteen- and seventeen-year-old student participants from one Moroccan high school class. Students were interviewed in structured focus groups about their perceptions of ClassDojo. The study found that most students thought ClassDojo, and its gamified elements, were fun, engaging and motivating. Students particularly enjoyed ClassDojo's avatars and earning positive feedback points. Most students also thought ClassDojo was a useful behaviour management tool that increased their participation in class and had a positive influence on their behaviour. Students explained that they were influenced by ClassDojo's feedback points and audio cues, and the fun competitive environment ClassDojo created which they felt encouraged them to earn more points. Some students additionally reported that ClassDojo motivated them to monitor their own behaviour closely. Thus, the researchers concluded that teachers should seek to use education technologies like ClassDojo to gamify teacher-learning processes within their classrooms because they have a positive impact on student behaviour and learning.

Kaplan et al. (2021) conducted a study on ClassDojo which examined both the impact ClassDojo had on students' attitudes toward English courses, as well as students' and parents' perspectives on ClassDojo's effect on student behaviour. The researchers collected data from thirty students and nineteen parents in one Turkish primary school over eight weeks. A Likert attitude scale was used to measure and collect data on students' attitudes toward English courses before and after using ClassDojo. Surveys were used to collect data on students' and parents' perspectives. The study found that after using ClassDojo students had a significantly worse attitude toward their English course. In addition, it found that both students and parents held largely positive views about ClassDojo and the effects it has on student behaviour. Similar to Benhadj et al.'s (2019) study, students viewed ClassDojo as fun and motivating, revealing that they liked ClassDojo's avatars, receiving points for performing behaviours, and tracking themselves. Students in this study revealed that they liked parents seeing their behaviour points; however, some were concerned about being tracked by parents or teachers through the platform, and several suggested that they had found it to be boring or upsetting when they did not receive points or were given negative points. Parents on the other hand overwhelmingly viewed ClassDojo positively and believed it improved the behaviour and responsibility of their children. The

authors of this study concluded that, despite the negative impact ClassDojo had on students' attitudes to their English courses, the primarily positive perceptions of the platform suggest it provides a way to produce positive behaviours in the classroom and students' homes. Similar to the previous study, the researchers highlighted that its gamified approach was important to providing such benefits.

A study by Cetin and Cetin (2018) examined middle school students' perspectives on ClassDojo when it was used to manage their behaviour in a mathematics course. The researchers surveyed 206 middle school students from one Turkish school about their experiences with ClassDojo. Students were asked what effect they thought ClassDojo had on their behaviour, motivation and self-confidence. They were also asked how they felt about their behaviour being assessed instantly, their parents tracking their behaviour, and the competitive environment created through ClassDojo. The study's findings, like those in the studies reviewed above, showed that students generally held positive views about ClassDojo, including the ways it was used, and the effect it had on their behaviour. However, it also added that students in the lower grades (five to seven) expressed more favourable views than those in eighth grade. While most students responded favourably to each survey question, there were several questions that attracted a considerable portion of unfavourable responses, including more than 45 per cent declaring ClassDojo did not raise their self-confidence, more than a third indicating ClassDojo did not increase their motivation and that the competition created by ClassDojo bothered them, and 22 per cent revealing they did not like their parents monitoring their behaviour. The latter two findings contrasted with findings from Benhadj et al.'s (2019) study, which found students thought ClassDojo increased their motivation, and they enjoyed the competition it created. Cetin and Cetin concluded that ClassDojo provides teachers with a behaviour management technology that may have a positive impact on student motivation and subsequently increase student effort.

DiGiacomo et al. (2022) examined the perceptions of students and principals on the use of ClassDojo as a behaviour management and communication technology. The study aimed to investigate how students and principals interact with and understand ClassDojo's features and data. In particular, the study examined if and how ClassDojo mediated student–teacher and student–parent relationships. The researchers employed a mixed-methods study design and used surveys to collect data. The study was conducted in a small south-eastern state within the United States and included 124 undergraduate students and 30 principals as participants. Students provided retrospective perspectives on their

experiences with ClassDojo while principals provided current perspectives. The study found that students' views about ClassDojo, while containing high variability, were predominantly positive or neutral. A substantial portion of students indicated that they felt ClassDojo increased their motivation, and had a positive effect on their behaviour, wellbeing and grades. Students' responses to whether ClassDojo influenced their relationships with their parents varied. However, of the two thirds that indicated some form of impact, 22 per cent referred to increased parental monitoring or awareness. The study also found that principals held predominantly positive views about ClassDojo. The authors concluded that students and principals largely understand ClassDojo in instrumental terms, as a new, digital technology employed to facilitate behaviour management and communication. Therefore, this study contributes to research showing that students hold primarily positive views about ClassDojo, and that they believe it increases their motivation and has a positive effect on their behaviour. Yet it also adds to the notion that some students are concerned by the monitoring they are subject to through the platform.

In summary, this section has reviewed research which examined ClassDojo as a behaviour management technology. It began by examining research focussed on how ClassDojo has been used in classrooms to manage student behaviour. Research focussed on how ClassDojo is used in classrooms is confined to two studies, which found that ClassDojo promotes a reductive form of behaviour management that reproduces teacher's biases. They also found that teachers who use ClassDojo to collect and track student behaviour produce a significantly greater volume and range of data about student behaviour than teachers who use traditional paper-pencil behaviour charts. Therefore, missing from this research on how ClassDojo is used as a behaviour management technology in classrooms is knowledge about the practices teachers perform with and through ClassDojo, and how ClassDojo's platform may be shaping those practices.

This section then reviewed research which investigated the impact ClassDojo has on behaviour. While the specific behaviours each study focussed on varied, they all divided behaviour into two categories: negative or disruptive behaviours, and positive or academically engaged behaviours. Most studies found that ClassDojo either reduces negative and disruptive behaviours, or increases positive and academically engaged behaviours, or does both. However, some research has shown that the effect ClassDojo has on behaviour is temporary as it disappears when the platform is no longer used, and that it varies between students and specific behaviours.

Lastly, this section reviewed research which examined perspectives on ClassDojo and its use, including from students, parents and principals. This research largely reported that students hold positive views about ClassDojo, with many describing it as fun and enjoyable. Most students like ClassDojo's game-like features, particularly its avatars and receiving points for performing certain behaviours, and many think the platform has a positive effect on their behaviour. However, students' perspectives on being tracked through ClassDojo, the competition it creates between students, and the effect it has on motivation were mixed. Some students enjoyed being tracked and tracking themselves through ClassDojo, while others were concerned by the tracking they were subject to. Likewise, some students like the competition ClassDojo created in the classroom, while others said it bothered them. While research on parents' and principals' perspectives is limited, it indicates that both hold positive views about ClassDojo and the effect it has on student behaviour.

ClassDojo as an education technology

Whilst most research has focussed on ClassDojo's application as a behaviour management technology, there is a small body of emerging research which has examined it more broadly as an education technology. This research does take ClassDojo's behavioural aspects into account, although its attention is concentrated on issues associated with the application of technologies in education generally. Thus, it provides insight into how ClassDojo's approach to school discipline emerged, the factors that have influenced the form of discipline and the views of behaviour it promotes, and the impacts it has on education across many areas, including education systems, policies and practices.

Three studies have investigated ClassDojo as an educational platform from a perspective which examines its connections to wider societal arrangements and organisations (Selwyn, 2014). Their focus was on investigating the range of forces that have influenced the constitution of ClassDojo as an education platform, and the educational implications that stem from this. This includes the examination of key influences which have informed the way ClassDojo has been produced and the type of education it promotes, including key actors, knowledges, relations and governance structures.

Williamson (2017b) investigated ClassDojo by decoding the knowledges and logics embedded within the platform, the practices it promotes, and the connection it has with government policy. The study focussed on the way ClassDojo enables and promotes the psychological surveillance of students through techniques of gamification and psychology,

and new psychological concepts, such as character development and growth mindset. The study employed a network analysis methodology through which Williamson traced the 'organizational, technical, governmental and scientific relations … encoded' in ClassDojo (2017b, p. 440). The study's main finding was that ClassDojo is a key technology of fast policy aligned to governmental strategies concerning social-emotional learning. Williamson argues that ClassDojo is a technology advancing new, yet contested, psychological and neuroscientific concepts which are encoded as norms within its platform architecture. Thus, when combined with the gamification and psychological techniques embedded within the platform's design, he contends, the platform functions to deconstruct and transform student behaviour into measurements by which children may be surveilled, evaluated and made amenable to behavioural modification. Williamson concludes that ClassDojo has emerged as a 'fast-policy model for government at a distance' through which the psychological 'measurement and management of students' are reinforced through ClassDojo via mechanisms such as, behavioural nudging.

Williamson's (2017c) second study on ClassDojo investigated the platform as a data assemblage. The study aimed to disassemble ClassDojo's platform in a way that reveals the complex socio-technical system through which it has been constituted to understand its influence on contemporary education. Williamson described this study as a socio-technical survey, explaining that it involved examining ClassDojo's

> technical and material components, the people that inhabit it and practices they undertake within organizations and institutions, the marketplaces and financial techniques that enable it, the policies and standards that govern it, and the knowledges and discourses that frame it. (2017c, p. 64)

Williamson argues that disassembling ClassDojo has made it 'possible to see how ClassDojo is part of a re-engineering of public education' (2017c, p. 76). His primary findings reveal how ClassDojo (and other platforms) a) has reached into education systems globally through interests emanating from Silicon Valley, b) is delivering a politically sanctioned psychologised behaviour change agenda into schools, and c) has introduced a data-based behavioural economy into schools and classrooms within which teachers and students are positioned as key actors. Williamson concludes that ClassDojo exemplifies how education is being reshaped through platform technologies and the 'business model and political economy of platform capitalism' (2017c, p. 78).

Robinson (2021) undertook a predominantly theoretical examination of ClassDojo to understand how different forms of power are produced through the platform. The study focussed on examining the technologically driven processes of ClassDojo implicated in the production of such forms of power. Theoretically, Robinson drew on governmentality, disciplinary power and modulatory power to make sense of ClassDojo. Robinson argues that ClassDojo operates as a mechanism of both disciplinary power and modulatory power. Drawing on Deleuze, Robinson defines modulatory power as power that manifests via constituting users as code. He explains that this process is typically hidden from users and occurs when they interact with the platform. He goes on to explain that ClassDojo absorbs this code flow, processes it algorithmically, and redirects it back to users via modifications made to the platform by the company's software engineers which govern users' behaviour. Robinson argues that the disciplinary power exercised through ClassDojo is thus augmented by modulatory power. He concludes that platforms like ClassDojo function beyond school settings as governing technologies that compel users, such as students and parents, to participate in ways that produce particular kinds of subjectivities.

In summary, this section has reviewed research which has examined ClassDojo as an education platform. Such research has aimed to understand ClassDojo in relation to the network of relationships associated with ClassDojo's formation which shape the type of education ClassDojo promotes and facilitates, and the implications stemming from its use. This preliminary research suggests ClassDojo provides a form of education that is amenable to governmental strategies that promote psychologised notions of behaviour, gamification and data-based techniques of surveillance. Furthermore, it suggests that power is exercised through ClassDojo not only via the application of its features and functions but also more opaquely through company processes that actively shape user interactions on the platform.

Given this emergence of research investigating ClassDojo in relation to issues associated with the broader use of technologies in education, a review of the education technology literature is necessary. Understanding how ClassDojo is used by teachers is important; however, a deeper understanding of ClassDojo related to the ways it influences behaviour and discipline in education, and the ways education systems respond to its introduction into schools, is arguably of even greater importance. The form of school discipline ClassDojo promotes and facilitates bears close resemblance to traditional behaviour management approaches; however, the technological affordances associated with its

implementation through a digital platform enables its potential to reshape the way school discipline is understood and practised. How might such affordances impact the way knowledge is produced and disseminated, the way networks of communication operate, or the way pedagogical interactions occur through ClassDojo? Reviewing the education technology literature will provide important knowledge about education technologies, and their use, influence and impact on education, which will help us to understand ClassDojo and the impact it will potentially have when it is used as a school discipline technology.

Education technology

The proliferation of education technology and establishing a definition

In recent decades education has been increasingly shaped by 'digital technologies and the things that people do with them' (Selwyn, 2017, p. vi). Digital education technologies are so firmly embedded within the fabric of modern educational contexts that they are viewed as an integral yet unremarkable component of the conditions and arrangements within them (Selwyn, 2014, 2017; Selwyn & Facer, 2014). This includes, but is not limited to, domains of education such as teaching, learning, assessment, administration, professional development, communication and infrastructure (Office of Educational Technology, 2017). Education has been shaped within and across these domains through the application of digital education technologies in several ways. These include a) enabling people, objects, organisations and information to be increasingly connected via digital networks, b) enabling new interactive forms of exchange, c) supporting forms of mass socialisation often involving the sharing of user-generated content, and d) increasing the generation and processing of data (Selwyn, 2017).

For many within education, it is taken for granted that the infusion of digital technologies into education and the resultant changes are a good thing (Selwyn, 2018b). Yet some go further than this and see technology as the solution to education's problems (Buchanan, 2020; Teräs et al., 2020; Watters, 2013). Selwyn (2018b, p. 3) connects this sentiment to a deeply held belief among educators that education technologies 'will transform and revolutionise' education, which he argues has created a 'technological orthodoxy' in education. Yet despite such optimistic views, and proliferating technological integration into education, 'many of the problems that have long blighted education systems stubbornly persist', including 'deficiencies in resourcing, significant inequalities of

educational opportunity, alongside poor-quality teaching, curriculum and school organisation' (Selwyn et al., 2020, p. 1).

Education technology is a broad and complex concept and there is continuing debate as to its scope and definition (An & Oliver, 2021). Notwithstanding such complexity, research has frequently adopted narrow conceptions of education technology that have confined it to technological artefacts and devices (An & Oliver, 2021; Latchem, 2014). However, more recently, others such as Selwyn (2014) and Williamson (2021) have provided more expansive conceptions that move beyond the tools and software of education technology to give the concept greater scope. Selwyn (2014, p. 6) notes:

> educational technology is deceptively neat shorthand for a diverse array of socio-technical devices, activities and practices [applied] in the name of education … a commercial field of technology development, production and marketing … [and] a thriving field of academic study and scholarship.

While such a conception makes no distinction between pre-digital and digital artefacts and devices, for the purpose of this study, I confine it to digital technologies, which in a technical sense can be understood as 'computer-based systems … that can be used to produce, manipulate, store, communicate, and disseminate data' (Selwyn, 2017, p. 14).

Despite education technology's entangled relationship with the politically infused field of education, many view the technologies that emerge from its sector as neutral, value free and ideology-free applications (Postman, 1997; Selwyn, 2014; Teräs et al., 2020; Watters, 2016). Such ideas are not confined to those with a commercial interest in the proliferation of education technologies, but rather exist across the education community more broadly (Selwyn, 2014). However, Selwyn (2017) argues such views make little sense, as 'education technology is intrinsically linked with the social, cultural, economic and political aspects of society' (p. 18). Education technologies are not produced within a vacuum: everything from the forms they take, to the knowledges they draw on, and the practices made possible and implemented through them, are shaped by the social interests of a range of actors, including designers and engineers, investors and marketers, technology users and the educational institutions they work within (McMillan Cottom, 2019; Regan & Khwaja, 2019; Selwyn, 2014; Watters, 2014; Williamson, 2019b). Furthermore, the struggle between such interests to embed their preferred values or ideological views within education technologies has significant implications that see 'some people benefit more from than others – most notably in terms of power and profit' (Selwyn, 2014, p. 2).

Conceptualising the digital education platform

Digital education platforms are a prominent type of education technology to which ClassDojo belongs. In recent years, such platforms have become increasingly prevalent across education settings (Decuypere et al., 2021). Platforms produced by brands such as Moodle, Blackboard, Google and Pearson are frequently used by schools and universities to carry out educational activities (Sefton-Green, 2021). However, the range of platforms used for educational purposes extends well beyond those listed here. Furthermore, the form, purpose and function of digital education platforms vary significantly, resulting in them being employed in a diversity of ways, to carry out a diversity of activities, and produce a diversity of digital environments (Decuypere et al., 2021), including as pedagogic devices (Sefton-Green, 2021). However, platforms are often inadequately conceptualised in a manner that disassociates them from workings of power, which consequently hides from view a swathe of factors instrumental to their functioning (Decuypere et al., 2021; Hartong, 2021).

Jose van Dijck's work on social media platforms has provided a cornerstone for research on digital education platforms by helping to develop understandings of what they are, how they work, and what their educational impacts might be (see e.g. van Dijck, 2013; van Dijck & Poell, 2018). While her writing has focussed largely on social media platforms, education scholars have used and adapted her work to investigate and understand digital education platforms specifically (see e.g. Decuypere et al., 2021; Pangrazio, 2019; Williamson, 2017c). Van Dijck and Poell (2018) define online platforms as programmable digital architectures geared toward the systemic collection, algorithmic processing, circulation, and monetisation of user data. Decuypere et al. (2021) further developed this definition to provide a comprehensive conceptualisation of digital platforms that relate to education. In doing so, they conceptualise digital platforms through four defining features: digital architectures, intermediaries, a new type of organisation and investments in forms.

Digital architectures

Decuypere et al. (2021) state that digital platforms are digital architectures. They explain that digital platforms can be understood as architectures due to the way they function as constellations of both time and space through which user activities occur, and transactional data are produced and move through. Such activity largely occurs via graphical user interfaces (GUIs), which are the components of platforms that display information to, and communicate with, users through text and visuals. GUIs are typically

created to be 'highly aestheticized, carefully crafted and visually attractive' to keep users in the platform (Decuypere et al., 2021, p. 4). Moreover, such visualisations are often infused with normative representations of judgement or evaluation that convey messages about what is good or bad education, learning or performing. In this way GUIs display a particular version of reality which explains the world in particular ways and seek to convince the user that such visualisations are depicting the world as it really is.

Intermediaries

Decuypere et al. (2021) attest that digital platforms equally must be understood as intermediaries. That is, they are technologies that bring individuals, or entities, with something to offer together with others who make use of the platform. In this way, digital platforms perform the role of streamlining activities of exchange. Importantly here, digital platforms do not merely act as hosts for the content, activity and interactions that take place; rather, they regulate such activities by determining the 'specific sorts of content, activities and interactions [that] are possible and permissible (and which [are] not)' (Decuypere et al., 2021, p. 5). A key mechanism for such regulation is the platform interface, through which decisions about what is made (in)visible have a direct impact on what users see and can do. Thus, as digital intermediaries, platforms play a fundamental role in constructing what counts as worthwhile and valuable in education, with implications for specific forms of governance. Ultimately, through such features, platforms create particular visions and possibilities of what education is and should be.

A new type of organisation

Decuypere et al.'s (2021, p. 6) third defining feature of digital platforms is that they operate as a new type of organisation, generating 'a new means of value production' through their use. This production of value is directly associated with the way digital platforms trace, collect and measure user activity as data, in addition to the way such activities and modes of exchange are constructed as capital. In this way, all user activity that takes place on platforms becomes observable and measurable behaviour. While some digital education platforms are involved in more traditional modes of capitalisation that generate education content, many are not. This means that digital education platforms can function as an organisation without such involvement, and rather produce capital from the processes of data exchange they facilitate.

Investments in forms

Lastly, Decuypere et al. (2021) argue that the three other defining features operate collectively to provide digital platforms with an additional overarching feature they call 'investment in forms'. The term investment is used here beyond its common economic meaning. The term is understood rather as 'investment in dedicated ways in which the world is made dividable, intelligible, knowledgeable and actionable' (Decuypere et al., 2021, p. 7). Digital education platforms perform the very same tasks through the 'concepts, classifications, categorisations, commensurations, and evaluations' embedded within their designs and promoted through their use (Decuypere et al., 2021, p. 7). In this way platforms operate to direct thought and action. Moreover, it is across the architectural, intermediary, and organisational designs of digital platforms that 'specific norms, values, ideologies, instructional models, ideas about learning, and … pedagogy [are] inscribed' (Decuypere et al., 2021, p. 7). Therefore, digital platforms can be understood as both shaping users' decisions and thoughts, and making 'specific forms of education visible, knowable, thinkable, and ultimately, actionable, in ways that reformat, redo, restructure, and reconceive what education is or could be about' (Decuypere et al., 2021, p. 7).

Conceptualising digital platforms in this way moves understandings beyond instrumental notions of platforms as tools, and acknowledges how they assemble education in ways that produce novel educational forms by joining 'artefacts, actors, epistemologies, techniques and values' (Decuypere et al., 2021, p. 2). Moreover, an important aspect of this conceptualisation is that digital education platforms should not be understood as operating through a set of universal characteristics which produce a generic method of education. Rather, digital platforms can, and often do, differ in the particular logics they promote (Decuypere, 2019; Decuypere et al., 2021; Hartong, 2021), enacting through their particular forms 'their own specific logics, rationales, mechanisms, and ways of operating' (Decuypere et al., 2021, p. 2). While understanding digital platforms in such ways draws attention to the complexity of how they operate and shape education, it is important to resist common discourses that construct them uncritically as categorically innovative and new (Selwyn, 2014).

Innovation in education technology: The remnants of old ideas

Many discussions about education technologies are grounded in a belief that they bring with them distinctively innovative and improved modes of education compared to the modes that preceded them (Selwyn, 2014). This idea, Watters (2014) argues, is often heard

from technologists, who at times are rather 'quick to conflate the adoption of new tools with the adoption of new ideas and practices'. She believes this misconception is entangled with the notion of 'innovation' promoted by the ed-tech sector at large, resulting in an environment in which technology is considered innovative even when used to do 'the same old stuff' (2014, 2021). Such conditions, however, importantly reveal that what we see in education technologies now, and will in the future, has been shaped by their history (Watters, 2014).

Considering education technologies from this historical perspective is thus important for understanding their potential influence on education. Selwyn (2014, p. 18) similarly reminds researchers to remain mindful of the continuities, borrowings, recurrences, refashioning and repetitions present within most 'new' technologies in education, which he describes as akin to putting 'old wine in new bottles'. This conservation of the old, Watters (2014) argues, is particularly evident in education because technologies are often designed with traditional purposes in mind, and to enact traditional practices. Thus, while such technologies provide new tools that perform tasks in quicker, more efficient or more convenient ways, the old purposes and practices embedded in their designs endure (Cuban, 2018; Selwyn, 2014; Watters, 2014). Some education technologies have even been described as 'Trojan horses' for delivering and maintaining particular versions of education into schools and classrooms (Ferster, 2014). Watters (2014) describes this as a 'tension between new tools and old practices', explaining that 'It's simple to introduce iPads into the classroom … [yet] It's much more difficult to use them to do entirely new things, particularly things that run counter to how classrooms have operated in the past'. On this point she attests that changing behaviours, views about pedagogy and learning, and culture within educational institutions is difficult; therefore, despite the rhetoric around technologies changing teaching and learning, it is more likely they will 're-inscribe the traditional functions and practices of education' (2014).

In some ways, contributing to the obfuscation described above is the application in many education technology designs of gamification, which has been described as a form of innovation in itself (AlSaad & Durugbo, 2021). However, gamification derives, although not exclusively, from much older ideas and concepts associated with games (Fuchs et al., 2014) and, similarly, is frequently incorporated with educational ideas and concepts both old and new (Landers, 2014).

In summary, in this section I have outlined the extensive penetration of education technology into contemporary education and associated it with a widespread positive attitude toward its inclusion, a phenomenon Selwyn (2018b, p. 3) has described as a 'technological orthodoxy'. I have focussed on discussing the education technology literature focussed on digital education platforms and the notion of innovation in education technology. I examined a conceptualisation of digital education platforms which considered effects of power and defined them through four defining features - digital architectures, intermediaries, a new type of organisation and investments in forms – which influence the particular operation of platforms. The notion of education technology as innovative was then reviewed, which revealed that the term often acts as a veneer which obscures the presence of traditional educational ideas within education technologies. Moreover, across this section I have argued that education technologies in general and their associated features and operations are not value-free, neutral, or sure to serve students' interests. Rather, they are produced through, infused with and induce effects of power, through which particular values, ideologies, interests and logics are promoted and enacted. Such ideas are critical to the aim of this thesis of understanding how ClassDojo as an education technology may be shaping education in a manner that associates it with workings of power. In particular, these ideas will help to bring into view the assortment of factors and processes through which ClassDojo's features and functions operate to provide a clearer understanding of their foundations and effects.

Gamification in education technology

Gamification is a new term that has garnered increasing interest of late due to its rapid rise in popularity and application in digital technologies (Rabah et al., 2018). Its regular use as a concept in academic literature dates back to 2010 (Deterding et al., 2011; Fuchs et al., 2014); however, the oldest recorded use of the term appears to have occurred in 2003 and is attributed to 'Nick Pelling, a game designer, who claimed to be specialising in gamification' (Fuchs et al., 2014, p. 8). Some contestation exists around how the term is defined, although one of the earliest academic attempts proposed by Deterding et al. (2011) continues to be widely adopted. Deterding et al. (2011, p. 2) define gamification as 'the use of game design elements in non-game contexts'. This definition has been broadened by some, adding that gamification includes the use of feedback mechanisms and users' social profiles (Whitson, 2013) as a way of strategically regulating behaviour (Schrape, 2014), which is applied purposefully (Devers & Gurung, 2015), and augmenting pre-existing

processes with game elements in order to facilitate learning and related educational outcomes (Landers, 2014). Another proposed definition has alternatively suggested understanding the term as either a design element, process technique or a service package (Ofosu-Ampong, 2020). Fuchs et al. (2014, pp. 7–8) argue the concept can also be understood as a much broader phenomenon when considered from an anthropological perspective, that is, 'as a general process in which games and playful experiences are understood as essential components of society and culture'. Notwithstanding the nuanced variation across the above definitions, Deterding et al.'s (2011, p. 2) definition of gamification as 'the use of game design elements in non-game contexts' is sufficient for use in this thesis.

An early impetus for the implementation of gamification via digital technologies was the rising popularity of video games. Video games, which are used largely for the purpose of entertainment, were seen as a resource from which ideas, and the benefits associated with them, could be taken and utilised in non-game technologies (Deterding et al., 2011). In particular, value was associated with the way video games produced 'states of desirable experience [in users] and motivated … [them] to remain engaged in an activity with unparalleled intensity and duration' (Deterding et al., 2011, p. 2). Thus, game design was identified as a transferrable field of knowledge which could be applied in non-game products, services or applications (Deterding et al., 2011) to make them more enjoyable, motivating and engaging with the purpose of changing people's behaviour (Deterding et al., 2011; Fuchs et al., 2014; Manzano-Leon et al., 2021). The game design elements, devices and mechanics that have been commonly adopted for such purposes include points, leaderboards, badges, levels, ranks, achievements and progress bars (Dicheva et al., 2015; Dragona, 2014; Nicholson, 2015; Schrape, 2014; Whitson, 2013). Notwithstanding this list, a cornerstone of digital game design, and two of the most frequently used characteristics in gamification, are points and scores (Raczkowski, 2014).

The role of points

Points and scores perform an important role within gamification technologies that shape user experiences in particular ways. Zichermann and Linder (2010, p. 68) argue that gamification specifically relies on 'making points the point'. Points, therefore, are central to gamification and the suite of functions made possible through its application (Raczkowski, 2014). Raczkowski's (2014, p. 145) research examining the role of points in the history of gamification reveals that 'In gamification … points and scores fulfil two main

goals: they measure and they reward' users. Furthermore, drawing on Dignan (2011), Raczkowski (2014) contends that points carry with them a magical effect; users view them as a reward even when they are worthless, a perception he says is driven by the validation users receive when they acquire points. He explains that, in this way, points act as an abstract representation of value, often in the form of a score, without the need to issue rewards while simultaneously encouraging competition among users through leaderboards. He describes gamification more broadly as a performative 'scoring economy that expands the classical behaviouristic model of token economies through a new focus on competition and self-measurement' (2014, p. 157).

Points have also been identified as a gamification mechanism through which users and their activities can be tracked. Whitson (2013) notes that using points as a monitoring device is linked to the prominence of quantification processes within gamification design. While tracking through the quantification of behaviour has a long history, Whitson (2013) points out that gamification combines it with play. She explains that quantification enables users' activities to be monitored and measured in a way that is promoted as play, while at the same time producing a seemingly more objective and reliable record of events than that provided by human memory. Thus, points occupy a role in gamified technologies as a mechanism not only of measurement or reward, but also surveillance through which user behaviour can be monitoring and tracked.

The presence and impact of gamification in education

Much like its application in broader society, the use of gamification in education is becoming increasingly popular (Landers, 2014). While its use within education covers a range of contexts, its presence within universities is widespread (Manzano-Leon et al., 2021), and its application in K–12 environments has seen a marked increase in recent years (Devers & Gurung, 2015). Its application in most cases is purposed with improving students' learning-related behaviour, and consequently student learning (Landers, 2014). In particular, its techniques are designed to make learning enjoyable and are often aimed at increasing engagement and motivation in ways that promote learning (Dicheva et al., 2015; Manzano-Leon et al., 2021; Ofosu-Ampong, 2020). Ultimately, it introduces a sense of play into learning as a means of making it more appealing and relevant than it otherwise would be (Selwyn, 2014). However, it is important to note here that gamification does not provide instructional content or cause learning to occur on its own; rather it provides a means of augmenting existing instruction to improve the potential learning that derives

from it (Landers, 2014). The most studied aspect of gamification in education related to student learning is motivation, with others including academic achievement, engagement, participation and fun (Manzano-Leon et al., 2021). Moreover, the game design elements, devices and mechanics commonly employed through its application include points, badges, leaderboards, rankings, avatars, virtual currency and progress bars (Dicheva et al., 2015; Manzano-Leon et al., 2021; Ofosu-Ampong, 2020). Their application typically occurs in the following ways:

> Point systems manage the acquisition and spending of points that quantify user performance. Badges are given for special achievements. Based on … received points and badges, users are ranked on leaderboards that reflect their performance in comparison to other users … Progress bars provide a percentage-based graphical representation of the players' progress. Virtual currency is used for purchasing in-game (virtual) goods. (Dicheva et al., 2015, p. 78)

With this increasing use of gamification in education, there has also come an increased interest in studying what the implications of its use might be for student learning, and education more broadly.

Several reviews of research on gamification in education propose that, overall, gamification applications have a positive impact on a range of student learning–related measures (Dicheva et al., 2015; Manzano-Leon et al., 2021; Ofosu-Ampong, 2020). Manzano-Leon et al.'s (2021) systematic review of studies of gamification in education examined the impact of gamification on students' motivation and academic performance. Their review reported that most studies support the use of gamification as a learning strategy and show that its use produces benefits to students' academic achievement, engagement and motivation. However, they noted that, when gamification is confined to mechanisms that function through extrinsic motivation, including points, badges and leaderboards, students' learning and motivation may be negatively impacted. Dicheva et al. (2015) also conducted a systematic review of gamification in education which similarly focussed on empirical studies that examined the effects of gamification in educational contexts. The review indicated that a majority of studies have produced encouraging results regarding the use of gamification, including showing that it produces significantly increased levels of student engagement, improved attendance rates, increased participation and increased student contributions, and that it is effective at shaping student behaviour. A review by Ofusu-Ampong (2020) examined the dominant issues in the gamification of education literature, including the impact of gamification on students'

education. The review reported that, while the results have been mixed, the majority of studies show gamification increases students' motivation. It also reported that improvements to student participation and attendance have been seen, but only when 'effective game mechanics such as virtual goods, penalties, and awards systems' are used (Ofosu-Ampong, 2020, p. 120). Therefore, research indicates that the use of gamification in education is associated with benefits and negative impacts for student learning, and how gamification is delivered is an important factor in which outcomes are produced.

Therefore, while the above reviews of gamification in education posit a predominantly positive view of gamification and the influence it can have on students' learning and education, much of the research reviewed generally conceived of gamification instrumentally. Such research has primarily focussed on examining how 'effective' gamification is at attaining specific educational benefits. In contrast, critically oriented research on gamification in education presents a contrasting view of what gamification brings to education by asking different questions about its presence and application which attend to, for example, issues of power, its effect on social relations, and the values and logics underpinning its functioning.

Critical perspectives on gamification in education

Gamification is not a neutral tool devoid of external influence; rather, it is a technology infused with particular values and knowledges that promotes particular ways of viewing and acting on the world, including within the field of education. For this reason, it is important to ask questions of the role of gamification in education, such as for what purposes is it being used, whose interests are being served through its use, and what assumptions underpin the educational approach it promotes (Woodcock & Johnson, 2018). Thus, considering how gamification operates through digital technologies generally, it is evident that it has a focus on outcomes and behaviour (Schrape, 2014, p. 34). Moreover, it is recognised that the processes that accompany this focus are often reduced to simple stimulus-response mechanisms purposed with regulating and normalising behaviour, both of individuals and society (Fuchs et al., 2014; Raczkowski, 2014; Schrape, 2014). What is more, such features are often exploitative, serving the interests of companies over users (Fuchs et al., 2014) as well as subjecting users to ever-increasing levels of surveillance (Schrape, 2014).

Whitson (2013, p. 163) has examined this connection between gamification and surveillance, and she argues that 'gamification is rooted in surveillance'. She explains that

gamification practices are connected to, and enable, surveillance through a web of relational processes that involve the production, analysis and representation of data, the use of feedback mechanisms, and governance techniques. Through such practices, she contends, gamification promotes self-surveillance, by datafying everyday human activity through which patterns can be identified, promoting the use of such data for self-improvement, and encouraging behaviour change by making self-improvement more pleasurable. She argues that this process has become a key aspect of neoliberal governance, that is, governance through the cultivation of an enterprising self (Down, 2009; Rose, 1992). Therefore, gamification in general seems to be underpinned by a range of behaviouristic characteristics and surveillance-based processes that often work against the interests of users and serve as techniques of governance. While such concerns have been discussed in relation to gamification generally, they are equally important when considering its application in education along with a range of additional considerations.

Selwyn (2014) in his examination of games technologies in education proposes a range of additional concerns, some of which address gamification directly. More broadly however, he points out that games technologies operate via rationalities of education that promote training rather than learning. This characteristic, he says, is apparent in the way success in such technologies occurs through repetition, obedience and an adherence to strict rules. He also contends games technologies are a vehicle for the transmission of dominant values. Such values, he declares, are often written into technologies by developers and designers and are seen in the way they promote obedience and an acceptance of hierarchy, and the way they normalise individualism, possessiveness and competition. However, Selwyn (2014, p. 100) draws particular attention to the connection between gamification and what he calls the 'commodification of action'. He explains this in relation to the way specific economies which operate via rewards and punishments provide the base upon which almost all games technologies function:

> The introduction of this logic into educational practices, it could be argued, extenuates the framing of learning as a commodity that can be quantifiably valued, competed for and exchanged. In an educational context, therefore, digital games could be seen as introducing 'a pedagogical frame which insinuates players into an environment which both links consumption with freedom and choice and naturalizes play as a commodity' (Apperley 2009, p. 48) … expressing learning in overtly value-based and market-driven terms. These features are perhaps most evident in the 'gamification' of educational processes, with the emphasis on point scoring, leader boards and badges to structure action and signify progress. (2014, pp. 100–101)

Selwyn reveals that these aspects of gamification have even been disparaged by some from within the gaming community, who have argued they have led to the creation of 'empty metrics' of little value (Bogost, 2011), and technologies that promote a 'pointsification' of everything (Robertson, 2010). He goes on to suggest gamification arguably degrades educational interactions into meaningless activities of exchange while promoting individualised notions of betterment over collective endeavour. Therefore, Selwyn provides a view of gamification that reveals the opaque ways in which it shapes education through the rationalities, values and logics embedded in its design.

In summary, in this section I have reviewed the literature on gamification and its association with education technology. Gamification was identified as an increasingly prominent feature of education technologies with its application based on the idea of increasing students' enjoyment and engagement by linking learning with games. The primary role of points in gamification was identified, and the increasing presence and impact of gamification on student learning. Critical perspectives, however, argue that the use of gamification in education should not simply be considered in instrumental terms, but also critically. Critical researcher thus argue that gamification is not a neutral tool, but should be regarded instead as infused with the principles, logics and rationales that underpin its workings, many of which draw on behaviouristic theories and neoliberal market logics. The presence and application of data in gamification was briefly considered within this section; however, the relationship between data and education technology more broadly is important and will now be further explored.

Education technology and the datafication of education

The increased prominence of education technology in contemporary education is invariably conjoined to the datafication of education. Datafication is a useful shorthand for the enhanced prominence of digital data in education (Bradbury, 2021; Bradbury & Roberts-Holmes, 2017). However, the concept was first introduced in narrower terms by Mayer-Schönberger and Cukier (2013) in the context of their scholarship on big data. In their work they defined datafication as the conversion of social action into quantifiable data to enable real-time tracking, including the diverse production of value that can be sourced from such data. Notably, in Mayer-Schönberger and Cukier's definition, data take on a decidedly human character. Data becomes primarily about humans, capable of capturing, via quantification, a range of human and social activities that hitherto had largely remained beyond its grasp (boyd & Crawford, 2012; Flensburg & Lomborg, 2021; van

Dijck, 2014). While Mayer-Schönberger and Cukier's definition has been used widely in academic literature, it has also been critiqued by scholars such as van Dijck (2014), who argued it reifies an ideology of data as neutral and objective, and a resource to be extracted and moulded (Flensburg & Lomborg, 2021, p. 4). Mayer-Schönberger and Cukier's concept of datafication was first used in an educational context by Lingard et al. (2013) to describe the prominent role of data within emergent neoliberal regimes of accountability across global education policy contexts. Following this, educational scholars began offering their own definitions, such as Macgilchrist (2019, p. 78) who, drawing on Williamson (2017a), defined datafication as 'the rendering of myriad forms of information about education, in particular about learning, into machine-readable digital data, which can then be subjected to sophisticated forms of processing, calculation, analysis, interpretation, visualisation and circulation'.

Bradbury and Robert-Holmes (2017) also build on prior definitions from a range of scholars, defining datafication in terms of its increased significance in education, including through its increased visibility, and its utility in enabling constant governance through dataveillance, an outcome they contend derives from the growing demands of data production in education. Furthermore, they connect it to the increased volume, variety and velocity of data in education and the impacts of such growth, including the way truths are constructed, and the way people's subjectivities are shaped. Notwithstanding the variations in how datafication is defined, its rise to prominence within contemporary education is regarded as an issue of significant importance (Bradbury & Roberts-Holmes, 2017; Jarke & Breiter, 2019; Mertala, 2020; Selwyn, 2018a; Williamson, 2017b).

The prominence of data

Datafication permeates the field of education extensively, reaching across and into a vast array of its many domains (Jarke & Breiter, 2019). The transition from pre-digital to digital forms of data has arguably fuelled such an expansion. While the association between data and education extends back to the late nineteenth century (Lawn, 2013), the advent of digital data and the infrastructures supporting its production and application have enhanced its utility, including its scope, detail and flexibility, and the complexity with which it can be formed and understood (Jarke & Breiter, 2019; Parks, 2014). Jarke and Breiter (2019), in their special issue editorial on the datafication of education, provide a comprehensive snapshot of this infiltration of datafication in education. They reveal that

datafication occurs across all levels of educational systems and institutions, from the international level down to schools, classrooms and individuals, often in ways that involve the collection of data from educational processes, such as teaching and learning or administration and management. The authors explain that datafication has provided educators with new ways to 'measure, capture, describe and represent social life in numbers' (2019, p. 1), with implications for the way some educational stakeholders such as policy makers, school leaders, teachers, students and parents make decisions and form opinions (Jarke & Breiter, 2019, p. 1). They declare that datafication has resulted in the production of 'more and heterogenous data' both deliberately by individuals and via automatic processes inherent within digital technologies, thus transforming schools into 'data platforms' (Jarke & Breiter, 2019, p. 1). Krach et al.'s (2016) study on behaviour management charts showed how ClassDojo contributes to this datafication of schooling and indicated that ClassDojo produces substantially more data about student behaviour than traditional charts. Jarke and Breiter (2019) go on to state that data are being used to track, evaluate and analyse individuals, systems, processes and more. However, despite the prominence of datafication within education, there remain many unknowns related to how technologies are influencing the production of data, and the emerging data practices being adopted by key stakeholders (Jarke & Breiter, 2019).

However, the prominent adoption of datafication in education and its effects are not a universal phenomenon. Takayama and Lingard (2019) explore this issue in their policy study on the datafication of schooling in Japan. In contrast to existing scholarship on datafication which has derived predominantly from Anglo-American contexts, their Japanese schooling study found a range of tensions and contradictions. One such tension, they contend, is the strong pedagogic emphasis Japanese education places on understanding children wholistically compared with the highly reductive, scientific, decontextualised pedagogic logic of datafication. Underpinning the tensions and contradictions are distinct institutional, cultural and infrastructural differences between national contexts which they posit have curtailed the manifestation of datafication in Japanese education. Such findings highlight the necessity to consider the datafication of education as a context-related manifestation. Moreover, they offer hope through an alternative narrative to the often-dystopian accounts that accompany Anglo-American scholarship on datafication by outlining examples of resistance to, and mitigation of, datafication in education (Takayama & Lingard, 2019).

Much of the literature on the datafication of education examines its international application in processes of governance, while its impact on classrooms remains far less reported (Bradbury & Roberts-Holmes, 2017). Bradbury and Roberts-Holmes (2017) however offer a comprehensive, yet rare, account of the impact of datafication in classrooms from their research on early years and primary school settings in the United Kingdom. Of particular relevance to this thesis is their focus on the role of datafication in driving pedagogy and its associated practices. They argue datafication impacts schooling, including pedagogy, in four important ways. Datafication has a productive effect, producing both data-driven subjectivities, in particular for teachers and students, and a range of pre-existing inequalities (Bradbury & Roberts-Holmes, 2017). Datafication is reductive due to the way it reduces the rich and intricate aspects of learning to numbers (Bradbury & Roberts-Holmes, 2017). Datafication leads to enhanced visibility of performance, making it a key ingredient of performativity (Bradbury & Roberts-Holmes, 2017). Finally, the appeal of datafication is linked to persistent beliefs about its accuracy, which promotes the value of practices such as tracking and prediction (Bradbury & Roberts-Holmes, 2017). Therefore, Bradbury and Roberts-Holmes (2017) provide what might be called, at least in part, a pedagogical perspective on the impacts of datafication which offers a guide to its implications for practice.

The rise in prominence of datafication in education across Anglo-American contexts has carried with it the promise of a new era of accuracy and objectivity (Williamson & Piattoeva, 2019). Boyd and Crawford (2012) have discussed this phenomenon in more general terms and characterised it as the mythology of data. They contend that there is a widespread belief that quantitative data sets are superior in the knowledge they provide because they are a form of information that is true, objective and accurate. Such views are reflected in the way data produced by platforms like Google and Facebook are considered by many as a source of truth which provides accurate imprints of users' actual behaviour (van Dijck, 2014). Quantitative data, however, have no greater claim to objective truth than for example qualitative data, yet common perceptions consider it the product of objective methods and a form through which facts are represented (boyd & Crawford, 2012). This relationship between quantified data and objectivity stretches back to the eighteenth century (Rosenberg, 2013). However, quantitative data are not objective facts but, as Cheney-Lippold (2011, p. 167) argues, are rather a technologically mediated and culturally situated manifestation of information through which the subjectivity of human decision making is entangled.

Dispelling notions of objectivity

Boyd and Crawford (2012) provide a compelling critique of quantitative data's claims to objectivity and accuracy, outlining why they see them as misleading. Claims to quantitative data's objectivity, they say, suggest its adherence to the sphere of objects, to its ability to represent things as they exist in and for themselves. More than this, though, objectivity is often thought of in contrast to subjectivity, which they explain is a quality many view with suspicion in the context of information production, seeing it as susceptible to the influences of various modes of individual and social conditioning. This can be seen in the way truth in numbers holds a higher status and is regarded as less contestable than truth presented in narrative form (Lynch, 2015). Quantitative research has partially constructed this perception through its standardisation of measurement, because quantification removes the need for people to rely on their judgement to determine the quality of what it is they are measuring (Porter, 1995; Rose, 1991). However, quantitative data are socially and culturally constructed by people who make decisions about what they represent, including what is not represented and the erasure of differences that exist between the phenomena they represent (Bradbury & Roberts-Holmes, 2017). Thus, all data by necessity possess a subjective dimension and consequently involve an element of interpretation which therefore calls into question claims of neutrality. All data require interpretation, and the numbers upon which such interpretations are made are not neutral. In this way, quantitative data are susceptible to being misunderstood, shaped by self-interest (Porter, 1995), and manipulated (Bradbury & Roberts-Holmes, 2017). Boyd and Crawford (2012, p. 667) speak to the issue of self-interest when they point out that the 'design decisions that determine what will be measured also stem from interpretation'. They explain that designers decide the attributes and variables to be counted, those to be ignored, and how they will be displayed, a process that is inherently subjective. In this way, the data produced via such technologies are constrained by design choices and the calculative methods they use (Rose, 1991). Therefore, to propose quantitative data have a privileged relationship with facts or reality because they exclude a subjective dimension is contentious. Rosenberg (2013, p. 37) goes so far as to argue:

> Data has no truth. Even today, when we speak of data, we make no assumptions at all about veracity … It may be that the data we collect and transmit has no relation to truth or reality whatsoever beyond the reality that data helps us to construct.

Yet despite such critiques, the prevailing view of quantitative data as an objective and fact-producing medium maintains its application as a technology of government.

In summary, this section has linked the increased use of education technology with a rise in the datafication of education. Several definitions of datafication were considered and its importance within education was established. The vast utility and application of data across education was recognised, including the new uses educators have been provided with through its application. It was noted that this prominence of data has led to its increased production which has transformed schools into data platforms. Yet despite this increased production and use of data, including a proliferation of new data practices, many issues concerning the role of technologies in this phenomenon and the implications of using data in new ways remain unknown. The rise of datafication in education was also discussed in relation to the perceived objective quality of data. Critiques of such perceptions were considered, which argue quantitative data's claims to objectivity and accuracy are misleading. Therefore, the datafication of education is of fundamental importance to understanding contemporary education, and the ways in which it is changing. In particular, there is a need to investigate the unknown implications of technology use and new data practices associated with the datafication of education. ClassDojo is included in this field of unknown implications due to the dearth of research on its use in schools, its data-centric characteristics, and its potential to generate novel data practices within the domain of school discipline.

Datafication and governing by numbers

With the rise of datafication in education has come a new paradigm of 'governing by numbers' (Jarke & Breiter, 2019). This new form of governance has drawn the attention of notable education scholars such as Jennifer Ozga (2009), Sotiria Grek (2009) and Stephen Ball (2015), who have recognised its growing significance in education. The dual ascension of datafication and governing by numbers is not coincidental, but rather interrelated, with datafication serving as a mechanism for new ways of measuring, capturing, describing and representing social life in numbers (Jarke & Breiter, 2019). While this relationship represents a relatively new field of research in education studies, its emerging knowledge aligns with sociological scholarship from other fields on the ways in which numbers are used to govern people's conduct more generally.

Ball (2015, p. 299) points to the ubiquity of numbers in governing people's lives in his description of humans as 'numbered subjects'. Numbers are used in a myriad of different

ways to govern people and their lives. Numbers, for example, are often used to count, rate, compare, categorise, grant benefits, define worth and measure effectiveness (Ball, 2015; Rose, 1991). They are also used to connect institutions with people's lives through technologies such as surveys and opinion polls, and to confer legitimacy to political authority and its stewardship of national life, through indicators of, for example, education quality, crime and public health (Rose, 1991) – such as using COVID-19 infection rates as an index for measuring the success of a government's response to the recent pandemic. At first glance, when numbers are used in such ways their utility and benefits seem obvious: they promote transparency, a sharing of information and the ability to sort information (Ozga, 2016). However, closer inspection reveals that they are also being used to perform powerful social and governing practices (such as observing, describing, classifying, calculating, sorting, ordering and ranking) (Ozga, 2016). Through these practices numbers are used as a means of describing social reality. They assist in defining this reality by establishing what matters through what they count (Lynch, 2015; Porter, 1995). Rose (1991, p. 676) argues that this process does 'not merely inscribe a pre-existing reality', but rather constitutes it.

Key processes in the use of numbers as governing devices

Measurement of quality

Numbers have acquired an unmistakable power as technologies of government (Rose, 1991, 1999b), and they are often applied as a means of persuasion or intimidation (Ewing, 2011; Piattoeva & Boden, 2020). Arguably, the capability of numbers to express quality, or rather qualities, is central to this power (Bacevic, 2020). Bacevic (2020) explains that in sociology this capacity is seen as involving several linked operations. These include valuation, that is, the social process that enables entities to count or be counted as a measure of worth; as well as commensuration (see also Mau, 2019; Sellar, 2015), or the application of equivalence, a process which is applied to establish 'what counts *as* or *for* what, and under what circumstances' (Bacevic, 2020). In addition to the utility these operations afford, it is commonly assumed numbers provide a form of knowledge that is robust, objective and neutral, somehow evading in their formation encounters with ideology, theory and values (Dussell, 2013; Lynch, 2015; Piattoeva & Boden, 2020).

However, such assumptions feed into what Piattoeva and Boden (2020, p. 6) describe as 'the attractiveness of numbers', which they contend has come about through the perception of several qualities that lend numbers an air of legitimacy. These qualities

include disinterestedness, impersonality, objectivity and universality (Piattoeva & Boden, 2020). These properties make numbers attractive to those seeking to exercise power inconspicuously, as authority appears to reside within the numbers themselves, rather than being associated with the people that use them. Piattoeva and Boden (2020) also reveal that numbers can portray an aura of transparency and accessibility that, contrastingly, makes them appealing to individuals who may view them as a way to observe power holders, and subsequently hold them to account through such observations. However, the above views and assumptions ignore the social dimension of numbers implicated in their formation and interpretation (Bradbury, 2021). Numbers are not created within a social vacuum; rather, they derive from a standpoint, a political and intellectual position; they are inherently interpretive, fluid and amorphous; and consequently, also subject to distortion (Lynch, 2015; Piattoeva & Boden, 2020). Yet, notwithstanding such critique, numbers remain a powerful mechanism of governance, in part due to their application as indictors of quality.

Simplification

Intimately linked to the creation and use of numbers as a governing technology through which the world is materialised are processes of simplification (Espeland & Sauder, 2007; Esposito & Stark, 2019; Rose, 1991). This quality has been lauded by proponents of using numbers to govern, who view it 'as signalling the end of traditional preoccupations with understanding human activity', replacing it instead with 'simple measurement as a guide to action' (Ozga, 2016, p. 70). Although the simplification numbers provide comes at a cost, numbers, through their production, strip away the contexts and the granular subjective detail of the phenomena they purport to represent (Piattoeva & Boden, 2020; Sellar, 2015). Bradbury and Roberts-Holmes (2017) refer to this process as 'reduction'. As such, numbers provide thin descriptions of reduced complexity (Ozga, 2016), making them a key governing device. Furthermore, Rose (1991, p. 680) argues that the processes of simplification through which numbers are formed 'embody the expectations and beliefs of the responsible technicians and officials' who use them. Expectations and beliefs, he contends, are embodied in the way statistical inquiry is framed, for example, in choices about what is counted and in relation to what particular theories. So too are they embedded in the classifying systems that are adopted, for example ethnicity rather than race, 'in how the measurement is done, and what forces have their concerns embedded in numbers', and in the ways data are shaped and presented (Rose, 1991, p. 680). Meanwhile,

'the ultimate reduction of complexity … is the choice of the single number' (Rose, 1991, p. 680).

Standardisation

Description, even through the simplified representations provided by numbers, counts for little without standardisation (Porter, 1995). Porter (1995) contends that only through the standardisation of numbers is it possible for calculation to establish the norms and guidelines necessary for actors to be judged and for allowing them to judge themselves, or in other words, be measured. He goes on to state that standardisation makes quantification reliable, and comparison across vast populations possible, and provides numbers with an air of validity despite the simplification they entail. Mau (2019) connects this attribute of standardisation with the relationship numbers have with comparison and competition. While using numbers to compare and foster competition is not new, he contends the emergence of the quantified society has led to the intensification of this competition. He reveals that this results in the emergence of new forms of comparative relationships and an increasing sense among people of being in perennial competition with others. He explains that numerical data allow for nominal differences to be emphasised and expressed anew in graduated and hierarchical terms. The standardised numerical data through which this occurs thus become differentiators and means of comparing hitherto incomparable and disparate entities (Mau, 2019). Similarly, numbers are used to translate 'the idiosyncratic, the individual and the unique into universal and compatible codes' (Mau, 2019, p. 34). Subsequently, when such data 'comparisons become associated with social factors as part of everyday life, competitive forms of interaction are strengthened, and rivalry takes on new importance' (Mau, 2019, p. 37). The standardisation thus established via numbers has enabled techniques of governance to be widely applied, including through the processes of comparison and competition.

Linking government with numbers to discipline and governmentality

Bound to the practice of governing people is a long history of not only statistical data, but also surveillance and discipline (Rose, 1991). The link between all three is exemplified in the use of the census, a technology through which a population as a social and political phenomenon is brought into existence (Ball, 2015), creating 'a knowledge of and calculation about those over whom government was to be exercised' (Rose, 1991, p. 677). Rose (1991) highlights the way census numbers are used to facilitate the government of people. To begin with, censuses 'are linked to specific problematizations' as they provide

the technology for representing, understanding and informing a response to a problem (Rose, 1991, p. 686). As Rose (1991, p. 686) points out, 'to count a problem is to define it and make it amenable to government. To govern a problem requires that it be counted.' Secondly, he asserts that census numbers are tied to the way the act of government is evaluated. 'To measure the success of government is to measure quantitative changes in that which it seeks to govern' (Rose, 1991, p. 686). Rose is clearly discussing numbers in relation to governing populations; however, they have served equally useful in governing at an individual level. This is seen in the way that numbers are often used to perform an individualising function, as they can be used to represent, or bring into existence, properties that are attributable to individuals (Porter, 1995). Such a process opens up new possibilities for a discipline-based form of government. However, Porter (1995, p. 45) explains that the success of using numbers to govern individuals is complex:

> numbers alone never provide enough information to make detailed decisions about [complex phenomena] … measures of achievement in general succeed to the degree they become … 'technologies of the soul.' They provide legitimacy for administrative actions, in large part because they provide standards against which people judge themselves. [Measures] … cannot work effectively unless their validity, or at least reasonableness, is accepted by the people whose accomplishments or worth they purport to measure. When it is, the measures succeed by giving direction to the very activities that are being measured. In this way individuals are made governable; they display what Foucault called governmentality. Numbers create and can be compared with norms, which are among the gentlest and yet most pervasive forms of power in modern democracies.

Thus, numbers appear in many ways to occupy a central role in processes of governance, be that at a population level or the individual, their utility often directed toward applications that enable measurement, evaluation and judgements of worth via calculation (Bradbury, 2019b; Lynch, 2015). So too do we see their presence in the governing technologies that permeate education, with counting and measuring proving a popular mode through which to govern and make sense of the reality and facts of education (Dussell, 2013).

Governing by numbers in education

Numerical data plays a pivotal role in education as a technology of government (Piattoeva & Boden, 2020). Its presence is widespread and its application diverse, and it is involved in processes of government via artefacts such as international and national comparisons (Grek, 2009; Hartong, 2016; Holloway et al., 2017; Sellar & Lingard, 2018), data dashboards

(Hartong, 2021; Jarke & Macgilchrist, 2021), university rankings (Brankovic et al., 2018; Lynch, 2015), teacher accountability and performance measures (Ball, 2015; Lewis et al., 2022; Mockler & Stacey, 2021), financialisation (Hogan, 2021), pupil testing (Bradbury, 2019b; Hardy, 2015a; Hogan et al., 2014; Kelly et al., 2018), and credentialisation (Collins, 2019; Tomlinson, 2008), among others (Piattoeva & Boden, 2020). Through such means, numbers govern by manipulating subjectivities both at a collective and an individual level, their influence evident within contemporary manifestations of, for example, the performance-evaluated teacher, the administrator and the test-oriented student (Bradbury, 2019b; Hardy, 2015a; Hartong, 2016; Mockler & Stacey, 2021; Piattoeva & Boden, 2020). Accordingly, the numbers of educational performance data have in recent times acquired an aura of elevated legitimacy among policy makers and the broader public (Sellar, 2015).

The numbers of educational performance data are used to govern not only education systems, but also the work of principals and teachers and the experiences of students and parents (Bradbury, 2019b; Lingard et al., 2013). In this way numbers perform a fundamental role in the governing process, which Hardy (2015b, p. 335) declares is based on 'a logic of enumeration'. Within schools, Ozga (2016) explains that pupil performance data in particular act powerfully on individuals and groups and their use is often accompanied by an obligation for individuals to engage with such data in a process of self-production. She associates the calculation of performance data with the process of dataveillance, contending that together they govern individuals by 'not only by making them visible, but through encouraging people to think of themselves in particular ways, that is, to classify themselves' (2016, p. 79). This is because such visibilisation and monitoring pushes individuals in particular directions and to act in particular ways (Bradbury, 2021). Therefore, in education numerical data have been put to work for the purpose of governing systems, administrators, teachers, students and even parents, demonstrating the powerful effect numbers have as a governing technology. Numbers occupy a prominent place in contemporary education, which according to Ball (2017) is a core characteristic of what he refers to as neoliberal pedagogy.

As a feature of neoliberal education

The term neoliberalism is commonly associated with politics and government; however, its growing influence on education is increasingly being recognised by education scholars. Its presence in education is linked to the paradigm of 'governing by numbers' (Ball, 2016;

Ozga, 2008). Put briefly, neoliberalism can be described as 'an articulation of state, market, and citizenship that harnesses the first to impose the stamp of the second onto the third' (Wacquant, 2012, p. 71). Consequently, the principles of the market have spread far beyond the economic realm to encroach on social life more broadly (Connell, 2015; Taylor, 2013). Education has not been spared this encroachment, as market principles along with related neoliberal characteristics have infiltrated education and schooling insidiously (Ball, 2016; Lingard & Hursh, 2019; Robinson et al., 2018), including the practices and pedagogies of contemporary teaching (Ball, 2017).

Neoliberalism's influence on education manifests in a range of ways that promote, effectuate or are linked to market principles. Connell (2015) has discussed for example the way market logic has increased its grip on schools, universities and technical education. Neoliberalism, she argues, has pervaded education through market logics which are often bounded to commodification, competition, performance management, managerialism and regimes of accountability. Such factors contribute to neoliberalism's broader vision, which constructs an economistic view of education as a process of forming human capital (Connell, 2015). Lingard and Hursh (2019) describe neoliberalism's presence in education as part of a reform agenda which has increased the prominence of testing regimes and performance evaluation. This neoliberal agenda, they contend, has framed recent US school policy in a manner that 'gives priority to the market over the state, encourages individual responsibility as opposed to support for the common good, and which assumes competitive individualism as the desirable norm' (2019, p. 241). This agenda ultimately requires and constitutes a specific kind of individual, or rather, a specific kind of teacher or student, which is formed within the logic of competition and economic rationality (Ball & Olmedo, 2013). Ball (2017) goes further to describe a specific neoliberal pedagogy. Drawing on Peck and Tickell (2002), he explains it is a pedagogy which aligns with the needs of the neoliberal competition state and is instituted by embedding technocratic routines of neoliberal governance into the ordinary operations of classroom and school life. It is therefore evident that market-based principles are influencing contemporary education in many ways, transforming it into an institution, and a process, in which human experience in its varied forms is understood in economic terms (Lingard & Hursh, 2019).

The installation and advancement of such neoliberal logics and values via education policy and practice, however, often depend on quantitative data and its supporting infrastructures (Lingard & Hursh, 2019). Digital technologies as providers of both, Selwyn

(2014) argues, bring the ideology of neoliberalism into real existence. The close relationship between data and neoliberal education systems is evident from the preoccupation such systems have with data (Bradbury & Roberts-Holmes, 2017). Data are viewed within neoliberal education systems as critically important to their functioning as they provide for the simple embedment of values such as competition, comparison and accountability (Bradbury & Roberts-Holmes, 2017; Wyatt-Smith et al., 2019). Data thus provide 'the ideal means of bringing market values and free market mechanisms into otherwise closed public education settings' (Selwyn, as cited in Bradbury & Roberts-Holmes, 2017, p. 4). Lewis et al. (2022, pp. 70–71) also note that neoliberalism's influence is associated 'with a significant increase in data collection, analysis and use in education globally, with numerical data now entrusted to define, measure, compare and govern the performance of students, teachers, schools and schooling systems alike'.

Entangled within this preference for numbers is the mythology of data boyd and Crawford (2012) identified. The popularity of numerical data emerges from a popular perception that they provide an 'objective' form of measurement. Consequently, neoliberal forms of education policy and practice and data are intimately entwined, bringing together the ideas of neoliberal logics and objectivity in ways that influence education, including the ways 'teachers come to enact and value certain pedagogical practices, logics and dispositions over others' (Lewis et al., 2022, p. 71).

In summary, in this section I have drawn attention to what Jarke and Breiter (2019, p. 2) have described as a new paradigm of 'governing by numbers' in education and its links with the rising prominence of datafication. I outlined that, with the emergence of this new paradigm, numbers have obtained an unmistakable power as technologies of government (Rose, 1991). I examined a set of key processes underpinning the use of numbers which provided insights into the ways numbers function as governing devices, including as a measurement of quality, a process of simplification, and a method of standardisation. The historical relations between government, numbers, surveillance and discipline were established from a review of Rose's (1991) description of the census as a governing technology used to govern both populations and individuals. The use of numbers in education to govern was then reviewed and its extensive application across a broad spectrum of education contexts, and involvement with a diversity of stakeholders, was recognised. I then considered the way governing by numbers is associated with the emergence of neoliberal forms of education by tracing connections between numbers and the application of market and economic logics in education and the increased prevalence

of quantitative data. These ideas about the way numbers function as governing devices, and the varied ways in which they are used in education settings, are useful for understanding ClassDojo. This is because ClassDojo is a technology designed, and used, to govern students and their behaviour, of which a fundamental feature is the use of numbers.

Summary

In this chapter I have reviewed literature on school discipline, education technology, governing by numbers and ClassDojo. The review has identified aspects within these bodies of knowledge that are relevant and important to understanding ClassDojo in relation to the aims and purpose of this study, that is, as a school discipline technology.

The review of the school discipline literature established that school discipline is a mechanism of schooling focussed on the development of student behaviour. The deployment of school discipline in schools is commonly framed by the objective of creating and maintaining an orderly school environment, and orderly student behaviour. However, notions about what constitutes an ordered environment or orderly behaviour in schools vary, along with how such order may be achieved. It has been noted that many schools, for example, reduce school discipline to an instrument of control through which student compliance is viewed as a means of accomplishing order. Furthermore, views about student behaviour in schools are dominated by individualising and pathologising narratives that situate blame for behaviour in the student or their family. This is despite research indicating most unproductive behaviours are disengaged behaviours, which suggests the causes include classroom and school-level factors. Moreover, understanding school discipline in terms of its varied forms, purposes and ways of conceiving behaviour is vital for considering how ClassDojo can be understood as a school discipline technology.

I reviewed research on ClassDojo as a behaviour management technology to establish what is known about the platform and the way it is used to manage student behaviour. I found that ClassDojo increases positive behaviours and decreases negative behaviours in students. However, some research found this impact to be temporary, with it fading once teachers stop using ClassDojo. It was also established that students', parents' and principals' perceptions of ClassDojo are predominantly positive. Most students think using ClassDojo is fun and enjoyable, and that it has a positive effect on their behaviour. However, not all student views were in agreeance, with concerns raised by some about being tracked through ClassDojo and the competitive environment ClassDojo creates in

the classroom. Research focussed on how ClassDojo is used revealed that the platform provides a reductive form of behaviour management that reproduces teachers' biases, and that it is also used as a digital behaviour management chart which produces large volumes of data about student behaviour. Research on how ClassDojo is used to manage student behaviour largely neglects the specific practices teachers employ with, and through, the platform outside of the general use of ClassDojo's feedback points. Therefore, there remains a need for research that investigates how, and for what reasons, teachers and schools use ClassDojo to address issues of student behaviour.

I also reviewed studies which examined ClassDojo as an education platform. This research traced the network connections associated with ClassDojo to reveal the influences acting on its formation, the type of education it promotes, and the implications that stem from its use. Research has identified that ClassDojo promotes psychologised notions of behaviour, gamification and data-based techniques of surveillance. Furthermore, emerging insights into the relationship between ClassDojo and power were revealed by identifying the way opaque company processes actively shape user interactions on the platform. Therefore, this small body of research raises important questions about the impact ClassDojo may have on the way school discipline is carried out by teachers and schools. ClassDojo is not simply a tool for behaviour; it is a technology which promotes a particular view of behaviour and discipline which may have significant implications for teacher practice and school policy.

The review of the education technology literature outlined the extensive diffusion of education technology across modern educational contexts. It is now viewed as an integral yet unremarkable component of the conditions and arrangements of education and schooling. One of its most common forms is the digital platform. Digital education platforms can be conceptualised as consisting of four defining features: digital architectures, intermediaries, a new type of organisation and investments in forms. Conceptualising education platforms in this way enables them to be understood as technologies that shape education through the logics, rationalities, values and principles embedded in their features and functions. One common way education technologies shape education is through gamification, which involves incorporating game design elements into education technologies for the purpose of making learning more enjoyable and engaging. Game design elements shape the way education technologies function by providing the features, processes and techniques through which they are used, and as a consequence promote and facilitate particular approaches to learning and education.

ClassDojo is part of this 'technification' (Selwyn, 2021) of schooling, and in addition provides a gamified approach to school discipline. Therefore, understanding how the features and functions within its platform shape the form of school discipline it provides is critical to understanding its impact on education.

The review of the literature on the datafication of education linked the proliferation of education technology to the increasing datafication of education. The datafication of education was also recognised as a prominent and important aspect of contemporary education. Data, and their use, are assuming an expanding role in education and are used for administration, teaching, learning, assessment, surveillance and more, yet the implications of using data in such ways remain largely unknown. In addition, data are perceived by many uncritically as an inherently objective and accurate source of information. However, such views have been dispelled as misleading as they fail to recognise the socially constructed nature of data, the limitations associated with their production and display, and the ways in which they can be used to serve the interests of some over others. It is therefore important to consider how ClassDojo contributes to the increasing datafication of education, and the potential implications of its datafication of behaviour and discipline for teacher practices and the enactment of school discipline more broadly.

The review of the literature on the use of numerical data in education revealed that numbers have gained an increasingly important role in education recently with the advent of a new paradigm of 'governing by numbers' (Jarke & Breiter, 2019, p. 2). Numbers permeate the educational landscape and are used in a vast array of ways to govern, including to count, rate, compare and categorise both individuals and education institutions and systems more broadly. Fundamental to their use are three key processes: measuring quality, simplification and standardisation. These processes enable numbers to be used as devices for governing education and those within it by enabling them to be measured, evaluated and judged via calculation. Underpinning the appeal of using numbers in such ways are common assumptions that frame them as robust, objective and neutral representations of reality. However, it has been shown that numbers are brought into existence from a particular standpoint, a political and intellectual position; they are inherently interpretive, fluid and amorphous; and consequently, also subject to distortion (Lynch, 2015; Piattoeva & Boden, 2020). In this way numbers should be understood not simply as inscriptions of reality, but rather as phenomena which actively constitute it. Because ClassDojo is a behaviour-governing technology infused with processes that rely

on numbers, understanding how numbers function within ClassDojo will provide insights into the school discipline practices enacted through its use.

Chapter 3: A theory of power

In this chapter I outline the theoretical framework that underpins this study. Foremost, I draw on ideas derived from Foucault's analytics of power to interpret my findings and as a way to understand how power is exercised through ClassDojo. In this chapter I begin by providing a rationale for using Foucault's ideas on power in this study and describe how I used the notion of theory as a toolkit to develop a framework. I then provide a brief overview of the way Foucault's ideas have previously been used in education research. Lastly, I turn my attention toward describing the theoretical tools I draw from Foucault, including a set of general principles of power, and the specific concepts of disciplinary power and panopticism.

Foucault's ideas about power were used in this study because they provide an intricate, expansive conception of power with the capacity to reveal its presence and effects in the day-to-day practices of school discipline. It is a conception of power which enables ideas and practices that are deemed natural, necessary or inevitable to be confronted and challenged (Taylor, 2011). In this way Foucault's ideas provide a way to analyse ideas and practices within a domain of education, school discipline, in which power functions in many ways invisibly and anonymously (Foucault, 1977). Thus, Foucault's ideas about power provided not only a particularly suitable set of theoretical tools to examine the intersection of school discipline, ClassDojo and power but also a way to expose the invisible and anonymous forms of power that flow through ClassDojo via its approach to school discipline.

I drew on Foucault's (1980c) notion of theory as a toolkit to assemble the set of theoretical tools applied in this study. A set of selected ideas were thus adopted from Foucault's writings on power deemed relevant to the aims of this study. These tools were put together and used 'not as a system but an instrument' (Foucault, 1980c, p. 145) with which to think. This customised toolkit enabled me to see, analyse and understand power in a Foucauldian manner as 'a micro-physics of small actions and continual operations' (Elden, 2017, p. 30). Viewing power in this way made it possible to undertake an analysis of the mechanics of power, that is, the ways it is 'exercised – concretely and in detail – with its specificity, its techniques and tactics' (Foucault, 1980f, pp. 115–116). For this study, it thus provided a way to examine, as Ball (2013, p. 6) puts it, 'the sinews of power … embedded in [the] mundane practices and … social relationships' mediated by ClassDojo in the school, classroom and

family home. This in turn opened up possibilities to consider how the platform constructs and problematises behaviour (Foucault, 1983) and promotes particular ways of responding to it.

Foucault's ideas have been used extensively across education, the social sciences and the humanities (Koopman, 2011). Within education research his work is well-known, and his influence continues to grow (Deacon, 2006; Fimyar, 2008; Peters, 2004). Education researchers have keenly adopted his concepts to help understand research problems, such as discipline and problematisation (Deacon, 2006), subjectivity and truth, and power-knowledge and discourse (Peters, 2004). Consequently, Foucault's ideas have permeated the fields of education that tend to draw significantly on philosophy, history, sociology and political science (Baker & O'Farrell, 2021), including leadership studies (Dolan, 2020) and education policy studies (Fimyar, 2008). However, the application and influence of his ideas in classroom management and school discipline research appear less pronounced. There is evidence within these fields of sporadic use of his ideas related to disciplinary power and pastoral power (see e.g. Millei et al., 2010; Pitsoe & Letseka, 2014), yet beyond this the use of Foucault's work seems limited. In research conducted on ClassDojo Foucault's ideas have largely been ignored. Therefore, using Foucauldian ideas about power provides this thesis with a novel interpretive frame through which to understand ClassDojo, and the practices employed through its use.

The theoretical tools I have selected for use in this study are drawn from the program of research Foucault undertook in the second half of his career, which has been broadly described as a genealogy of knowledge/power relations (Ewald & Fontana, 2007). In particular, they derive in the main from Foucault's principal analysis of power, which emerged at the beginning of this period, and his work through the mid to late seventies on penal systems and discipline (Elden, 2017). I first provide a series of general properties associated with the way Foucault understood power. I follow this with a description of disciplinary power in relation to the way it produces docile bodies, and functions as a means of correct training. I then describe panopticism as a generalisable system of disciplinary power in its optimal form.

General properties of power

Underpinning Foucault's notion of power are a series of general properties which help to understand its forms and the way it functions. For Foucault (1980c, 1998), power is everywhere; it encompasses everything, creating an environment within which there is no

possibility for people to position themselves outside of it. Power is not something that is possessed or acquired like wealth, it cannot be given or exchanged, and it is not an institution or a structure (Foucault, 1980a, 1980g, 1998). Instead, power is something that is exercised, existing entirely in action, a relation of force (Foucault, 1980g). Foucault described how this act of exercising power might occur, stating:

> I use my age, my social situation, knowledge I may have about this or that way of getting you to conduct yourself in this way or that way … put pressure on you and get you to behave in one way or another, or to intimidate you, that is to say, when I act on your conduct with a certain number of means, then, at that point, I am exercising power. (2016, p. 129)

Due to power functioning in this way individuals should be understood as 'vehicles of power' rather than 'its point of application' (Foucault, 1980g, p. 98). However, relations of power are never equal, with Foucault declaring 'as soon as there is power there is inequality' (2016, p. 130). While this does not mean power relations are irreversible, he did contend that in:

> most societies, maybe in [all societies], organizations are created to fix and maintain power relationships to the advantage of some, in a social, economic, political, institutional, et cetera, dissymmetry, which completely freezes the situation … [power] is institutionalized, fixed, and immobilized to the advantage of some and at the expense of others. (2016, p. 130)

This portrays what might be described as a condition of institutionalised relational inequality. However, that is not to say that domination is inescapable or defeat inevitable within Foucault's notion of power (Foucault, 1980c). Possibilities for resisting such outcomes are evident in Foucault's view that resistance to relations of power is an element of power itself that forms 'right at the point where relations of power are exercised' (Foucault, 1980c, p. 142). Therefore, power should not be understood exclusively in negative terms, as a system of repression or oppression bearing down from above (Foucault, 1980f, 2016). It is better understood as a productive network of relations that also produces things, induces pleasure, forms knowledge and produces discourse (Foucault, 1980f). Therefore, Foucault's concept of power can be understood through these general properties; they are fundamental aspects through which power operates and form the basis for understanding both disciplinary power and panopticism.

Disciplinary power

Disciplinary power emerged in the early nineteenth century as a new modern form of power with the human body as its target. It was applied rapidly across society, replacing sovereign power as the dominant model (Foucault, 1977). Disciplinary power provided new possibilities for power that increased its scale of control, the objects subject to its control, and the modality of its operation (Foucault, 1977). Its rise established a new model of power that was administered over the body, made up of a vast assemblage of instruments, procedures, techniques, targets and levels of application. Foucault declared it 'a "physics" or an "anatomy" of power, a technology' (1977, p. 214). It was at the extremities, in what Foucault (1980e, p. 39) referred to as its capillary form, that disciplinary power reached 'into the very grain of individuals, touch[ing] their bodies and insert[ing] itself into their actions and attitudes, their discourses, learning processes and everyday lives'. Through disciplinary power, the body has become a target and an object of subjection; the entirety of its attention is concentrated on the body by way of techniques of supervision, training, correction and conditioning (Foucault, 1977, 1980b). The rapid uptake of disciplinary power led Foucault (1977, p. 216) to refer to 'the formation of a disciplinary society'. Schools, the military and medical institutions exemplified the utility and widespread application of discipline, which was variously applied via instruments of regulation and empirical and calculated methods devised to control and correct the operations of the body (Foucault, 1977).

Docile bodies

Discipline, in its application and the processes through which it functions, produces docile bodies (Foucault, 1977). Foucault highlighted this notion of docility when he detailed a key component in disciplinary power's operation: its capacity to induce human submission to objectives purposed with making the body useful. Foucault (1977, p. 136) explained that with disciplinary power the body becomes analysable, intelligible and manipulable, declaring that 'a body is docile that may be subjected, used, transformed and improved'. This is because the techniques of power provide a means of accessing and modifying the individual and their activities (Foucault, 1977). It functions however, not through physical punishment and public spectacle, but through subtle coercion which places holds over an individual's movements, gestures and attitudes, creating what Foucault (1977, p. 137) referred to as 'an infinitesimal power over the active body'. Disciplinary power formulates these aspects of the individual as an economy which it uses to control them. This economy

is used to constrain the body's forces, and to organise and order its activities to make them more efficient and the body more useful (Foucault, 1977). Embedded within such methods is an implied 'uninterrupted, constant coercion' established via a supervision attentive to the processes of activity which, when exercised, partition 'as close as possible time, space, movement' (Foucault, 1977, p. 137).

> What was then being formed was a policy of coercions that act upon the body, a calculated manipulation of its elements, its gestures, its behaviour. The human body was entering a machinery of power that explores it, breaks it down and rearranges it. A 'political anatomy', which was also a 'mechanics of power', was being born; it defined how one may have a hold over others' bodies ... Thus, discipline produces subjected and practised bodies, 'docile' bodies. (Foucault, 1977, p. 138)

In this description, Foucault revealed the multiple forces applied to the body through the machinery of disciplinary power. The body is not targeted as a whole unit, but rather broken down into discrete elements, each one a site at which power is exercised. Through such mechanisms an expansion of the body's utility becomes possible via its training.

Discipline as a means of correct training

Disciplinary power can be construed fundamentally as a system of correct training. In fact, Foucault (1977, p. 170) saw its capacity to 'train' as its chief function; it is a means through which individuals can be made, or rather remade. However, through its techniques individuals exist not only as objects to be trained but also as instruments of its exercise (Foucault, 1977). In other words, individuals perform a critical function in its deployment; they are the means through which it is exercised. Moreover, such is the nature of these techniques that Foucault (1977, p. 170) referred to discipline as a 'modest, suspicious power' exercised via 'humble modalities' and 'minor procedures' that have made possible their infiltration into the everyday mundane activities of people. He attributed disciplinary power's success to simple instruments of 'hierarchical observation, normalizing judgement and their combination in a procedure that is specific to it, the examination' (1977, p. 170).

Hierarchical observation

Foucault (1977) regarded hierarchical observation as a precondition of discipline which, when exercised, relies on a system of coercion to produce its effects. He described hierarchical observation as 'an apparatus in which the techniques that make it possible to

see induce effects of power, and in which, conversely, the means of coercion make those on whom they are applied clearly visible' (1977, p. 171).

Thus, it is through the act of watching and making the individual visible that the effects of power materialise and hierarchical relationships between the watcher and the watched are reinforced. It is precisely the visibilisation of the watched that creates increased possibilities for their coercion. Furthermore, the hierarchical nature of this disciplinary instrument concerns more than merely that which relates to authority. It is also integrated into architecture, in what Foucault (1977, pp. 171–172) referred to as 'the spatial "nesting" of hierarchised surveillance'. That is, an architectural schema of geometrical, distributional and orientational features is embedded into, for example, schools, prisons and military camps, to ensure power can be exercised within them via exact observation (Foucault, 1977). 'The perfect disciplinary apparatus', Foucault (1977, p. 173) remarked, 'would make it possible for a single gaze to see everything constantly'. However, this requires both an architecture that enables it, and a hierarchical structure of supervision which ensures the maintenance of a continuous gaze. Foucault provided an example of how this structured hierarchy is created in the school through the relationship of teaching to generate a more efficient system of supervision. He explained that teachers established hierarchical surveillance structures in their classrooms by recruiting from the best pupils an array of aides who were given specific roles which involved monitoring the particular behaviours or activities of their peers (Foucault, 1977). For example, some roles involved monitoring student attendance, others recorded behavioural infractions, and there was even a role that involved the supervision of all the other aides. Therefore, with the installation of such a system, a network of surveillance is produced that covers all students, including those with the task of monitoring their peers. In this way, Foucault (1977, p. 177) explained:

> the power in the hierarchized surveillance … functions like a piece of machinery. And, although it is true that its pyramidal organization gives it a 'head', it is the apparatus as a whole that produces 'power' and distributes individuals in this permanent and continuous field. This enables the disciplinary power to be both absolutely indiscreet, since it is everywhere and always alert, since by its very principle it leaves no zone of shade and constantly supervises the very individuals who are entrusted with the task of supervising and absolutely 'discreet', for it functions permanently and largely in silence.

Hence, in its ideal form, hierarchical surveillance operates as a network that ensures its continuous functioning over those at whom it is directed. However, as an instrument of disciplinary power hierarchical surveillance is invariably linked to another of its instruments, normalising judgements.

Normalising judgements

The second of Foucault's instruments of discipline is normalising judgements. For Foucault (1977, p. 177), normalising judgements are central to all disciplinary systems and operate as 'a small penal mechanism' purposed with shaping an individual's conduct. Such judgements are often used to punish small infractions and involve subtle procedures such as 'light physical punishment … minor deprivations and petty humiliations' (Foucault, 1977, p. 178). Punishment also extends to what Foucault (1977, p. 178) refers to as 'non-observance', or in other words when someone does not measure up to, or departs from, the rule. Within a school context such an approach would regard not only a modest infringement as an 'offence', but also an inability to complete activities (Foucault, 1977, p. 179). The principal purpose behind disciplinary punishments in general is to reduce gaps between actual conduct and an ideal model (Foucault, 1977). Therefore, punishments often possess a corrective function and favour those that involve exercise – 'intensified, multiplied forms of training, several times repeated … to punish is to exercise' (Foucault, 1977, pp. 179–180). Punishment, however, only represents one attribute of discipline's dual system: 'gratification-punishment' (Foucault, 1977, p. 180).

Gratification seeks to train the body not through penalties but through pleasure. The use of gratification as a disciplinary technique in schools has a long history with texts as far back as 1716 encouraging its use by teachers (Foucault, 1977). A seventeenth-century text by Démia titled *Regulations for the schools of the city of Lyon* instructed teachers to 'make rewards more frequent than penalties' for the effective training and correcting of pupil conduct (Foucault, 1977, p. 180). Foucault (1977, p. 180) explained that using this dual system enables behaviour to be classified as either right or wrong: all behaviour can be situated in a 'field between good and bad marks, good and bad points'. Furthermore, classifying behaviour in this way makes it possible to quantify behaviour within a field and establish an 'arithmetical economy' through which it can be governed (Foucault, 1977, p. 180). Foucault (1977, p. 180) referred to this as a form of 'penal accountancy' that could be constantly updated, making 'it possible to obtain the punitive balance sheet of each individual'. This also allowed individuals to be ordered in relation to each other in a

hierarchy of subjects differentiated by their value – qualities, skills, aptitudes – within a micro-economy (Foucault, 1977). This ordering aspect multiplies the potential to discipline individuals as it installs an additional disciplining mechanism via 'the penal functioning of setting in order and the ordinal character of judging. Discipline rewards simply by the play of awards, thus making it possible to attain higher ranks and places; it punishes by reversing this process' (Foucault, 1977, p. 181).

Simply put, an individual's rank serves on its own as a judgement that rewards or punishes (Foucault, 1977). Ultimately, normalising judgements in all their forms operate as a 'penality of the norm', their application reaching across a broad field of conduct through extensive supervision in ways that compare, differentiate, hierarchise, homogenise and exclude – in a word they normalise (Foucault, 1977, p. 183).

The examination

The third of Foucault's instruments of discipline is the examination which is brought about through the unification of hierarchical observation and normalising judgement (Foucault, 1977). Foucault described the examination as a 'normalizing gaze, a surveillance that makes it possible to qualify, to classify and to punish. It establishes over individuals a visibility through which one differentiates them and judges them' (Foucault, 1977, p. 184). However, the examination is not merely the dual application of hierarchical observation and normalising judgement, but rather an innovative fusion which operates not only via power relations but also knowledge relations (Foucault, 1977). For Foucault (1977, p. 186), the school became an apparatus of 'uninterrupted examination' with the advent of disciplinary power. The examination created in schools an environment of perpetual comparison; it provided them with an instrument to not only judge and measure its pupils, but also pass on knowledge from teachers to pupils and transform pupils themselves 'into a whole field of knowledge' (Foucault, 1977, p. 186). The examination thus functions in several important ways: it exercises power by making subjects visible and it enables individuality to be secured and fixed via documentation, which in turn is utilised to establish every individual as a case (Foucault, 1977). Thus, in combination, the object and target of the examination is apparent: 'it is the individual as he [sic] may be described, judged, measured, compared with others, in his [sic] very individuality; and it is also the individual who has to be trained or corrected, classified, normalized, excluded, etc.' (Foucault, 1977, p. 191).

Hence, of the three instruments of disciplinary power it is in the examination that Foucault's notion of an entangled power-knowledge relationship is particularly pronounced. Disciplinary power is exercised in ways that construct, define, distribute, record, organise and act on knowledge about the individual with the explicit aim of shaping their conduct. Foucault (1977, p. 192) expressed this point in his summary of the examination, calling it an instrument which produces 'the individual as effect and object of power, as effect and object of knowledge'.

Panopticism

Foucault identified the panopticon as an architectural design and a system through which disciplinary power could be exercised with optimal efficiency. The concept of the panopticon was developed by philosopher Jeremy Bentham (1995) in the eighteenth century as a new architectural design for prisons. Drawing on Jean-Jacques Rousseau's ideas of a transparent society made 'visible and legible in each of its parts', Bentham introduced the notion of visibility via an overseeing gaze as the mechanism through which such transparency could be realised (Foucault, 1980b, p. 152) and 'a new mode of obtaining power of mind over mind in a quantity hitherto without example' could be achieved (Bentham, 1995, p. 31). Foucault described Bentham's panopticon as a system within which the gaze is endlessly vigilant, and inspection occurs continuously; in it visibility is a trap (Foucault, 1977). Its architecture is characterised by a circular enclosed space containing cells around its internal circumference and a central observation tower standing at its centre with an ability to see into every cell (Bentham, 1995; Foucault, 1977). Within the panopticon, individuals are confined within segmented cells arranged in a way that that prevents horizontal sight and interaction between prisoners. Each cell serves to fix each individual in place and enable their every movement to be supervised and recorded (Foucault, 1977). In such a design those within cells can always be seen yet are never able to see, not other prisoners nor the inspector in the tower watching them. Consequently, inmates remain perpetually unaware of whether they are actually being watched, yet the possibility of being watched is permanent. It is in this way that surveillance functions also as 'a system of permanent registration' (Foucault, 1977, p. 196). Individuals thus become the object of information through which they are thoroughly individualised and made continuously visible (Foucault, 1977). Thus, the primary effect of the panopticon is 'to induce in the inmate a state of conscious and permanent visibility that assures the automatic functioning of power' (Foucault, 1977, p. 201).

However, Foucault stressed that 'the Panopticon must not be understood as a dream building' or tethered to any specific application; it should be understood rather as a generalisable system through which disciplinary power is reduced and deployed in its optimal form: 'it is in fact a figure of political technology' (1977, p. 205). It is a system that, Foucault (1977) explained, exists in a variety of forms, yet maintains a functioning that locates bodies spatially, distributes individuals in relation to each other, and organises hierarchically in a way that arranges centres and channels of power. Furthermore, it is a mechanism, he asserted, that 'automatizes and disindividualizes power', that is, power is not reliant on a single person but instead is established via 'a certain concerted distribution of bodies, surfaces, lights, gazes' (Foucault, 1977, p. 202). The person who exercises power is irrelevant since any indiscriminate individual may act as overseer and 'operate the machine' (Foucault, 1977, p. 202). Consequently, panoptic systems may also be used for monitoring their own mechanisms (Foucault, 1977). This is because inspections can be performed by higher ranking officials at any time and used to judge 'how the entire establishment is functioning' including the director responsible for its administration (Foucault, 1977, p. 204). Here the director's position is transposed from watcher to watched. Inextricably linked to this particular manifestation of power is Bentham's principle that power should be visible and unverifiable (Foucault, 1977). In Bentham's panopticon, power is made visible through the appearance of permanent surveillance, yet at the same time, it is impossible for this to be verified, as inmates have no way of knowing if they are actually being surveilled (Foucault, 1977). Hence, panopticism produces an environment within which 'surveillance is permanent in its effects, even if it is discontinuous in its action'; its efficiency is perfect in that power continues to operate even when it is no longer exercised (Foucault, 1977, p. 201). At this point the individual becomes their 'own overseer, each individual thus exercising this surveillance over, and against, himself' (Foucault, 1980b, p. 155). Therefore, panopticism can be understood as a system based on a principle of surveillance which simultaneously serves as a site for the registration of knowledge through which the efficient exercising of power is achieved (Foucault, 1977, 1980b).

Summary

In this chapter I have outlined the way I used theoretical tools drawn from Foucault's work on power to interpret and explain the findings from this study. Principally, these theoretical tools derive from Foucault's broad notion of an analytics of power and are used

to understand how power manifests through ClassDojo and the practices employed through its use. I began the chapter by explaining that I have used Foucault's ideas about power because they provide a way to make the workings of power within and through ClassDojo visible. I then described using Foucault's notion of theory as a toolkit to develop a theoretical framework. I selected theoretical tools from Foucault's ideas that I deemed relevant and useful to understanding ClassDojo as a school discipline technology. I then explained the popular application of Foucault's ideas in education research, although I noted their underuse in classroom management and school discipline research and near absence in research on ClassDojo. The specific theoretical tools were then described including a set of general principles of power, disciplinary power and panopticism. Therefore, the theoretical framework described in this chapter has been developed and applied with the aim of interpreting and understanding ClassDojo in new ways, that is, where it intersects with school discipline and power.

Chapter 4: Methodology

Investigating the everyday and taken-for-granted practices of the social is where qualitative research is at its most powerful (Silverman, 2013). With this in mind, in this study I investigated the everyday and taken-for-granted practices and assumptions of school discipline. This chapter provides a comprehensive description of how I undertook this research, including the perspective from which it was approached, and in doing so makes visible my choices and my reasons for making them (Comber, 1996). I explicate the methodological approach, research design, specific methods used, and the implications of those choices (Mason, 1996). I also acknowledge my role in shaping the way I undertook this research. The chapter begins with a brief discussion of the theoretical terrain on which the study resides, followed by a description of the study's methodology and research design.

Central to this study is the notion of power and the extent of, and effects of, its implication in pedagogies and practices of school discipline and classroom management. A critical orientation equipped this study with the interpretive and explanatory resources to explore such issues productively. Critical research notably operates within an expansive field that includes a diversity of perspectives; however, all are unified by a concern with power relations (Cannella, 2016). Using 'the notion of theory as toolkit' (Foucault, 1980d, p. 145), I have used concepts and ideas from the work of Michel Foucault as theoretical tools to analyse power within this context. While Foucault was well known for refusing to label his work (Burrell, 1998), it clearly shared many characteristics with the broader critical project and has been recognised as making a significant contribution to the field (Wandel, 2001). Thus, the use of Foucault in this study allowed me to think about education differently (Ball, 2017), to think about classroom management, school discipline and education technology differently, particularly in terms that align with a critical orientation.

Indeed, theory occupies a central productive space within the methodological approach of this study. It was 'not simply adopted and applied' (Gulson & Parkes, 2010, p. 82), emerging in isolation to simply draw on at a later date as an ad-hoc analytical frame for the interpretation of data. Rather, an engagement with theory occurred regularly, mutually constituting the methodology and design as they evolved and developed (Gulson & Parkes, 2010); it did 'not precede it or proceed without it' (Walker & Thomson, 2010, p. 28). Thus, theory became 'part of [the] mental furniture' (Spivak, 2014, p. 77) with which I

approached the study; it permeated the way I thought about and did research, that is, my research practice.

Critical qualitative inquiry

The methodology informing this study's approach drew heavily from critical qualitative inquiry. Much like critical research in general, critical qualitative inquiry defies rigid containment by way of a single authoritative definition; however, all forms share an interest in addressing issues of power, inequality and injustice (Charmaz, 2017). Therefore, its utility for this study lay in its propensity to keep the spotlight on power relations, thus providing ways to uncover forces of hegemony and injustice, and challenge conditions that maintain the status quo (Crotty, 1998). These qualities and attributes of critical qualitative inquiry indicate its obvious alignment with the aims of this study, not least because it challenges the status quo as it relates to normative views of student behaviour and school discipline (Johnson & Sullivan, 2016b). Methodologically, this spotlight on power relations materialises via strategies such as bringing to the surface new ways of defining problematics, exposing concealed assumptions and questioning their validity, locating strategic points of intervention, offering alternative perspectives or interpretations, and moving beyond the limitations of statistics-based research approaches (Denzin, 2015). Such strategies provide the vehicle through which critically oriented research can make its contribution to knowledge.

The aim of this research is to investigate how and why teachers are using 'ClassDojo' in relation to school discipline practices. In particular, it aims to do this in such a way as to examine how power relations are implicated in ClassDojo's application. The study was guided by the following research questions:

1 How does ClassDojo shape understandings of student behaviour and school discipline practices?

2 How do teachers and schools use ClassDojo to manage student behaviour?

3 Why do teachers and schools use ClassDojo to manage student behaviour?

Usher (1996, p. 11) reminds us that 'any research that makes knowledge claims is implicated in epistemological questions', that is, questions linked to the meaning of research questions, the purposiveness of methodologies, and the interpretability of findings (Crotty, 1998). Indeed, in this study, such epistemological questions resided in its critical

orientation, including its methodological approach, critical qualitative inquiry. Therefore, as a matter of research quality, it must be made clear that the epistemological grounds on which this research was conducted drew from the critical tradition. It was on these grounds that the possibilities of this inquiry took life by shaping the way the world was viewed and made sense of (Crotty, 1998).

Research design

This study's research design consisted of two phases and incorporated a multi-method approach. The two phases aimed to address different research questions; therefore they were carried out with different purposes, and used data collection methods that were selected on the basis of their appropriateness for meeting such aims (see Table 1) (Mason, 1996; Punch, 2014a). Despite this differentiated approach the study maintained a cohesive quality through the complementarity of the phases, which were fastened to each other by the cognate research questions guiding their implementation.

Phase One aimed to address the first research question: How does ClassDojo shape understandings of student behaviour and school discipline practices? Phase Two was designed to address the second and third research questions: How do teachers and schools use ClassDojo to manage student behaviour? And, why do teachers and schools use ClassDojo to manage student behaviour?

Phase One and Two commenced in chronological order, however, Phase Two began before Phase One finished. Data were collected during both phases not in one dedicated block of time, but rather during sporadic and intense periods, often at opportune moments and over short blocks of time. Implementing the study design in this way resulted in a data collection process through which data collected via one method at times informed the collection of data in another. Consequently, data collection became more targeted and precise over time.

Determining which data collection methods to use was unavoidably tangled up with the study's broader design characteristics, including the theoretical and philosophical stances upon which it was developed (Silverman, 2017). Thus, methods were selected and deployed with the aim of maintaining an epistemic gaze suited to exposing relations of power and collecting data types that would complement each other. Consequently, four distinct yet interrelated methods of data collection were chosen: the walkthrough method, documentary research, unobtrusive online observations and semi-structured interviews.

Table 1 Research design

Phase	Research question	Method	Data source	Timeframe
Phase 1	RQ1. How does ClassDojo shape understandings of student behaviour and school discipline practices?	Walkthrough (of the ClassDojo platform) Online documentary research	The ClassDojo platform ClassDojo website content Media articles	2016–17
Phase 2	RQ2. How do teachers and schools use ClassDojo to manage student behaviour? RQ3. Why do teachers and schools use ClassDojo to manage student behaviour?	Online documentary research Online observations Interviews	ClassDojo website content Teacher and parent weblog posts Media articles Teacher instructional videos (YouTube) Education marketplace post School policies School communications Reader comments Teacher reviews of ClassDojo Teachers	2016–20

Participant selection

This study included one participant group, teachers, whose participation occurred via interviews. I used a purposive sampling strategy to select teacher participants based on their interest in, and experience with, ClassDojo (Punch, 2014b; Silverman, 2017). I initially recruited teachers through the social media platform Facebook. The recruitment strategy aimed to solicit South Australian teachers interested in the study from the closed Facebook group 'Teachers of Adelaide'. At the time (late 2018) the group had 9,500 members (Best & Krueger, 2004) therefore it was a significant source of local teachers from which to recruit participants. After receiving permission from the group's administrators, an invitation to participate in the study was posted on the group page (see Appendix E). However, the response from teachers to the invitation was somewhat modest. Eight teachers in total responded to the invitation. From the eight respondents two participants agreed to be interviewed. There were likely a range of factors that attributed to this low success rate, including:

- Poor timing: recruitment began in middle to late November 2018; however, most potential participants expressed a desire to cease communication over the summer teaching break and re-initiate it in the middle of January 2019. Three potential participants did not respond when re-contacted.
- Gatekeepers[4] barred access to two potential participants. The first instance involved a principal denying permission to conduct an interview with a teacher unless the teacher's identity was revealed. Complying with such a demand would have breached the potential participant's confidentiality. The second instance involved a principal that did not respond to my repeated attempts at communication.

I implemented an alternative recruitment strategy to acquire additional participants. A new relational approach to recruitment was applied which involved using my personal and professional connections within local education communities (Devlin, 2017). I used my connections to identify schools from which to recruit potential participants, as well as to initiate contact with school principals. Once contact had been established with a principal, I sought permission to recruit participants. I then made arrangements to distribute invitations to teachers within the school. Invitations informed teachers to make contact with me directly if they were interested in being a study participant. This strategy proved successful in attracting a further five interview participants.

In total, seven interviews were conducted with seven teachers. The seven teachers derived from six South Australian primary schools and taught a range of year levels from Year 1 through to Year 6. Six of the seven teachers taught in government sector schools, while one teacher taught in a Catholic sector school. Five of the seven teachers taught in metropolitan schools, while the remaining two taught in regional schools. The socio-economic status of the schools from which teachers derived ranged from very low to relatively high.

[4] I was acutely aware of the complexities associated with the role of school principals and how they might influence responses to my requests to conduct interviews with teachers, including the competing demands on teachers' time, prior experiences with researchers, time-related school priorities, context-specific factors, and more (Punch, 2014b).

Data collection

There was some overlap in when each phase was carried out. Phase One was started first; however, Phase Two began before Phase One had ended. In addition, the application of the three methods used during Phase Two overlapped markedly. Rather than occurring as a neat continuous process, as may be perceived from Table 1's lineal representation, individual methods at times were carried out simultaneously or alternately, or returned to toward the end of the data collection period. Likewise, data were collected not in a consistent and periodic manner, but rather during sporadic and intense periods, often at opportune moments and over short blocks of time. Adopting such an approach during Phase Two resulted in a data collection process through which data collected via one method at times informed the collection of data in another. Consequently, data collection became more targeted and precise over time.

The flexible application of methods, and adaptive collection of data described above unmasks the role 'opportunism' played in this research, particularly in relation to research methods (Holliday, 2007). Qualitative researchers typically avoid controlled settings due to their preference for studying phenomena in their natural setting (Bhattacharya, 2008). This preference requires them to capitalise on the settings, and data sources, that are available to them (Holliday, 2007). This opportunism in many ways guided the sourcing of data in this study. In particular, online data sources often provided opportune alternate sources of data to explore, thus resulting in a data set with an element of cultural boundedness through which data were connected in meaningful ways (Holliday, 2007). For example, the ClassDojo website contained links to relevant media articles, of which a selection contained links to relevant weblogs, some of which in turn linked to teacher instructional videos on YouTube. Such opportunistic events were common, and in some cases sources contained leads to multiple alternate sources.

The sources from which data were acquired included:

- the ClassDojo platform
- the ClassDojo website
- weblogs (teacher and parent)
- media websites
- school websites
- the Edsurge website
- YouTube

- interviewees (teachers).

The data collected from the above sources included perspectives from teachers, schools, parents and ClassDojo. Furthermore, such data were in many cases also able to be situated geographically. In this way it was possible to associate such data with specific national contexts. Thus, the data collected for this study could be identified as primarily deriving from Anglo-American countries including the United States, United Kingdom and Australia, but also included data that described how ClassDojo is used in countries such as South Korea and the United Arab Emirates.

Methods

Walkthrough

I used the walkthrough method to familiarise myself with ClassDojo's platform and its range of features and functions. The walkthrough method is a data collection method that enables researchers to explore and systematically document the interfaces and features of a platform (Dieter et al., 2018). Historically, it has been used to present and review software products (Dieter et al., 2018); however, more recently it has been repurposed by platform studies researchers as a data collection method (Decuypere, 2019). Its use as a data collection method in education research is rare and consequently it offers this study an element of methodological innovation. Data are collected by observing and documenting the process of manually navigating a digital technology (Hartong, 2021). This method is well suited to investigating the possible user practices of a particular platform (Dieter et al., 2018). By using the walkthrough method I was able to position myself as a ClassDojo user and explore its different interfaces and its potential uses (Hartong, 2021; Romito et al., 2020) for managing student behaviour.

I conducted an exploratory walkthrough of the ClassDojo platform to examine its main platform screens, features, how users are represented, how it provides information to users, and the type of actions it makes possible (Dieter et al., 2018; Hartong, 2021; Romito et al., 2020; van de Oudeweetering & Decuypere, 2019). The data I collected included observational notes and screenshots. The walkthrough method enabled me to reconstruct ClassDojo's operational possibilities in a manner that contextualised the data collected within the app's vision, operating model and governance, or in other words within the app's 'environment of expected use' (Light et al., 2018, p. 883). In this way, this method can be used to illuminate the relations of power that emerge from the intended uses of a

platform and critically examine its operations as a sociotechnical artefact (Light et al., 2018).

Online documentary research

Documents were used in this study to understand both how and why teachers and schools use ClassDojo to shape and govern the conduct of students, and in some cases also teachers. Documentary research is recognised as a powerful research method, and was utilised to collect a significant volume of data for this study (McCulloch, 2004). Choosing to use documents as a data source provided me with a readily accessible rich source of data of a variety of types and forms (Punch, 2014a). For example, the documentary data I collected included a range of perspectives and often provided rich descriptions of how and why ClassDojo had been used (Stake, 1995; Yin, 1994). Moreover, it proved to be a useful method for collecting data that contained insights into the way relations of power materialise through the use of ClassDojo (McCulloch, 2004).

Documentary data provided this study with a wealth of information about the construction of events around the use of ClassDojo and the reasons for the existence of such events (May, 2011). Concomitantly, it brought into view the social dimension associated with such events. As May (2011, pp. 191-192) explains, 'documents, read as the sedimentations of social practices, have the potential to inform and structure the decisions which people make on a daily and longer-term basis; they also constitute particular readings of social events'. Therefore, through documents this inquiry acquired evidence of continuity and change in educational ideals and practices related to the implementation of ClassDojo, which contributed to developing understandings about the influences ClassDojo is having on education (McCulloch, 2004).

In today's increasingly digitised and networked research environment, the assumed simple task of determining what a document is can be difficult and unclear (Scott, 1990). Therefore, to guide this somewhat complicated task of locating and collecting documentary data I used the following definition: a document is an item, including in electronic form, in which text or speech is the primary linguistic cultural artefact, yet may be present with other semiotic forms (Fairclough, 1995), such as graphics, created for the purpose of transmitting information (Grant, 2019). Documents can be produced by individuals, organisations and institutions (Grant, 2019; McCulloch, 2004; Plummer, 2001) and have been produced without any intervention by the researcher (Bowen, 2009; McCulloch, 2004).

A combined convenience and purposive sampling strategy was used for the collection of documentary data in this study. The convenience component confined the sampling of documents to those located within publicly accessible online environments, while the purposive component provided a set of parameters to focus the sample. These parameters were developed to align the search for documentary data with the purpose and context of the study (Punch, 2014b). The parameters focussed the search for documents to online settings and document types that were deemed likely to include data about ClassDojo and its use as a school discipline technology.

The data collected via documentary research is presented in Table 2 below.

Table 2 Documentary data collected

Document type	No.
ClassDojo website content	N/A
Teacher and parent weblog posts	34
Teacher instructional ClassDojo videos	19
Teacher communication through school websites	8
News articles	16
School policies or reports	33
School communications (newsletters, websites, handbooks)	31

Online documents can be an unstable source of data. Their digital nature presents an ever-present uncertainty around their future accessibility. This is because documentary data are often edited, corrupted or removed completely from their web-based location (Bowen, 2009; Hookway & Snee, 2017). Therefore, it was important to implement a strategy to ensure the online documents I collected remained stable, accessible and unaltered. The strategy involved manually saving each document as a text-based or video file (Hookway & Snee, 2017). I assigned unique document identification numbers to each document to enable the simple retrieval of specific documents when required (Grant, 2019). This strategy was not however applied to data collected from webpages on the ClassDojo website due to the scrolling nature of webpages. I used observation notes instead to secure data accessibility from this particular source.

Documentary data was the first type of data collected within this study and were initially subject to a process of analysis that differed to the thematic analysis I describe later in this

chapter. This early analysis was similar to 'a first-pass document review, in which meaningful and relevant passages of text or other data [are] identified' (Bowen, 2009, p. 32). The analysis occurred during the first few months of the study and was purposed with constructing a broad-brush understanding of ClassDojo as a company and educational technology. The documents I analysed included the ClassDojo website, the company directory website Crunchbase, the app market data website App Annie, and a small number of media articles. More specifically, this early analysis provided me with an understanding of the contexts within which ClassDojo was being used (Bowen, 2009). This analysis also helped to form a socio-historical and socio-technical background within which to situate ClassDojo and further develop the study. Furthermore, it moved beyond the confines of providing a contextual frame, to also bring early attention to a number of salient issues that I investigated later in this study (Bowen, 2009).

Data collected from two distinct types of documents, media articles and weblogs, led to the addition of another source of data used in this study, reader comments. Selected media articles and weblog posts contained large volumes of reader comments, including many from teachers and parents. An inspection of these teacher and parent comments revealed that a considerable number described how ClassDojo was being used, and why teachers were using it. In this way I adapted and evolved my data collection approach (Markham, 2018) to include a source of data that presented itself as useful to the aims of this study.

Unobtrusive online observations

Unobtrusive online observations were used in this study to understand how and why teachers use ClassDojo to shape and govern the conduct of students. Observation is a common method used in education studies (Punch, 2014a) which involves collecting data through describing observable human experience, including conversations and interpersonal interactions (Patton, 2002). For this study, however, I adapted this definition to include observations of human experience in online environments. The observations I undertook were unobtrusive in nature, that is, they were observations in which I as the observer 'play[ed] an unobserved, passive and nonintrusive role in the research situation' (Webb et al., as cited in Lee, 2000, p. 33). This approach to observing enabled me to capture as data social phenomena that occurred through processes of online communication (Norskov & Rask, 2011).

I carried out observations of comments made by readers and users engaging with the content of news webpages, weblogs and an education technology conference webpage

(Diakopoulos & Naaman, 2011; Tsatsou, 2014). Online comments located in communication media are rarely used as a form of data yet are a rich source of empirical qualitative information (Henrich & Holmes, 2013). They provided this study with a source of data that was entirely user driven and authentic because they reflect matters relevant and important to the individuals who produced them (Henrich & Holmes, 2013). As a result, the observational data collected during this study provided valuable insights into teachers' and parents' opinions, attitudes, beliefs and actions related to ClassDojo (Henrich & Holmes, 2013).

A summary of the data collected using unobtrusive online observations is presented in Table 3 below.

Table 3 Observational data collected

Source	Comment type	Number	From # documents
News articles and weblog posts	Teacher reader comments	145	28
	Parent reader comments	72	14
Edsurge education technology conference webpage	Teacher review comments	55	1

The selection and sampling of readers' comments as data involved examining documents that had already been collected and conducting a new internet search for news articles and weblogs that contained relevant reader comments. I used the Google search engine news feature to look for news articles about ClassDojo. I used the search terms 'ClassDojo' and 'behaviour' to focus and narrow the search results. Similarly, I used Google's default search engine to search for weblog posts about ClassDojo. This time I used the key search terms 'teacher ClassDojo blog' to focus and narrow the search results. I trawled the search results for both news articles and weblog posts to identify relevant documents and examined each of these for the existence of relevant readers' comments.

I saved in a Word document all comments that were relevant to the study's research questions. This approach ensured not only that relevant comments were saved, but that the contexts within which comments existed were preserved. Such a practice was crucial to the ability to make sense of these comments during analysis. Lastly, stored comments sections were thoroughly inspected and those deemed relevant were marked for efficient retrieval during analysis.

Early analysis of the observational data that was collected furnished insights into emerging patterns and themes associated with how and why teachers were using ClassDojo. Where relevant, such insights informed the semi-structured interviews (Miles et al., 2014). This synthesis of ideas into the data collection process strengthened the connection between data collected through different methods and established a continuity across the data collection process as a whole.

Semi-structured interviews

Semi-structured interviews were used in this study to understand how and why teachers were using ClassDojo for school disciplinary purposes. I interviewed seven teachers. The interviews enabled me to collect data related to teachers' perceptions, experiences, reasons for acting in particular ways, and reconstructions of specific events related to their use of ClassDojo (Punch, 2014b; Rubin & Rubin, 2004; Silverman, 2017). In this way, interviews provided a way of capturing the experiences and knowledge of teachers in their own terms. However, perhaps of most importance was the capacity the interviews provided for collecting data that were imbued with a depth and richness inescapably entwined with the contexts from which they emerged (Jones, 1985; Labuschagne, 2003).

While interviews afforded this study with an important source of data, it is important to recognise that the data produced through them are subject to a range of influencing factors, such as 'political considerations, impression management, [and] the operation of discourses constituting subjects and governing their responses' (Alvesson, 2011, p. 4). This recognition does not devalue interview data; rather, it simply demands the consideration of such factors. Therefore, to address such factors in this study I applied a range of theoretical viewpoints to support the critical judgement and robust interpretation of interview data and considered interview data not in isolation but together with other forms of data (Alvesson, 2011).

I used semi-structured interviews to guide discussion and to collect data that aligned with the study's purpose yet allowed for the exploration of unexpected or intriguing topics as they arose (Punch, 2014b). I used a set of pre-prepared thematically arranged interview questions to guide the interviewing process (see Appendix B). However, I applied them with an element of flexibility. This flexibility included changing the ordering of questions during interviews to follow conversational shifts, including or excluding questions when relevant, and the gradual evolution of the questions used within interviews in a manner that reflected my growing understandings of ClassDojo and the contexts of its use.

Prior to the interviews, I provided the interviewees with a concept map which outlined the general topics to be covered (see Appendix C). Providing interviewees with a concept map offered them the opportunity to prepare for the interview. I also afforded interviewees the opportunity to choose the interview location, with most teachers choosing to be interviewed in their school or classroom. Due to one interviewee residing in a rural location one interview was conducted online using Skype. All interviews were audio recorded and transcribed. All transcripts were sent to interviewees for an opportunity to verify the transcript's content and accuracy.

To enhance the data-collecting capacity of interviews, I also carried out post-interview observations. Guided by a post-interview observations framework (Patton, 2002), I recorded observations by reflecting on the interviews immediately following their completion (see Appendix D). Such observations supported the later analysis of the interview data by providing increased detail and accuracy to the interview data. As a result, a form of data with increased rigour and validity was produced (Patton, 2002).

Data analysis

In this study I applied a hybrid iterative inductive-deductive approach to thematic analysis (Fereday & Muir-Cochrane, 2006; Tracy, 2013). This reflexive method of analysis involved a process of shifting back and forth between combing through the data and engaging with theory and literature. I analysed the data by searching for emerging insights and meaningful patterns and relationships within it in a way that progressively led to a refinement of focus and understandings (Labuschagne, 2003; Punch, 2014a; Srivastava & Hopwood, 2009). My analysis of data was thus a meaning-making process through which I progressively transformed my raw data into understandings of how and why ClassDojo is used to address student behaviour in schools (Punch, 2014a; Srivastava & Hopwood, 2009). In applying this iterative analysis, I alternated between undertaking inductive emergent readings of the data, and deductive readings that drew from the theoretical and conceptual frameworks underpinning the study (Tracy, 2013). This approach enabled me to inhibit the potential problem of excess data by sharpening my analytical focus (Tracy, 2013) and engaging with my emerging map of data in a dynamic and flexible way (Miles et al., 2014). Moreover, it encouraged me to engage reflectively with the broader study design, interests and purpose, to ensure my analysis remained aligned to them in its treatment of the data (Tracy, 2013).

The data analysis carried out within this study was as a process that extended beyond matters of how data are managed, handled and represented, to one that also involved their interpretation and engagement with theory (Bathmaker, 2010). Through a fusion of the above elements it became possible to connect this inquiry to broader social and educational issues (Winkle-Wagner et al., 2018). That is, it became possible to bring into view and connect the data with the workings of power and practices of control residing within issues of contemporary education (Jupp & Norris, 1993).

Coding

The initial inductive approach to code development involved coding a sample data set by scanning it for emergent meaningful segments of data (Miles et al., 2014). I critically examined, synthesised and refined the codes by organising and arranging them into relational groups to form categories and broader themes (Hodgetts & Chamberlain, 2013; Tracy, 2013). However, this initial attempt at organising and making sense of codes proved particularly challenging. While the coding process produced an expansive array of codes related to the research questions, viewed wholistically they lacked strong conceptual and structural unity (Miles et al., 2014). To improve the code set I repeated the above process twice with the same data sample; however, I adjusted the process to incorporate deductive elements into the approach. The deductive adjustment enabled a coding process that paid closer attention to data connected to theoretical constructs such as surveillance and datafication, as well as maintaining a focus on data related to the study's research questions. The theoretical and conceptual guidance provided by this adjusted coding approach helped both explain and theorise the data (Tracy, 2013) and provided an increased conceptual and structural unity across all codes (Miles et al., 2014). Following the third iteration of this coding process, the codes took on a more cohesive quality. In other words they were more closely related. I then organised the codes into a unified coding framework that included both data-driven and theoretically driven coding categories and themes (Miles et al., 2014) that were central to addressing the research aims (Hodgetts & Chamberlain, 2013). I tested the coding framework by using it with different data to evaluate its applicability to the broader dataset (Miles et al., 2014). The nature of coding frameworks, however, demands they undergo periodic revision and ongoing adjustment; therefore, the framework continued to evolve over time via the addition, removal and breaking up of codes when it was deemed necessary (Miles et al., 2014).

I created a codebook to document the core aspects of the coding framework and help guide analysis. The codebook contained lists of key codes, definitions of codes, and illustrative examples of coded data (Tracy, 2013). Functioning as a legend for the dataset, the codebook helped to meet the challenge of grappling with a significant volume of qualitative data (Tracy, 2013). In addition, as the coding became more focussed the codebook also functioned as a tool through which to document its evolving form, and its most current iteration. Documenting such changes ensured the coding remained consistent with the evolving coding framework and provided a reference source of updated codes that I referred back to during the coding process.

Following the development of both the coding framework and codebook, I transferred the data and codes to the qualitative analysis software NVivo 12. I used NVivo 12 to support the process of data analysis by using it to code, organise, link, search and display data (Flick, 2014). I also used NVivo 12 to manage the ongoing development of my coding framework, as the inclusion, removal and rearrangement of codes could be carried out electronically and with ease. Similarly, it provided an efficient and effective tool for the un-coding, recoding and linking together of codes and data.

Analytic memoing

Analytic memoing occurred in conjunction with the coding process, equipping this study with an additional strategy through which to analyse and interpret data. Through analytic memos I recorded the thoughts, ideas and questions I had about codes and the relationships between them (Thornberg & Charmaz, 2013). I used this process to engage deeply with and make sense of my data through what has been described as a form of internal analytical conversation (Clarke, 2005; Miles et al., 2014; Thornberg & Charmaz, 2013). This engagement proved productive in a range of ways, such as detecting gaps in my coding framework, generating potential issues for further investigation, and recording emerging new ideas, themes and concepts (Miles et al., 2014; Thornberg & Charmaz, 2013). Ultimately, analytic memos served as a key intermediary step between the coding of this study's data and writing the analysis (Tracy, 2013).

I documented analytic memos within NVivo 12 rather than embedding them into transcripts and other data (Miles et al., 2014). Choosing this method of memoing meant all memos possessed a date and title, and in some cases a description or link to a segment of coded text (Miles et al., 2014). Furthermore, it enabled me to retrieve them efficiently

when necessary, and created a running chronological record of analytical thought attached to relevant coded data (Miles et al., 2014).

Limitations

As is the case with all research, this study too has operated within limits, two of which I acknowledge here. Firstly, due to the data collection methods that were used, the findings were limited to what could be discerned from data representing the perceptions and perspectives of people and institutions. The decision to focus on such data provided a range of important benefits; however, it inevitably also placed limits on the type of knowledge the study could produce. As such, this study's findings are largely based on data comprised of descriptions provided by teachers, schools, parents and those representing ClassDojo itself regarding how and why ClassDojo is used. They are not based on observations of what teachers did when they used ClassDojo (Punch, 2014a). Therefore, this study was unable to examine the ways teachers used ClassDojo from observations of them using it, or compare what teachers did with the way they described doing it (Kawulich, 2005; Pole & Morrison, 2003).

The second limitation concerns the international contexts to which the findings of this study relate. While the data in this study included descriptions of ClassDojo, and its use, from teachers, schools and parents from a number of countries, most can be described as deriving from an Anglo-American context. While there were exceptions to this contextual homogeneity within the data set, such data were rare. Consequently, the findings produced by this study can be said to reflect the views and practices of teachers within schools and education systems from Anglo-American contexts. Takayama and Lingard (2019) have demonstrated the differences that can exist between Anglo-American contexts and other national contexts, in their case Japan, in relation to views about, and practices involving, data. Therefore, the understandings from the findings of this study are limited to an Anglo-American context.

Rigour

Guiding the application of research rigour and trustworthiness in this study has been Morse's (2015, 2018) research on rigour in qualitative inquiry. I have drawn on both her framework for building rigour into qualitative inquiry, and her critical analysis of strategies used for achieving rigour. Morse advocates using strategies that are built into the core research procedures that act as self-correcting mechanisms which secure the

quality of the project (Morse et al., 2002). Such strategies compel 'the researcher to correct both the direction of the analysis and the development of the study as necessary, thus ensuring reliability and validity of the completed project' (Morse et al., 2002, p. 17). This section outlines the three strategies applied to this research to enhance its quality by embedding within it processes of rigour.

Methodological triangulation

Methodological triangulation provided this study with a strategy that enhanced its validity (Morse, 2015). While a methodological triangulation strategy can take two different forms, in this study it is understood as the use of several methods for the purpose of providing more than one perspective to understand a research problem or answer a research question (Flick, 2018; Morse, 2015). This strategy became embedded within the broader research approach when I decided to use a multi-method data collection strategy. I implemented this strategy by combining methods that opened up different perspectives:

- The walkthrough method opened up the technical dimensions of how ClassDojo functions.
- Documentary research provided the perspective of schools and the structural elements they apply, as well as the perspective of ClassDojo and teachers.
- Observation opened up perspectives on knowledge and practice from teachers and parents produced in a naturalistic interactive context.
- Semi-structured interviews unveiled the expert knowledge, practices and everyday experiences of the teacher research participants. (Flick, 2018)

Thus, the knowledge produced through each of the above methods was used to confirm results that came out of the other methods (Flick, 2018). Moreover, using multiple methods provided a way of discerning how and why ClassDojo was being used in a more comprehensive way than would likely have been possible through a single method (Flick, 2018).

Collecting and analysing data concurrently

An iterative interaction between collecting and analysing data was conducted in this study, which brought into focus what was known and what still needed to become known (Morse et al., 2002). For Morse et al. (2002), this iterative process is the essence of attaining reliability and verifying one's research. In practice, this process was carried out periodically once the collection of data began. Moreover, it manifested in decisions such as deciding

to collect a greater volume of a certain type of data that was deemed insufficient, regularly evaluating data for their potential to answer the study's research questions, and returning to key literatures to ensure a congruence remained between the theory being used, data being collected and analysis being applied.

Peer review

Peer reviewing is a strategy that supports the conceptual development of a study and prevents researcher bias (Morse, 2015). Early in the study I presented the interim findings to colleagues in a variety of settings to aid in the conceptualisation and abstraction of the data (Morse, 2015). The settings including local and national conferences, and a peer-reviewed journal (via a published peer-reviewed article). As the study progressed, these presentations assisted in identifying rough spots, developing the theory and linking to the research of others (Morse, 2015). Such presentations occurred with local and international researchers with extensive experience researching in fields related to the topic of this study. The presentations typically included information related to the research problem, methodology, theory and findings of the study.

Ethical considerations

Research ethics is comprised of a complex body of knowledge, developed to support and guide research practice from planning through to following up research (Punch, 2014b). Such knowledge derives from both institutions and the personal which combine to ultimately govern the specific applications of research ethics. I aimed to address the ethical demands of both the personal and institutional through undertaking research that was sensitive to the rights and values of both the participants and the researcher, finding a balance between protecting participants from harm and considering the potential benefits of the research (Eynon et al., 2008).

Three separate institutional human research ethics review committees gave approval for this study: the University of South Australia Human Research Ethics Committee, the South Australian Department of Education and Child Development, and Catholic Education South Australia. In addition to meeting the ethical standards of institutional review committees, it has also been subject to the personal ethical work I have undertaken as a researcher, work that involved principled deliberation and engagement with salient moral issues connected to the research activity of this study (Punch, 2014a). Specifically, I sought

to minimise and mitigate risk to individuals associated with collecting data in online environments (Silverman, 2017).

Confidentiality

Confidentiality within this study related to three main themes: (1) protecting participants from harm; (2) issues of participant privacy; and (3) ethical standards (Baez, 2002). I applied a variety of strategies to meet these concerns, one of which was the preservation of participants' anonymity (Wiles, 2012). Broadly, anonymisation strategies involved the removal and management of information from data deemed likely to reveal the identity of participants (Punch, 2014a; Saunders et al., 2015a). I use the term participants in this context very broadly to include those who were unaware that they were the subjects of research, for example, authors of reader comments (National Health and Medical Research Council et al., 2007). Specifically, the strategies used included:

- the use of pseudonyms,
- the deletion of personal information,
- generalising geographical information to a state level (e.g. South Australia), and
- replacing personal information with generic terms (Hammersley & Traianou, 2016; Punch, 2014a; Saunders et al., 2015a; Wiles, 2012).

In addition to the above anonymisation strategies, the implementation of the following measures and strategies also safeguarded participant confidentiality:

- Interview audio files were destroyed following the completion of the study.
- The pseudonym key was deleted on completion of the study.
- Secure data storage practices were established.
- Access to data was restricted to the researcher alone.
- A data management plan was formulated and followed. The plan outlined a clear and systematic procedure for reducing the risk involved with data handling (see Appendix F) (Hammersley & Traianou, 2016; National Health and Medical Research Council et al., 2007; University of South Australia, 2016).

Informed consent

Informed consent is a normative construct in research ethics, and a common protective device applied to studies involving human participants (Duncan & Watson, 2010). However, with the rise of internet research, it has been argued that in some cases special

considerations are applicable to researching in online environments, including those related to informed consent (Eynon et al., 2008). Therefore, in this study the application of informed consent was confined to interview participants (teachers), school principals and 'Teachers of Adelaide' Facebook group administrators (see Appendix G).

Participant information sheets were provided to potential participants prior to the provision of consent forms. Participant information sheets informed participants about the study and what would be expected of them if they chose to participate. Those who subsequently chose to participate were then sent an electronic consent form written in plain language. The participants provided consent by signing and returning the electronic consent form, either by email or in person. The type of consent I refer to here is known as 'process consent', which allows 'participants to withdraw their consent at any time' (Silverman, 2017, p. 64).

Ethical considerations specific to internet research

Conducting research and gathering data that exists in online environments raises a number of ethical considerations that require careful deliberation (Silverman, 2017). Of particular relevance to this study are those concerning notions of public/private spaces in online environments and their interaction with the collection of data through unobtrusive observation and the necessity, or not, of acquiring informed consent.

Conceiving clear notions that delineate public and private space within online environments is a contested topic that is subject to much debate (Bruckman, 2002; Yadlin-Segal et al., 2020). In fact, categorising online environments within such 'a clearly recognizable binary no longer holds in everyday practice' (Markham & Buchanan, 2012, p. 7). Thus, it is more appropriate to think of online environments as existing along a public–private continuum upon which an environment's purpose becomes a critical factor. Viewing online environments in such a way requires an approach that is sensitive to variable online contexts; in other words, research decisions within online environments should be context dependent (Eynon et al., 2008). Drawing on Nissenbaum's (2009, p. 129) concept of 'contextual integrity' is useful here, particularly in relation to the idea of privacy, and she makes the point that people's expectations of privacy over the flow of information 'are systematically related to characteristics of the background social situation'. Therefore, considering the context within which the observational data collected in this study was drawn, online news and weblog comments sections, and the purposes which such environments serve, mass (public) communication (Bromseth,

2002), an expectation of privacy may not exist. Indeed, the way such spaces function aligns closely with Habermas' (1974, p. 49) notion of 'the public sphere', in which he outlined that 'Citizens behave as a public body when they confer in an unrestricted fashion – that is, with the guarantee of freedom of assembly and association and the freedom to express and publish their opinions – about matters of general interest.'

Observational and specific forms of documentary data collected within this study emanate from such activity and belong to what in many ways can be understood as a virtual public sphere, a public context designed for people to discuss and debate ideas (Livingstone & Lunt, 1994). Despite the rapid technological change society has experienced since Habermas' conception of the public sphere, its utility remains, so much so that it is the 'dominant normative framework in studies evaluating discourse in [online] comment sections' (Toepfl & Piwoni, 2015, p. 467).

Therefore, in relation to the questions raised by these issues of research settings, data collection, privacy and informed consent, I took 'a middle ground approach in addressing them … not "anything goes" but also not a set of prescriptive rules that fail to account for contextual factors related to the data source' (Saunders et al., 2015b, p. 126). In accordance with this approach, I chose not to seek informed consent when collecting data from online environments. Yet, from a personal moral standpoint, I took steps to protect and maintain the confidentiality of comment authors linked to that data by 'deleting names and other highly identifiable information from the dataset when storing and processing the data' (Franzke et al., 2020, p. 10). In addition, seeking informed consent from authors of online comments who use pseudonyms is an added practical barrier. Some researchers have described acquiring informed consent from participants within such contexts as infeasible (Franzke et al., 2020; Markham & Buchanan, 2012). Locating and contacting authors of comments becomes near impossible because of issues such as the instability of online archived material and anonymised author names (van Schie et al., 2017). Finally, the relatively benign nature of the data collected was also taken into account, and contrasted against its potential to generate new knowledge and foster debate (Eynon et al., 2008). I aimed here to strike a balance between the rights of those from which the data were derived and my right as a researcher to pursue knowledge (Eynon et al., 2008).

Summary

In summary, this chapter described the methodology and research design that were adopted for this study, and in doing so aimed to justify the choices that were made. The

study's methodological approach drew heavily from critical qualitative inquiry, combining it with a multi-method research design conducted over two phases. Its critical orientation and associated epistemological foundations were situated as guiding reference points for many of the choices that were made and maintained the study's focus on issues of power. The first and second phases of the study answered different research questions, with the research conducted during Phase One informing the research performed in Phase Two. Four data collection methods were used: the walkthrough method, documentary research, unobtrusive online observations and semi-structured interviews. The data produced through such methods were analysed using a hybrid thematic analysis approach.

Chapter 5: Phase One findings – Shaping understandings of student behaviour and school discipline practices

In this chapter I report and discuss the findings from Phase One of this study regarding the ways ClassDojo shapes understandings of student behaviour and school discipline practices. In doing this I attend to research question one: *how does ClassDojo shape understandings of student behaviour and school discipline practices?* These findings report on data collected through a walkthrough of ClassDojo's platform and online documentary data. In this way, the findings focus on representing ClassDojo's operational possibilities as a school discipline technology or, as Light et al. (2018, p. 881) put it, ClassDojo's 'environment of expected use'.

The presentation of this chapter however departs from the conventional form, and the structure of other chapters in this thesis. It is not presented as a conventional findings chapter but rather, is presented in the form of a published peer-reviewed journal article.[5]

> Manolev, J., Sullivan, A., & Slee, R. (2019). The datafication of discipline: ClassDojo, surveillance and a performative classroom culture. *Learning, Media and Technology*, *44*(1), 36–51. (123 Google Scholar citations to-date:)

The article presents an account of the research conducted during Phase One of this study. I use the Foucauldian theoretical framework described in Chapter 3, and the literature on school discipline, education technology and governing by numbers to make sense of and explain the findings in this chapter.

The main findings from Phase One of this study are not presented explicitly within this article, which is presented as a chapter, but rather, are conveyed implicitly throughout its content. In summary, the Phase One findings showed that ClassDojo shapes understandings of student behaviour and school discipline practices through:

a) its datafication processes which construct behaviour reductively in quantified and hierarchical terms and promote a data-driven approach to school discipline,

[5] A small amount of content has been removed from the introduction section within the article to enhance the coherence of the thesis narrative and avoid unnecessary repetition.

b) its reliance on surveillance processes which promote the use of surveillance as a tool for disciplining and governing behaviour, and
c) the behaviouristic logic which underpins its features and functions.

The chapter begins by describing the context within which ClassDojo has emerged and explaining how the Phase One research was conducted. It then discusses ClassDojo's increasing presence in schools, how the platform's features function, and its uncritical adoption by teachers and schools. Throughout the chapter I argue that ClassDojo's design promotes a form of school discipline that is behaviouristic in nature, surveillance-oriented, and depicts students and their behaviour in performative terms[6].

The datafication of discipline: ClassDojo, surveillance and a performative classroom culture

Introduction

Education is increasingly shaped by digital technologies (Selwyn, 2017), providing schools and educators with opportunities to understand and approach educational issues in new ways. The current techno-friendly obsession within education encourages the prolific spread of such education technologies, resulting in their infiltration into people's everyday lives (Boninger & Molnar, 2016). In recent decades, this pervasive infiltration of education technology has intensified the datafication of education, producing a vast assortment of data forms to interpret and understand (Cukier & Mayer-Schoenberger, 2013; Selwyn, 2015) including data associated with classroom management and student discipline. Datafication is a complex process one in which the significance of data is raised in such a way as to influence the practices, values and subjectivities in a setting (Bradbury, 2019a). Understanding what is meant by the term datafication is critical to the position of this paper; therefore, drawing on Mayer-Schönberger and Cukier (2013) we define datafication as the conversion of social action into quantifiable data in a manner that enables the tracking of people in real-time. However, this definition does not recognise the role of power within the datafication process. Therefore, we argue that datafication should also be understood through a lens of power, making visible the ways in which power is implicated in decisions such as what constitutes and is selected as data, who controls it,

[6] Please note: This chapter was co-authored so it changes from 'I' to 'we'. However, I was the main author of this paper.

who can alter it, how it is interpreted, and what purpose it will serve (Bradbury & Roberts-Holmes, 2017).

In this paper, we critically examine ClassDojo as a classroom management and communication platform. Despite ClassDojo's popularity, a scarcity of research has investigated the ways in which it is used and how it is influencing education, particularly at the level of the school and classroom. We draw on publicly available online material as a data source for this study. First, we undertake a brief theoretical exploration of the ideas we use to understand ClassDojo, and identify that schools are increasingly using data and surveillance to track and monitor students. Then we describe the speed and volume of ClassDojo's uptake, and explain why it is so appealing to educators as a rationale for its uncritical adoption, and how it works. We then shift the focus to problematise the uncritical uptake of ClassDojo as a school discipline tool. Examining ClassDojo using the concepts of surveillance and performativity we identify how the datafication of school discipline and student behaviour is implicated in both. Within this analysis, we describe how ClassDojo is influencing educational processes related to the discipline, management and measurement of students, the way in which teachers understand students and the way in which students understand themselves.

We argue that ClassDojo is a school-based technology of surveillance encouraging teachers to enact disciplinary practices underpinned by behaviourist principles that require intensified monitoring of students (Watters, 2017a; Williamson, 2017b). Moreover, we contend that ClassDojo's application in schools is part of, and contributing to, the expansion of established surveillance trajectories within contemporary education (Taylor & Kearney, 2018). Behaviourism, in simple terms, is a behavioural learning theory that promotes the use of rewards and punishments to modify behaviour (McEwan et al., 1999). This new data-based variation on behaviourism relies heavily on compliance techniques, while creating a performative classroom culture in which students are reconstructed as statistical data representations of normalised culturally produced behaviours. This reduction of students to data points based on the performance of behaviour facilitates data-driven techniques of governance that function through the classification, ranking and comparison of students. Furthermore, this process encourages a view of behaviour that is decontextualised and situated entirely within the student, possibly producing flawed behavioural data. Lastly, we argue that the construction of student identities is influenced by the creation of a performative classroom culture in which behaviour quality

is framed against numerical parameters of behavioural success (Keddie, 2016; Nairn & Higgins, 2007).

The growing use of data and surveillance in schools

To understand surveillance in schools it is useful to refer to Foucault's (1977) ideas related to disciplinary power, in particular its relationship with the process of datafication, and how technological advancement has impacted educational practices in these areas. Foucault's ideas have been largely neglected in educational technology scholarship, therefore, they offer an atypical approach to critically engaging with the introduction of data and surveillance oriented educational technologies in schools (Hope, 2014). To briefly step away from the individualised and granular focus of disciplinary power, we first situate schools and the disciplinary mechanisms they deploy within Foucault's concept of governmentality. According to Foucault, governmentality is the 'ensemble formed by institutions, procedures, analysis and reflections, calculations, and tactics that allow the exercise of a specific and complex power that has the population as its target' and functions through technical instruments he refers to as apparatuses of security (Foucault, 2007, p. 108). As apparatuses of security, schools are instrumental to governing the population. To this end, schools function as mechanisms of social control, using techniques of normalisation that serve the broader political strategy (Foucault, 2007) of securing the productive capacity of the future citizenry. Importantly, the surveillance, categorisations and data-based calculations that serve disciplinary power's purpose of producing specific individuals, may be simultaneously acquired in support of this broader objective (Ball, 2013).

From its inception the 'school' has been a data-rich site of surveillance, architecturally designed to reflect the panopticon, in which hierarchised surveillance practices are deployed as a disciplinary mechanism (Foucault, 1977) of control. Hierarchised surveillance in this context can be thought of as a system of observation featuring a ranked ordering of watchers and watched. Power is exercised through this ranked observational process, establishing an efficient system of surveillance that produces a totalising method of supervision. Foucault describes hierarchised surveillance as an instrument responsible for the success of disciplinary power. It is: 'An apparatus in which the techniques that make it possible to see induce effects of power, and in which, conversely, the means of coercion make those on whom they are applied clearly visible' (1977, pp. 170–171).

Hierarchised surveillance enacts the school's disciplinary purpose, entrenching distinctly unequal distributions of power and rendering students visible through a range of coercive methods. Data occupies a central role within these techniques. The techniques are embedded throughout the system, existing in a multitude of forms including student testing and classification, and involve data recording, storing and analysing processes. Historically, early technology development introduced new efficiencies but still often required manual, time-consuming processes. Yet, over time steady technological advancement and a growing valorisation of data in education has seen the production of new technologies designed to increase the effectiveness, efficiency and productivity of surveillance and data-related capabilities in schools. This intensification is exemplified by the infiltration into schools of CCTV networks (Hope, 2009); adaptive learning technologies that record students' key-strokes, answers and response times (Boninger & Molnar, 2016); student drug testing systems (Taylor, 2018); biometric tracking (Nemorin, 2017); data-driven decision-making tools for teachers (Jarke & Breiter, 2015); national and international school performance assessments (Hardy & Lewis, 2018); emergent screen capture technology (Pinkerton, 2017); and behaviour tracking and management technologies like ClassDojo. This list barely scratches the surface of surveillance and datafying practices used within education; however, it is illustrative of the extent to which practices are used within contemporary education to track and monitor students.

The rise of ClassDojo as an ed-tech success

The company behind ClassDojo is a model of entrepreneurial success, winning awards and recognition from the US business sector for being a leading technological innovator. Software developer Class Twist, which operates under the name ClassDojo, is its creator. Located in California's high-tech Silicon Valley, ClassDojo has emerged from the highly competitive $8.38 billion ed-tech industry (Richards & Stebbins, 2014) to produce one of the most globally successful education technologies (Williamson, 2017b).

A milestone timeline on the company's website reveals the extent of its remarkable growth and expansion from its earliest manifestation in 2011, primarily as a behaviour management tool. Starting with 80 users in its first week, by week ten the number of teachers signed up had increased to 35,000. Late 2012 and early 2013 witnessed the launch of ClassDojo on Apple iOS and Android respectively, opening up the prospective user base significantly. Considerable funding investments, as listed on the Crunchbase website, of $8.5 million in 2013, and $21 million in 2016 provided financial support for the company to

continue product development and growth. These significant funding investments are a critical aspect of ClassDojo's continued operations and growth, as at the time of writing they are its sole revenue source due to the company's commitment to remain a free technology for teachers' to download and use. In 2015, ClassDojo launched 'Translate', a new feature enabling the translation of messages into more than 35 different languages, likely a response to the transnational appeal and adoption of the software, and a strategic move to embrace a globally expanding user base. According to ClassDojo co-founder and CEO Sam Chaudhary, adoption of the technology in Vietnam and Turkey has been impressive, and its spread into China and India indicates potential future market success in Asia (Hess, 2015). The company promotes its product and engages with users in part through social media platforms like Facebook, with national-based ClassDojo community group pages set up to support and connect users across the globe, some of which hosting more than a thousand members. By 2016, ClassDojo had developed a partnership with Stanford University's Project for Education Research that Scales, delivering educational content focused on the concept of 'growth mindset' to students. In the same year the company claimed two thirds of US schools were actively using ClassDojo in classrooms, its reach extended into 180 countries worldwide, and more than three million teachers and 35 million children had signed up and were using the platform (Williamson, 2017c). ClassDojo is targeted toward, and according to its website, predominantly active in K–8 schools. It is difficult to determine if ClassDojo's claims regarding user statistics are accurate due to a reliance on self-generated data (Watters, 2017a), however independent data associated with app downloads provides at minimum an indication of how widespread ClassDojo's reach may be. According to leading mobile app analytics company App Annie (Clancy, 2015), as of November 2018 ClassDojo is ranked within the top ten downloaded education apps on iPhones in the US (App Annie, 2018). Furthermore, according to metrics provided by Cruchbase in November 2018, ClassDojo's apps (ClassDojo, ClassDojo Messenger and ClassDojo for Students) had been downloaded 969,409 times in the previous month (CrunchBase, 2018). Therefore, despite ClassDojo's uncertain self-reported statistics the company has clearly expanded its reach over time, and is clearly a popular technological tool within education. The proliferation of ClassDojo into classrooms around the world has occurred within a six-year timeframe, suggesting its spread is unconfined by geographical borders and impervious to the typical bureaucratic gatekeeping processes of national education systems.

How does ClassDojo work?

At its inception, ClassDojo was a tool that digitised and datafied student behaviour and the process by which teachers sought to condition that behaviour. Its primary function was to provide teachers with a way in which to track student behaviours and provide immediate feedback to students about behaviour. Its functionalities introduced new data-driven possibilities for teachers, equipping them with a tool that automatically generates individual student and whole-class behavioural data records, and an ability to respond in real time, on the move and from any location to student behaviour. Theoretically, ClassDojo draws on a logic of behaviourism to influence student behaviour. Students are reinforced with positive, negative and neutral 'Dojo points' as a means to encourage and discourage particular behaviours (Goldstein, 2013).

ClassDojo is free to download and its user-friendly interface makes it simple to operate. The software is compatible with most mobile devices and personal computers with online connectivity, ensuring that almost all teachers, administrators and parents are able to use the application. Moreover, for teachers, ClassDojo is a convenient and immediate administrative, behavioural and communicative support tool that allows teachers to use the programme from anywhere and at any time. Initially, teachers must create a class list in which each student is represented by a customisable ClassDojo monster avatar. Teachers then choose the behaviours and/or skills they wish to target and develop in students. Teachers can select from a range of default options, or they can customise their own. Once this is complete, teachers can begin implementing ClassDojo at its most rudimentary level.

However, ClassDojo has rapidly moved beyond functioning exclusively as a behaviour support application for teachers, and evolved into a social media platform for schools (Williamson, 2017c), targeting not only teachers, but also students, parents and school leaders/administrators. In basic terms, a platform in this context is an online digital infrastructure facilitating the interaction of different user groups (Davies, 2017). ClassDojo in this sense acts as an intermediary bringing together its targeted user groups, including teachers, students, parents and schools. This is a key feature for the success of online platforms. Users participate in what is referred to as a value exchange process, in which the facilitation of user interactions and the management of user relationships is highly prioritised (Van Alstyne & Parker, 2017). A suite of additional features facilitates this value exchange process in ClassDojo, each one designed for one particular user group while

providing value for other user groups. ClassDojo, therefore, by design promotes a participatory culture. Users' participation then leads to the production and consumption of data, so that users become data subjects, data generators and data consumers (Langley & Leyshon, 2016).

The behaviour component of ClassDojo operates by way of teachers issuing feedback to individual students, groups of students or the entire class for particular behaviours or skills performed. The behaviours and skills to be targeted are customisable, with default options such as working hard, on task, displaying grit, off task and unprepared. The datafication of this feedback is integral to ClassDojo's discipline approach. Two feedback categories are available: 'positive' and 'needs work'. Despite the obvious intention to apply a positive vocabulary, the visual and auditory cues accompanying each category expose a more traditional separation between 'positive' and 'negative' feedback. 'Positive' feedback is coloured green and arrives with a pleasant ding sounding auditory cue, while 'needs work' feedback is coloured red and arrives with an auditory cue to match, a harsh buzz sound. Furthermore, affixed to all feedback is a numerical value that transforms feedback to students from a qualitative form into feedback that is both qualitative and quantitative. This quantified aspect of feedback produces statistical data representations of behaviour, better known as 'Dojo points'. Dojo points accumulate and appear as an aggregated score above student avatars until they are reset by the teacher. The default value setting for 'positive' feedback is one positive point, and for 'needs work' feedback is one negative point. Teachers can alter the numerical values attached to behaviours and skills, including a value of zero. This function of situating feedback along a numerical scale allows teachers to datafy behaviours according to a hierarchy of importance.

ClassDojo automatically tracks and stores every piece of student feedback data, creating interpretations of individual student and whole-class behaviours that are constructed as objective representations of truth through the production of a report. Reports include data on each behaviour or skill awarded, the time and date at which it was awarded, the number of accumulated 'positive' points, the number of accumulated 'needs work' points, and a green and red donut chart representing all feedback received that includes the percentage of 'positive' points awarded. The timeframe from which data is represented within student reports is adjustable, including options to display data accumulated over a day, week, month, year, all time or over a customised date range. Teachers can print reports for students to take home, or share with registered parents and students over the platform.

Furthermore, registered parents receive automatic weekly email notifications reminding them to check their child's latest report.

An uncritical uptake of ClassDojo

On the surface, it is not too difficult to recognise why ClassDojo appeals to many teachers as a convenient technological tool supporting their management of student behaviour and the classroom more generally. Managing student behaviour is an aspect of teaching in which many teachers encounter persistent challenging professional dilemmas (Evertson & Weinstein, 2006). Schools and teachers are subject to consistent pressures to 'control' student behaviour in order to maintain 'good order' (Johnson & Sullivan, 2016b). In fact, this incessant, often politicised issue has led to 'an uncritical acceptance of discipline as a synonym, and ultimately a verb, for control', rather than viewing school discipline as an educational endeavour (Slee, 1995, p. 7). This contextual backdrop creates an environment in which teachers frequently adopt discipline approaches designed to control the conduct of students (Armstrong, 2018), despite research associating this approach with student alienation (Hoy, 1972). ClassDojo provides teachers with a disciplinary model based on the control-oriented paradigm of behaviourism (Slee, 1995). Relying heavily on external positive reinforcement, or rewards, ClassDojo ultimately controls through seduction (Deci & Ryan, 1985). This type of disciplinary approach provides teachers with the allure of a behavioural quick fix while appealing to a broadly accepted, uncritical, common-sense logic that rewards are an effective and efficient means to get children to do what they are told (Kohn, 1993). This is despite a strong body of research demonstrating that rewards undermine intrinsic motivation and the development of self-regulation (Deci et al., 1999), questioning their use as a strategy to achieve long-lasting behaviour change. Such behaviour control strategies offer teachers practical means to produce obedient students, but ignore the lessons of educational research on effective approaches to discipline (Slee, 2014).

Teachers continually report that managing student behaviour is difficult, that persistent minor behaviour problems are very prevalent and they are aware that they often do not use effective discipline strategies (Johnson et al., 1993; Sullivan et al., 2014b). Contributing to this problematisation of school discipline is a preoccupation with student behaviour within the education, political and public spheres of life, often playing out in the media. Reports of 'bad student behaviour' stoke societal fears of chaos, crime and disorder, leading to unsubstantiated moral panics. The response to such pressures is enacted

through school discipline approaches, the technology through which the institution of education imposes and maintains its view of order (Ball et al., 2012) and the process by which relations of power are deployed (Slee, 1995). This is evident when analysing school discipline strategies, many of which involve 'controlling' students to ensure their compliance (Slee, 1995). In particular, schools often use behaviourist approaches to discipline that involve issuing rewards to promote compliant behaviour and sanctions to deter undesirable behaviour (Kohn, 2006; Maguire et al., 2010; Slee, 1995). ClassDojo's variation on behaviourism integrates the datafication of behaviour into its approach, enhancing its disciplinary and organisational capabilities. Teachers have an increased capacity to organise, analyse and compile student behavioural information, invoking a pedagogical shift in discipline practice, and students can be subject to an increasing array of evaluations and representations directly related to their behaviour. Therefore, ClassDojo provides teachers with an attractive data-driven technology of control, constructing an image of itself as a convenient way in which to gain student compliance and maintain classroom order.

In contemporary educational discourse, technology is framed as a positive transformational agent (Watters, 2017b) and data revered as the key to effective schooling (Sahlberg & Hasak, 2017). These ideas do not confine themselves to the realm of policy makers or the ed-tech sector; rather they are pervasive, traversing through education systems all the way into schools, materialising as visions of progressive education and innovative teaching. In a sense, these ideas have emerged as modern values of education. The consequence of this, at the school and classroom levels, is that resistance by educators to the adoption of modern technology, particularly that which incorporates data-related processes, risks being perceived as an obstacle to beneficial change (Watters, 2017b). Therefore, through this dominant tech- and data-positive narrative, schools and educators are encouraged to consider how to incorporate technology and data processes into practices to improve performance. ClassDojo's self-representation and industry recognition as a novel education technology innovator position it as an attractive educational product within this context.

In the broader context of education, ClassDojo situates itself firmly within the current technological and data-inspired education transformation as a free high-tech datacentric tool. Its packaging and functionality embed it deep within an educational environment on the precipice of a technological and data-based transformation (Digital Education Advisory Group, 2013; European Commission, 2018; Spires, 2017;Office of Educational

Technology, 2017). Driven, in large part, by hegemonic techno-solution (Maturo, 2014) policy and rhetoric, technology and data are often viewed uncritically as solutions to complex educational issues, including persistent concerns about student behaviour and classroom management (Evertson & Weinstein, 2006; Sullivan et al., 2014b). Subsequently, within the public conscious data has gained an axiomatic quality, a taken-for-granted acceptance as a representation of the truth (Lyotard, 1984). ClassDojo capitalises on this nexus of contextual elements, emerging from the ed-tech sector as an attractive proposition for teachers and schools in search of an innovative technological datafication tool to support teaching practice and student learning (Barseghian, 2011).

Not only does ClassDojo represent itself as a useful technological tool to support pedagogy and data-related practices, but it also transforms school discipline and classroom management into a game that is strategically targeted to engage students. The diffusion of games and game-like elements throughout the digital world is prolific. Digital video games are extremely popular, particularly with youth, and they have become a dominant cultural feature in society (Devers & Gurung, 2015; Lee & Hammer, 2011; Nacke & Deterding, 2017). Over recent years this cultural immersion and popularity has led educators to explore how gaming may be utilised within educational contexts to support student learning and engagement (Devers & Gurung, 2015). This application of game design elements in non-game contexts is known as gamification (Deterding et al., 2011). Media reports (Henebery, 2015; Pinkerton, 2017) and teacher testimonials (Haiken, 2017) suggest that gamification is influencing the pedagogical decisions of educators and the way students are engaging with particular learning approaches. Gamification techniques abound within ClassDojo's design, most notably through its behaviour component features. These game elements include a points system, leaderboard, badges, personalisation and customisation, avatars and goal setting, many of which require the production, storage and analysis of data. Through these techniques, ClassDojo transforms school discipline into a game in which the datafication of student behaviour is a critical aspect. This occurs through the application of playful frames in what is traditionally a serious educational space, while simultaneously leveraging surveillance to evoke behaviour change in students (Whitson, 2013). Prominent Silicon Valley edu-business leaders such as the CEO of the Silicon Valley Education Foundation have publicly credited ClassDojo's popularity to gamification, stating: 'gaming techniques succeeded in turning ClassDojo into the most widely used and respected behavioural-management app out there' (Chaykowski, 2017). Additionally, reports of 250,000 students sending ClassDojo

drawings of its monster mascots and students describing ClassDojo as fun (Chaykowski, 2017) suggest ClassDojo's playful gamified elements appeal to its student users. These factors also make ClassDojo appealing to teachers, particularly those who view it as an engaging approach to classroom discipline.

ClassDojo as a disciplinary system

ClassDojo's popular appeal has materialised in a rapid and widespread uncritical uptake of the technology by primary school teachers across the globe (Rodriguez, 2016). We shift our discussion now to problematise this uncritical uptake, arguing that the implementation of ClassDojo as a disciplinary system may have profound implications for the educational trajectories of students. Working with conceptions of surveillance and performativity, we analyse ClassDojo from a critical standpoint, examining how it conceptualises and enacts discipline. We argue that ClassDojo operates as a technology of power through which students are controlled via an intensification of surveillance, and that it functions via a process of datafication to produce an unjust behaviour-based performative culture. Moreover, it promotes a view of behaviour as emerging in isolation and unaffected by external influences (Sullivan et al., 2014a), situating responsibility for behaviour entirely with the student. Furthermore, it has the potential to produce decontextualised and possibly flawed behavioural data from which dossiers may be compiled with the potential of enduring on student records throughout their schooling.

Surveillance

Schools' digital data-gathering capabilities are extensive, typically including a multitude of instructional and assessment practices that by their nature function as mechanisms of surveillance (Boninger & Molnar, 2016). Due to such conditions a culture of surveillance has become normalised in schools (Steeves & Jones, 2010), creating a context in which the predilection of schools to adopt data-centric surveillance technologies in support of educational and institutionally designated objectives has carried on unchecked in recent times (Taylor, 2017). ClassDojo exemplifies one such technology, one that promotes itself as a support for both school and institutional objectives relating to discipline. The effect of ClassDojo's datafied surveillance is an increased volume of behavioural data available to teachers and schools from which a wide range of decisions about students can be made. Therefore, ClassDojo can be understood as yet another data-gathering surveillance technology that is contributing to a culture of surveillance that has become normalised in schools.

ClassDojo requires teachers to monitor students constantly, catching students performing particular behaviours, generating, storing and analysing data through its software as this occurs. This approach, promoted on its website, describes the increased surveillance of students as a way for teachers to achieve behavioural success in the classroom. Exemplified by the following extract, ClassDojo's portability enables the constant surveillance of students and provides teachers with new ways in which to record that surveillance as data. '"Lunch, recess, field trips, anything like that ClassDojo goes with us," … [Mrs] Smith begins assigning points as soon as work starts' (Peak, 2016). The idea is that, through increased surveillance, teacher feedback increases, and student data increases, which will lead to improved student behaviour and classroom culture. In effect, more surveillance equates to better behaviour and classroom culture. Foucault (1977, p. 170) describes this as 'coercion by means of observation'. He unmasks the disciplinary objective underpinning this simple mechanism, revealing the aim is to be able to supervise the conduct of each individual, to assess them, judge them and calculate their qualities or merits (1977, p. 143), producing in today's digitised educational landscape a controllable datafied student subject for whom being watched is a normal part of everyday school life.

The surveillance mechanisms embedded within ClassDojo are not confined to classroom observations but extend beyond the walls of the classroom. ClassDojo provides teachers with further new possibilities for practice in the domain of teacher–parent engagement. Through its digitised communication network ClassDojo provides teachers with the ability to deliver a child's behaviour data directly to parents, in real time, along with continual access to constantly updated behaviour profiles in the form of student reports. Registered parents are reminded every Friday via email to check their child's student report, a strategy deployed as a means to foster parental engagement. This feature effectively subjects students to a weekly report card of their behaviour delivered directly to a parents' inbox. This datafication of student discipline through surveillance and the digitised communication network servicing the school community combine to transform ClassDojo from a mechanism through which surveillance is datafied, into a dataveillance mechanism. Dataveillance in this context refers to the systematic use of a personal data system to monitor the actions of an individual (Clarke, 1988). This capability enhances the reach and effect of surveillance. Prior to the digitisation of education, behavioural surveillance processes typically operated within the confines of the school, apart from exceptional cases. The arrival of technologies such as ClassDojo, however, encourages an expansion of student surveillance that penetrates the family. Stanley Cohen, in his book *Visions of social*

control (Cohen, 1985), exposes how state disciplinary power utilised such a strategy to expand the reach of surveillance as a tool for controlling deviant youth. He argues that, when surveillance of the behaviour of children penetrates into the family, parents become correctional resources in service of the state. ClassDojo can be used in a similar manner. Teachers are able to recruit parents as correctional resources to reinforce classroom behaviours outside of school hours. Therefore, it is evident that if teachers modify their practice to implement ClassDojo according to company recommendations, students will be subject to an intensification of surveillance at school that encroaches into their homes, extending school-based disciplinary regimes further into the lives of young people.

ClassDojo's approach to behaviour can be understood as a technology of power, one in which coercive methods of control are deployed to make students visible. The visibility of students occurs by way of techniques associated with teacher observations and data generation, storage and analysis. These techniques function in response to a codified set of behaviours, and ClassDojo provides the digital framework on which to overlay the behaviour code. This enables the measurement of students in the form of data, producing a system in which the normalisation of particular behaviours occurs. Not only do these techniques make students visible; they also reveal the effects of power. The subjection of students to such techniques promotes the development of behaviour by way of value-laden measures and hierarchised rankings, creating what Foucault calls 'the constraint of a conformity' (1977, p. 183). Conformity is the primary objective and facilitated through a system by which students are trained, separated, differentiated and analysed down to individual segments; they are objectified in a way that constrains autonomy and reduces them to visible data representations of behaviour (Foucault, 1977). ClassDojo maintains the constant visibility of students via student accounts, the site at which students' can view their ClassDojo profile which includes behaviour reports that are constantly updated and evolving for as long as a student remains an active ClassDojo user.

In stark contradiction to the process by which students are individualised and made visible through an array of differentiating measures, ClassDojo simultaneously functions as a system for producing uniformity (Ball, 2015). The visibility of differentiating measures in conjunction with a compliance mechanism of control manifest in conditions that encourage conformity. Such a system lends itself to a standards-based approach to discipline, in which the standards take the form of numerical targets or benchmarks that have been affixed to a range of predetermined behaviours. Reaching the standard becomes a measure of normality, and any student who fails to do this is at risk of being understood

as non-conforming, below standard or abnormal. Normalising judgements in this context have a powerful effect in shaping human behaviour. Subsequently, normalising judgements act as an instrument of discipline and are reinforced by the visibility of student differentiated measures (ClassDojo behaviour scores).

According to Foucault (1977), discipline operates through a coercive dual gratification–punishment system, deployed as a means by which to conduct training and correction. Foucault reveals that this mechanism creates the possibility of characterising behaviours as good or bad, and distributing them within a field delineated by an allocation of good and bad points. He explains that through such quantification an 'arithmetical economy' emerges, a behaviour economy in which individuals appear as balance sheets of behaviour (Foucault, 1977, p. 180). ClassDojo utilises this method of behavioural quantification by affixing point values to all student feedback, driving the production of a classroom behaviour economy. According to the ClassDojo website, many teachers capitalise on this effect by converting 'Dojo points' into tangible classroom dollars that students can exchange for prizes (Greenberg, 1980). In addition, ClassDojo recommends this idea as a way in which to 'keep students excited about ClassDojo', declaring that Dojo points need to mean something. Therefore, according to this logic, a tiered prize system from which to exchange Dojo points is imperative, and functions in conjunction with a dual gratification–punishment system to control student behaviour through coercion.

Quantifying discipline and behaviour in a performative culture

ClassDojo's production of a behaviour economy establishes for teachers a relatively new form of governing students, a governance by numbers (Ball, 2015). The pronounced power of numbers in relation to governing is unmistakable (Rose, 1991). Through ClassDojo, student behaviour is displayed in the form of numerical data which functions as a representation of the student. Students become behavioural data points from which decisions can be made about teaching and learning. Through ClassDojo, student behavioural data may function in a myriad of ways to govern students. Behavioural data may be used to create an economy from which student privileges and punishments are determined. Data may also be used to build behavioural dossiers of students, to make decisions about behavioural areas of focus, to determine time spent on particular learning areas or to incentivise students to achieve particular objectives. The power of numerical data to govern students in these ways arises, in large part, from their 'ordering capacity': numbers provide a means by which to order students in a range of ways that make them

comparable, and enable the calculation of probabilities such as those related to success (Cohen, 1999). However, this attractive organisational quality is also problematic, particularly when applied to the complex social features of behaviour, as it decontextualises and reduces its complexity through its transformation into a number (Alonso & Starr, 1987). Numerical data may not be capable of adequately representing the social, as it tends to obscure ambiguities and limit the explanatory possibilities necessary to adequately represent the complexities of social life (Selwyn, 2015). Therefore, ClassDojo's numerical representation of students through behavioural data is a form of reductionism, dismantling the complexity of behaviour in order to facilitate the governance of students via classification, rankings, comparison and the like. The implications of this may be profound, in particular those associated with the production of student behavioural reports, which are potentially based on flawed data. The potential for such reports to be compiled and reconstituted in the form of individualised behavioural dossiers is not implausible; rather, they may be viewed as a valuable source of data from which decisions about students' educational trajectories occur.

It is useful here to consider 'the examination', which is another method of governing students in schools. Drawing on Foucault, Ball reveals the effects of examinations on students and highlights the aspects that make it such an attractive tool for governance:

> the learner is … made visible and calculable, but power is rendered invisible, and the learner sees only the task … which they must undertake and their 'result', position, ranking, category. They are made intelligible and manageable in these terms. (Ball, 2015, p. 299)

This explanation of the effects of examinations on learners helps us to understand the ways in which ClassDojo can be used to govern students. According to Foucault, the examination 'is a normalising gaze, a surveillance that makes it possible to qualify, to classify and to punish' (1977, p. 184). Therefore, ClassDojo, through its datafication of behaviour and digitised organisation of students, can be understood as a continuous behavioural examination tool, unrelentingly evaluating the behavioural performance of students on a daily basis, providing an abundance of numerical data from which to conduct classroom decisions relating to behaviour. This evaluating process, along with test-scores shapes the way in which students understand themselves (Stobart, 2008).

Numerical data is transformational, reconfiguring a complex social environment into statistical information, rendering it amenable to control and establishing the

classifications by which people come to think of themselves and their choices (Hacking, 1991). It thus generates the conditions from which a culture of performativity may arise. Performativity is synonymous with governance, measurement by numbers and control.

> Performativity is a technology, a culture and a mode of regulation, or a system of 'terror' in Lyotard's words, that employs judgements, comparisons and displays as a means of control, attrition and change. The performances … serve as measures of productivity or output, or displays of 'quality', or 'moments' of promotion … or inspection. They stand for, encapsulate or represent the worth, quality or value of an individual or organisation within a field of judgement. (Ball, 2000, p. 1)

We argue that the features through which ClassDojo shapes and controls student behaviour contribute to the creation of a classroom culture of performativity. Therefore, we now turn the focus to the ways in which ClassDojo uses numerical data to represent the behaviour performance of students, arguing that it concomitantly serves as a measure of student productivity, a comparative display of student quality, and a display through which students reconstruct their identities.

ClassDojo's performative approach is exemplified through its class list display, providing a modern digitised version of the traditional behaviour chart. Capable of being broadcast on large classroom screens to the entire class, visible to anybody who enters, a numbered ranking of students according to their behaviour fills the screen and invites a comparison of students. This public display of performance, even that which is sporadic, may serve as a behaviour-controlling mechanism (Sullivan, 2016). The implementation of ClassDojo in this manner utilises the measurement of two student categories, output and quality, in effect transforming behaviour into a commodity and increasing the possibilities for control. High scores indicate high levels of student productivity and quality; conversely, low scores indicate low levels of student productivity and quality. Within such a system student compliance is traded for 'Dojo points', which represent outputs of productivity and quality. The audit-like nature of this approach promotes competition between students in a race to the top of the rankings while simultaneously creating a hierarchical ordering of students that may influence the way in which students understand themselves (Espeland & Sauder, 2007). Thus, technologies such as ClassDojo, which rank students according to their performance, can be understood as contributing to the creation of a culture of performativity in the classroom (Jarke & Breiter, 2015).

Student constructions of identity have been shown to be influenced by discourses of performativity that are produced and reinforced by calculations associated with student measures of success (Keddie, 2016). The emergence of cultures of performativity in classrooms is linked to the infiltration of new managerialism in education, a mode of governance in which numbers and rankings are prioritised and framed as objective representations of value, creating an impression that what is of value can simply be counted (Lynch, 2013). We argue that ClassDojo's datafication of student discipline and application as a behaviour governance tool demonstrably classifies it as a performative technology, transforming students and their behaviour into numerical data that is organised and ranked as a quantifiable measure of behavioural success. Through performative technologies such as ClassDojo, the path to student success is grounded in neoliberal notions of competitive individualism, and the enterprising individual, in which success is framed in individualistic terms and associated with merit and self-improvement (Nairn & Higgins, 2007). Within such a climate, worth and value are framed against numbered parameters of behavioural success, from which students actively craft their identities (Keddie, 2016; Nairn & Higgins, 2007). Behaviours that are considered worth acquiring and performing are those embedded within the behaviour code applied to the ClassDojo framework, and subsequently are the only behaviours that count. Furthermore, ClassDojo's individualised psychological regime (Madsen & Brinkmann, 2010) construes students as responsible for their own success, reinforcing notions of meritocracy that ignore structural and contextual barriers to success. This framing of ClassDojo as an objective measure of success establishes it as a self-validifying vehicle for teachers and students to interpret a perceived 'true' behaviour performance of students. Subsequently, students are likely to associate their ClassDojo behaviour score and ranking with notions of worth, value and ideals of self-improvement (Lupton & Smith, 2018). This means for students facing challenges associated with behavioural compliance, such as those bringing to school non-dominant cultural understandings of behaviour, forced failure becomes a possibility. Compelled to understand themselves through the calculation of performed behaviours that count, students may fail if they do not measure up to the narrow demands and expectations that are asked of them through such a performative behaviour system (Keddie, 2016).

As a final contribution to this argument, there is a necessity to provide an alternative vision for school discipline. Therefore, we offer an approach to school discipline using ideas drawn from classroom ecology (Sullivan et al., 2014b) and democratic education (Pearl &

Knight, 1999), one that is consistent with an educational discourse of discipline (Slee, 1995). Such an approach would be underpin by the values of respect, caring and dignity, promoting practices that exhibit and develop such qualities in students (Johnson & Sullivan, 2016a). It would recognise the complexities of behaviour and consider the role of not only internal, but also external, influences on behaviour such as curriculum, pedagogy, relationships, student experiences and more. It would value a notion of connection, involving understandings linked to the why and how of learning. It would shift away from controlling discipline practices to practices that engage students with learning, and incorporate student voice and a more equal distribution of power between teacher and student (Sullivan, 2009).

Conclusion

This paper has critically examined the ways in which ClassDojo is influencing the disciplinary landscape in schools and classrooms, in particular its datafication of school discipline and student behaviour. ClassDojo's popular appeal, and the relative scarcity of critical research investigating its influence on school discipline, was the motivation for this critical analysis. Moreover, this combination of factors indicates a necessity for further research into ClassDojo to uncover deeper understandings of its impact on teacher practice, student behaviour development and the education landscape more broadly. We have argued that within contemporary education's techno-friendly zeitgeist (Boninger & Molnar, 2016) ClassDojo frames itself as a successful innovative educational technology (Williamson, 2017b). However, despite representing itself in this way, closer inspection reveals a technological layering over older ideas and practices (Watters, 2017b), resulting in a reconstitution of behaviouristic techniques that incorporate the datafication of student behaviour. However, ClassDojo's expanded surveillance techniques and datafying properties are producing new possibilities for teachers. These new possibilities expose ClassDojo's power-inducing effects as they promote controlling techniques of discipline and governance, rather than an educational approach to school discipline.

ClassDojo exists as an instrument of governance available to schools through which political objectives that prioritise state interests may be realised (Williamson, 2017b). We argue that ClassDojo's datafying system of school discipline is intensifying and normalising the surveillance of students, and serving as a mechanism for behaviour control. This datafication and numerisation of students entices teachers with the prospect of a new and supposed efficient method of student organisation and decision making, a

governance by numbers. Furthermore, this form of psychologised discipline situates responsibility for behaviour entirely with the student, problematically decontextualising and erasing the complexities of behaviour, in particular those influenced by structural and contextual components of schooling (Sullivan et al., 2014a). It follows that representing and governing students in this manner produces the conditions from which a classroom culture of performativity can emerge. Putting students' behaviour performance under constant evaluation and on constant display objectifies and reconstructs students as statistical data representations of normalised culturally produced behaviours. Educating students through such performative mechanisms produces a school experience in which students are constantly subject to, and participate in, a calculation and organisation of their performance in response to evaluations, benchmarks, ratios and more (Ball, 2003; Rose, 1999a). Furthermore, performative data-driven discourses of discipline, such as that which operates through ClassDojo, we argue force students to understand themselves through a process of calculation, constantly measuring themselves against narrow representations of ideal behaviours derived from dominant cultural understandings (Keddie, 2016). Consequently, critically examining ClassDojo's datafication of discipline is important to building a comprehensive understanding of how ClassDojo is influencing school discipline practice and education more broadly.

Through the proliferation of ClassDojo, schools and classrooms across the globe participate in the process of increasingly normalising and promoting systems of student surveillance, and data-driven performative cultures of discipline. Such practices impede the enactment of school discipline through an educational, as opposed to a management discourse (Slee, 1995). More must be demanded of a disciplinary system than coercive compliance techniques associated with external regulation, and the taken for granted uncritical acceptance of discipline as a synonym for control. If it is not, schools risk failing to develop in students the skills and qualities necessary for their future success as ethical, successful twenty-first-century citizens – skills such as participation, critical thinking, creativity, inclusiveness and a sense of fairness (Taylor & Kearney, 2018).

Summary

In summary, this chapter has presented findings from Phase One of this study which address research question one: *how does ClassDojo shape understandings of student behaviour and school discipline practices?* The findings show that ClassDojo shapes understandings of student behaviour and school discipline through a) its datafication

processes which construct behaviour reductively in quantified and hierarchical terms and promote a data-driven approach to school discipline, b) its reliance on surveillance processes which promote the use of surveillance as a tool for disciplining and governing behaviour, and c) the behaviouristic logic which underpins its features and functions. Furthermore, the chapter argues that ClassDojo promotes a form of school discipline that is not only behaviouristic in nature, but one that will expand the use of surveillance and foster a data-based performative approach to student behaviour and discipline. The next chapter presents the findings from Phase Two of this study, which shifts the focus from ClassDojo's design to how and why teachers and schools use ClassDojo to manage student behaviour.

Chapter 6: Phase Two findings – How and why teachers and schools use ClassDojo for disciplinary purposes

In this chapter I present findings from Phase Two of this study which focussed on investigating how, and for what reasons, teachers and schools use ClassDojo to enact school disciplinary practices. In doing this it shifts from a focus on the influence of ClassDojo's platform design on school discipline, to how and why teachers and schools use ClassDojo to enact school discipline practices. Hence, the findings presented attend to research questions two and three of this study: *how do teachers and schools use ClassDojo to manage student behaviour?* And *why do teachers and schools use ClassDojo to manage student behaviour?* The data used to generate the findings I report in this chapter include teachers', schools' and parents' perspectives found in online documents, online observations and interview transcripts.

There are four main findings from the data analysis. The findings are:

1. Teachers and schools use ClassDojo to shape the behaviour of students through techniques of control.

2. Teachers and schools use ClassDojo as a surveillance technology to monitor and make students and their behaviour visible.

3. Teachers and schools use ClassDojo data to construct knowledges and understandings about students' and teachers' behaviour.

4. Teachers and schools find ClassDojo's control-oriented features and functions appealing.

The data analysis which produced these findings involved a process of pattern finding and data categorisation. Firstly, the data were coded and grouped into categories. Then the categories were arranged into themes or findings. In presenting these findings, I use excerpts from the data as illustrative examples. Additionally, I present an illustrative case of a teacher, Max, to demonstrate in more detail how ClassDojo is used. I chose to use Max in this way because his case was particularly illustrative of the findings produced by this study. I introduce Max below and then throughout the chapter I frequently use excerpts from Max's interview transcript to provide a richer description of the findings. However, I do not use data from Max's interview to represent every characteristic of each main

finding; rather I use them selectively to illustrate only those characteristics which were exhibited in his own use of ClassDojo. Providing Max as an illustrative case study draws attention to the possibilities associated with teachers employing multiple practices with, and through, ClassDojo to manage behaviour in one classroom.

Introducing Max

Max was a primary school teacher and long-time ClassDojo user. He had adopted the platform in 2012 to support his school discipline practices. At the time of our interview, he was in his eighth year of teaching. Max was a generalist classroom teacher and was teaching in a small- to medium-sized school in Adelaide, South Australia. It was his first year employed at the school, and he was teaching a Year 5/6 composite class. He had 29 students in his class, twice as many Year 6 students as Year 5, and more girls than boys. Max described his class as diverse and complex, which included students with differences in learning needs, cultural backgrounds and behavioural needs. He described his approach to teaching as calm and gave the impression that he liked to have fun with his students yet maintain a somewhat stern approach toward school discipline.

In general terms, Max described student behaviour in his class as challenging, and referred to his class as 'probably the toughest class I've ever had'. He attributed the challenging behaviour to complex student needs and a group of poorly behaved boys. He summed up the behaviour he viewed as problematic by grouping it into three main types: 'off-task behaviour, disrespect for each other, and disrespect for teachers'. His strategy for addressing such behavioural issues was to apply 'logical consequences', which he believed was effective because it established a connection between punishment and 'the crime'. Max explained that he drew on his own experiences as a student with school discipline to inform his decision to use logical consequences with his students. He viewed this approach as a fair way to respond to misbehaviour and one that he saw value in as a student when it had been used on him.

Shaping behaviour through techniques of control

This section presents the finding that *teachers and schools use ClassDojo to shape the behaviour of students through techniques of control*. From the analysis of data, I established that there are four main ways that teachers shape behaviour through techniques of control:

a) codifying behaviour with ClassDojo;
b) using points and prizes to control student behaviour;
c) creating a micro-economy of students and their behaviour by exchanging feedback points for rewards; and
d) controlling behaviour with audio cues.

This finding reveals the specific features and functions teachers and schools use to deliberately shape student behaviour, and the processes of judgement, comparison and monitoring that underpin their use. Additionally, it outlines the strategies teachers have used to entice students into accepting the behaviour-shaping practices they are subject to through ClassDojo. Thus, it presents a finding which makes visible the relations of power made possible by, and exercised through, ClassDojo. These relations of power target the individual bodies of students for the purpose of shaping their behaviour.

Codifying behaviour with ClassDojo

> The first thing we do is we come up with our class agreement together, generally in week one of the year. The behaviours I put into ClassDojo come from the agreement. And then obviously if students are meeting the agreement, they get a point, and if they're breaking the agreement, they get a negative point. So, it's a bit of class discussion. There are a few behaviours thrown in there that I came up with, and some we came up with together, all agreed upon, and then they become the class values that I use to give or take points for. (Max)

Many of the teachers in this study used ClassDojo as a system through which they codified the behaviours on which they provided feedback to their students. Here Max described the way he used ClassDojo to code the feedback he gave his students in accordance with a class agreement. Max and his students developed their class agreement together and through it formalised a set of behavioural norms and rules for the classroom. Max then used ClassDojo to codify a set of feedback behaviours he used to uphold the class agreement. Feedback behaviours were coded in three ways: with language as positive or 'needs work' behaviours, visually with colour as either green or red behaviours, and numerically through the point values that were attached to each behaviour. In this way, ClassDojo uses normative ideas associated with evaluating things as good or bad to code feedback behaviours in its platform. For example, the colour green and a positive value are used by ClassDojo to depict behaviours that are positive, whereas the colour red and a minus point value depict behaviours that 'need work'. In this way, Max used ClassDojo to

create a behaviour feedback framework that was coded to align with his class agreement. The framework of feedback behaviours Max used are shown below in Table 4.

Table 4 Feedback behaviours used by Max

Positive (+)	**Needs work** (-)
treating others respectfully	being disrespectful to others
showing respect to the teacher	being disrespectful to the teacher
listening to instructions	not following instructions
being organised for learning	not being organised
being helpful and kind to others	not speaking appropriately to others
owning up to your mistake	interfering with the learning of others
being honest	being out of your seat while eating
having a growth mindset and trying your best	not keeping your hands to yourself
being respectful of class property	

Like Max, many teachers used ClassDojo to codify a set of student behaviours they would use as feedback at the beginning of the year; however, some teachers revealed this codifying process was a practice they undertook repeatedly across the course of the year. For example, one teacher explained:

> I highly suggest creating behaviours with your students that you want to encourage throughout the year. I always did this at the beginning of the year, but like any project, we were constantly refining throughout the school year. We often revisited our behaviours to discuss if they were still of value to the students. Even though ClassDojo focuses on positive Mojo, there will undoubtedly be a few students who want to test the rules. I think involving students in creating the NEEDS WORK Dojo points is just as important. What behaviours are we struggling with this week? Are these based on a single incident or do we need to watch for them throughout the upcoming weeks? (US primary school teacher, weblog post)

This teacher used ClassDojo to create feedback that he would use both to encourage students to perform certain behaviours, and to enforce class rules. However, this framework of coded behaviour feedback was revised regularly in a way that responded to the context of the classroom. The teacher made decisions about which behaviours were maintained, added or removed based on what the students valued and emergent problems

in student behaviour. Therefore, like some other teachers, this teacher used ClassDojo to maintain a constantly evolving feedback framework that enabled him to respond to the changing behavioural context of his class, yet he did this in a way that retained the coding of behaviours in binary terms as good or bad.

Another way some teachers used ClassDojo to code behaviour was by allocating varying point values to specific behaviours to make them worth more, or less, than other behaviours. For example: 'You can also weight both positive and negative Dojo points, having COLLABORATION worth 5 Mojo points and NO HOMEWORK worth -3 Dojo points' (US primary school teacher, weblog post). This teacher chose to code feedback behaviours in ClassDojo in a way that created differences between behaviours. He did this by modifying the point value of feedback behaviours so that certain behaviours possessed higher, or lower, point values than others. By coding behaviours in this way, the teacher created a behaviour feedback framework that was hierarchical. Feedback behaviours with higher point values counted more than those with less. Teachers who coded feedback behaviours in this way created a mechanism that encouraged or discouraged certain behaviours more than others.

Another way in which teachers used ClassDojo to codify behaviour was through its alignment with school policy. This is illustrated by the following examples:

> Teachers will actively award Dojo points when students demonstrate the school's values. Respect, Resilience, Responsibility, and Aspire. (Australian primary school, discipline policy)

> The positive points that a student receives reflect the virtue awards that students are recognized for every nine weeks (and twice yearly at Awards Day). They are Courage, Fairness/Justice, Honesty, Kindness/Courtesy, Perseverance, Respect, Responsibility, Self-Discipline, and Self-Respect. Students will receive points for displaying these qualities. (US middle school, discipline policy)

The above two examples indicate how some schools use policy to instruct their teachers on the types of feedback behaviours to include in ClassDojo. The policies not only inform teachers that they must include feedback behaviours that reflect the schools' values, but that they must be awarded. Therefore, such school policies are influencing the make-up of the behaviour feedback frameworks that teachers create. Directing teachers on what types of behaviours to include through school policy provides schools with a way of influencing practice.

Using points and prizes to control student behaviour

> [I use ClassDojo] to keep some control of student behaviour … We do a thing in my class where if a student's on green at the end of the week, so they've got a positive score, they get reward time on a Friday afternoon. It's a good way for me to keep track of who's been doing the right thing that week. And then if a student's on minus or on zero, because I try to be quite strict with it, they don't get reward time. The scores are a good way for me to remember who's done the right thing that week … So, it does keep me accountable for that and keeps the students accountable as well. They all know Friday afternoon, if they're not on green, they don't get reward time. And even if they finish all their learning, they still don't get it. (Max)

Like Max, many teachers used ClassDojo's points system with prizes or rewards to control student behaviour. Max was clear about using ClassDojo to control student behaviour. However, Max did not rely on ClassDojo alone to do this; rather, he augmented it with the lure of an external inducement – reward time. Max relied heavily on ClassDojo's points system to implement his approach. He used it as the means through which students could acquire rewards. By linking ClassDojo's points system to the acquisition of a weekly reward, feedback points became fundamental to the way student behaviour was understood and developed in his class. He used ClassDojo's feedback points to induce students to perform particular behaviours, and he used students' behaviour scores to keep track of which students would and would not receive reward time. Therefore, like many other teachers, Max used ClassDojo's feedback points system to shape and control the way students behaved. Ultimately, if students wanted to be rewarded, they were required to perform the behaviours that would earn them 'positive' points.

Furthermore, much like students in some other teachers' classes, Max's students used ClassDojo data to track and shape their own behaviour. Students were encouraged to track their own behaviour and adjust it accordingly to ensure they received the weekly reward. Max revealed that some students even tracked their peers to ensure rewards were only given to students with a positive score. He suggested this peer-based tracking was driven by students' commitment to playing by the rules, and notions of deservingness. Hence, when students use ClassDojo in these ways they reinforce the behaviour-shaping effects of ClassDojo on themselves and their peers through self-tracking and peer tracking. This increased scrutiny of students' behaviour is a key instrument in the disciplining of behaviour and acts as an additional technique of control.

A considerable proportion of teachers relied predominantly on the use of positive ClassDojo points for shaping the behaviour of students, choosing to focus on using rewards to promote positive behaviours, such as this teacher:

> When I notice students doing any behaviour I expect, I can award Dojo Points or Mojo![7] Students LOVE receiving Mojo! All students want to please their teachers and be successful students, so awarding Mojo is a great way to encourage students to behave well. (US primary school teacher, weblog post)

For teachers like this, positive ClassDojo points were used to shape the behaviour of students. She explained that positive ClassDojo points could be used in this way because of the appeal they had with students, which she implies is grounded in students' general desire to be recognised by their teacher and an appetite to succeed. 'Positive' feedback points were used as an incentive and positive reinforcement for the performance of certain behaviours. Thus, ClassDojo feedback points acquire an elevated value through which students' conduct can be shaped and controlled.

Some teachers revealed that they did not use ClassDojo's 'needs work' points at all and would only provide their students with 'positive' feedback. One teacher described this system:

> I've used ClassDojo and I really liked it … I also didn't 'take away dojos' as once they'd earned them they were theirs … We adapted the positive comments to fit in with our school ethos so they could get points for being kind or respectful and we also added points for being tidy, making healthy choices at lunch and for doing homework etc. (teacher, media comment)

This teacher, like some others, relied solely on 'positive' feedback points to shape student behaviour and chose not to use negative feedback points at all. She described using ClassDojo feedback points in her class much like a commodity. They were something her students could earn, and once earned considered a personal possession belonging to each student. Hence, she viewed taking her students' points away – by awarding negative feedback points – as wrong or unfair. Of the teachers who chose to only use 'positive' points such a view was expressed by only a few. More often, a decision to only give

[7] The term Mojo is often used to describe ClassDojo money which is exchanged for ClassDojo points.

'positive' feedback through ClassDojo was driven by a teacher's preference for using a positive discipline model.

While the use of 'positive' feedback was common among teachers, there was also a significant portion of teachers who placed a considerable emphasis on using 'needs work' feedback to regulate student behaviour. Analysis showed that teachers viewed it as a way to punish students for performing unwanted behaviours. For example, this teacher explained:

> Discipline in Korea can be insane. Push-ups, planks, squats, hands-in-the air; I've seen students smacked across the face, smacked by any number of objects and spanked.
>
> I'm not sure what else can be done. Students always get something for bad behaviour; a stern look, a behavioural analysis chart, a letter home, yelling at them. Why not an imaginary point? That's the least harmful thing that could ever happen to them. Especially in Korea where they might be hit or removed from the classroom (and then hit harder). (South Korean middle school teacher, weblog post)

To be clear, the extreme views regarding forms of disciplinary punishment expressed by this teacher are not representative of teachers who used ClassDojo's negative feedback. Rather, the excerpt illustrates the way some teachers viewed ClassDojo's negative feedback points as an effective way to address unproductive behaviour. Thus, like many teachers, this teacher used ClassDojo's negative feedback points as an effective way to respond to unproductive student behaviour. Moreover, it seems he saw no alternative to using punitive methods. This view draws on the idea of punishment as an inevitable consequence of 'bad behaviour'. Therefore, like many other teachers, this teacher uses negative feedback points as a preferred method of regulating unproductive student behaviour.

This same teacher highlighted another benefit some teachers associated with the datafication of negative feedback points and how they functioned as a controlling mechanism through students' ClassDojo behaviour scores:

> I think ClassDojo is a great tool. Students can see, with a real live number, how they're doing or not. Especially in a classroom setting where we don't speak the same languages. Even low-level students will understand what's going on if I use ClassDojo – Oh, if I do such and such I lose a point … If anything, Class Dojo will just reinforce your rules. (South Korean middle school teacher, weblog post)

Like some other teachers, this teacher used negative feedback points to communicate visually to students that they have behaved improperly. Awarding a student negative feedback points will cause their behaviour score to drop, a measure the teacher used to keep students informed about their behaviour. In this way, negative feedback points function as a visual punitive measure which students can see through their constantly updated behaviour scores. The lower a student's score the worse their behaviour. Thus, some teachers use negative feedback points as a means of control through the effect they have on students' behaviour scores.

While this teacher used negative feedback points in much the same way as many other teachers, he also developed a strategy of using 'positive' feedback points so that they functioned with a punitive effect:

> I ended up choosing a hodgepodge of positive and negative behaviours that mattered to my classroom and class dynamic.
>
> Not Listening/Not Working … are my most common points to take away – I give them when students are playing tag in class or generally ignoring the assignment.
>
> Seating assignments are being enforced – if a student sits in #25's chair but they are #17, then all the points #17 earns goes to #25. (South Korean middle school teacher, weblog post)

This teacher used negative points in an orthodox manner to control student behaviour; however, he also described transferring 'positive' points from one student to another to enforce a classroom rule regarding student seating. He explained that any student sitting in the wrong chair would have the 'positive' feedback points they acquire transferred to the student whose chair they were sitting in. Here 'positive' points have a punitive effect for the purpose of regulating behaviour. Thus, this teacher used ClassDojo feedback points punitively in many ways to regulate his students' behaviour.

Creating a micro-economy of students and their behaviour: Exchanging feedback points for rewards

> I've also set up Dojo money, so every time they get to 10 points, 20, 30 and so on they get a Dojo dollar which is just money, fake money that I have printed off. Then they save up their dollars and they can buy something. So I've got another sheet that lists what students can buy and how much each thing costs, for example three stickers for one dollar. (Teacher 1 transcript, Australian primary school teacher)

This teacher, like many other teachers, used ClassDojo to create a micro-economy of behaviour in her classroom. She described using ClassDojo's points system as a token economy through which her students were able to purchase rewards. She integrated a token economy with ClassDojo by setting up a system of exchange in which ten ClassDojo feedback points could be exchanged for one Dojo dollar. Therefore, the greater the number of ClassDojo feedback points a student received, the more Dojo money they were able to acquire. Additionally, this teacher chose to make her token economy concrete by printing paper Dojo dollars for her class to use. Her students were then able to use the Dojo dollars they received to purchase rewards. Hence, within such a system, external inducements in the form of rewards are used to increase the value and appeal of feedback points for students. This is because, if students want the opportunity to purchase a reward, they have to behave in ways that earn them Dojo dollars, that is, 'positive' feedback points. Therefore, the many teachers that used ClassDojo to employ a token economy system in their classrooms were enacting a micro-economy of behaviour which functioned by its nature as a system of control.

Some teachers and schools used ClassDojo to establish a micro-economy of behaviour through which students could exchange feedback points for prizes, although they designed the system to provide even greater control over student behaviour. One teacher did this by periodically changing the number of points her students needed to purchase a prize. She explained:

> I usually start out with an easy goal of 10 points [for a reward]. I am trying to get everyone to LOVE ClassDojo. I want them to love going to the treasure box. I need my students to WANT points. I do this for about a week, which is just enough time for everyone to experience the success of going to the treasure box. Then I raise the goal to 15 points, and then, ultimately, to 20 points for my 3rd graders. (US primary school teacher, weblog post)

For this teacher, the main goal of using ClassDojo's feedback points as currency for exchange was to make such points irresistible to her students. She did this by incrementally increasing the number of ClassDojo points students required for a reward over time. She likely tracked students' feedback points via their behaviour scores which provided her with an updated tally of each students' points. Initially, students only needed a small number of points before they could exchange them for a reward. However, the teacher gradually increased this number so that students had to earn more points for a reward than they had previously. The teacher explained that the success of getting a reward was key to producing a strong appetite in students for feedback points. Thus, as

her students' desire for feedback points increased so did the number of points they were required to accumulate for a reward. This meant that, if students wanted to obtain more feedback points, they were required to behave in prescribed ways. Therefore, like some other teachers and schools, this teacher used ClassDojo to install a micro-economy of behaviour in her classroom that was designed to make 'positive' feedback points highly prized by students, for the purpose of increasing her capacity to control student behaviour.

Controlling behaviour with audio cues

> I do [use the audio cues] from time to time when the class is actually doing the wrong thing. I will just pick one kid and give them a positive point; it does actually shut the class up. It's really interesting, they just go who got the plus, let's all be good then. So the little ding is quite good. (Max)

The excerpt above demonstrates how Max, like some other teachers, used ClassDojo's positive audio cue to collectively modify the behaviour of students in his class. He explained that he would use the positive sound at times when he noticed most students in class doing the wrong thing. Rather than handing out negative feedback in this situation, he would instead give out a 'positive' point to a student, in a seemingly indiscriminate manner, which would create a ding sound that chimed across the classroom. When his students heard this sound they modified their behaviour immediately. Max suggested that the public nature of the 'positive' feedback, which informs all students that feedback has been given, encouraged all students to modify their behaviour in positive ways. This drew the attention of all students to the behaviour of their peers. Hence, it appears Max used the ding of 'positive' feedback strategically, not to recognise or reinforce the behaviour of students the feedback is given to through ClassDojo, but rather to provoke an immediate change in the behaviour of all students collectively when he feels their behaviour requires it.

Other teachers indicated that they used feedback audio cues in similar ways to Max yet some did this in isolation without broadcasting ClassDojo as a visual aid:

> I do use the audio cues. It's amazing how when you're working on the floor with a little group and a couple of kids are off task, giving out that one ding can make everyone turn around and focus, even if the screen's not on or on a different page. It's like having a superpower; it's great. (Teacher 2 transcript, Australian primary school teacher)

The above excerpt demonstrates the way ClassDojo's audio cues on their own are used by some teachers to regulate student behaviour. Here this teacher described how the ding of 'positive' feedback alone functioned to refocus her students' attention.

Another way teachers used ClassDojo's audio cues to modify student behaviour relates specifically to the use of 'needs work' feedback. Some teachers used the buzz sound of 'needs work' feedback to modify the behaviour of specific students, rather than collectively as noted above. To achieve this individualised purpose teachers would verbally identify the students to which the 'needs work' feedback audio was directed. Max described how he did this:

> And sometimes the negative point is good. When I give a negative point, I tell the kids straight away, I'd be like you and you got the negative because you were loud. Generally, yeah, the audio cues do tend to work to get my kids focussed. They're good. (Max)

Max, like some other teachers, named the student(s) he gave the buzz of negative feedback to stop them from performing certain behaviours. By doing this Max identified whom he directed the feedback toward, thus removing its anonymity. This anonymised characteristic appears to be something that Max has sought to eliminate entirely, by naming students immediately after the audio cue occurs. Without such verbal identification negative feedback is delivered without an identifying marker, even when displayed visually across a screen – apart from the numerical change it produces to a students' behaviour score. In this way, Max used an approach that publicised student feedback in two ways, firstly, through the buzz sound of negative feedback, which informed Max's students that he had noticed an unproductive behaviour, and secondly, by verbally identifying the students the feedback is directed toward. Hence, Max employed this technique for the purpose of modifying student behaviour.

In summary, this section has reported the finding that teachers and schools use ClassDojo to shape the behaviour of students through techniques of control. It described four main ways that teachers and schools used ClassDojo to do this:

a) codifying behaviour with ClassDojo;
b) using points and prizes to control student behaviour;
c) creating a micro-economy of students and their behaviour by exchanging feedback points for rewards; and
d) controlling behaviour with audio cues.

This finding demonstrated how teachers and schools used specific features and functions within ClassDojo to control student behaviour. It showed that many of these features and functions are interrelated and often operated in conjunction with each other. For example, ClassDojo's feedback behaviours, their associated point values and audio cues, and students' datafied behaviour scores, cut across the different ways teachers used ClassDojo, and in some cases operated together within one practice. ClassDojo's features and functions thus manifested in teachers' practices as rewards and sanctions, codified behaviour frameworks, and the creation of students' behavioural data profiles. Furthermore, the application of these practices and the reasons provided by teachers for using them suggest the platform is being used to shape and control student behaviour. Thus, this section demonstrates the multiple interrelated ways teachers and schools used ClassDojo to shape student behaviour through techniques of control. Such techniques lead us into the next section as they often relied on the use of surveillance to establish and enhance their effects.

Surveillance and making students visible

The following section reports the finding that *teachers and schools use ClassDojo as a surveillance technology to monitor and make students and their behaviour visible*. That is, they use it to keep a record of, display and track students and their behaviour. From the analysis of the data five main categories were established that help explain how teachers and schools use ClassDojo as a surveillance technology to monitor and make students and their behaviour visible:

a) rendering students visible by broadcasting ClassDojo feedback and data;
b) amplifying the visibility of students by combining ClassDojo data with traditional methods of managing behaviour;
c) sharing authority to use ClassDojo with others in ways that maintain and extend student surveillance;
d) expanding ClassDojo's gaze beyond the classroom; and
e) expanding the parental gaze through ClassDojo.

Beyond that, it presents the practices of surveillance and visibilising students made possible by ClassDojo, and the extent to which teachers and schools use such practices for the purpose of governing student conduct. Furthermore, it sheds light on the ways teachers and schools use ClassDojo to represent a data-centric behaviour-focussed depiction of reality which permeates classrooms, schools and students' homes. In sum, it

brings together ClassDojo's behavioural features and the underpinning logic of surveillance that drives their application as behaviour-shaping techniques.

Rendering students visible through publicly broadcasting feedback and data

> The first four days of the week it's up on the screen. And then I hide it. We try to make it a bit suspenseful by not knowing who the winner's going to be, so their names are on the board, but they can't see their points for Fridays. And then I get students to do a ClassDojo reflection at the end of the week in lieu of a diary and that has to be shown to parents and signed. I've done that as a way to let their parents know about their behaviour. (Max)

Like Max, many teachers rendered students visible by publicly broadcasting ClassDojo's class list onto screens. In the excerpt above Max demonstrates the main way teachers used ClassDojo to increase the visibility of students in his classroom.

Max used ClassDojo to publicly broadcast students' individual behaviour to the rest of the class. This information was displayed using the ClassDojo user interface, which lists all students in the classroom, along with their behaviour scores, and any feedback that he had provided (see Figure 2 for a generic example). When used in this way real-time feedback on student behaviour is communicated briefly across the screen to the rest of the class. If the feedback is positive, the information displayed includes the name of the awarded behaviour, its numerical value and the avatar of the recipient. If the feedback is negative, the same information is displayed with the exception of the students' avatar. As Max explains, this information was on view from Monday through to Thursday, with scores hidden each Friday ahead of an end-of-week reveal which identified the student with the highest score.

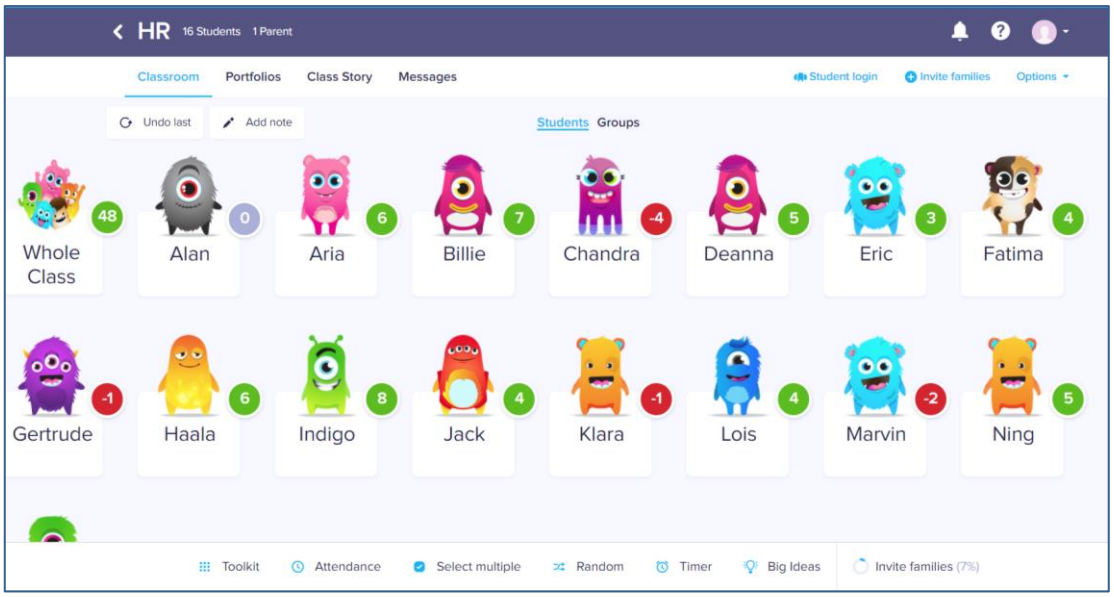


Figure 2 ClassDojo class list interface

Publicising student data in this way allowed Max to further gamify student behaviour and discipline within his classroom, using feedback points as a commodity to establish competition and recognise those students who most strongly adhered to the positive behaviours within his ClassDojo feedback framework. By broadcasting scores publicly, Max used ClassDojo to enable his students to track their position relative to their peers, creating a competitive environment which persuaded students to perform behaviours that would earn them 'positive' points and improve the scores by which they were ranked.

Like Max, many other teachers used ClassDojo in ways that rendered students visible to the rest of the class; however, there were differences in the way these data were used. While Max broadcast ClassDojo scores as a means of monitoring self and peer behaviour, one teacher suggested that they used this process to make the way in which behaviour was appraised more transparent. As the teacher explained:

> I use ClassDojo on a daily basis. I project ClassDojo at the beginning of the period so students can know how many points they have at the beginning. Before the bell rings for the end of the period I projected it again and students see how many points they received for that day. The most important part of ClassDojo is that students get to see how their classroom behaviour is graded in class. Students are aware of how they are doing. (US middle school teacher, teacher review)

By publicising student data in this way, the teacher used ClassDojo to allow students to appraise their own behaviour by comparing their scores at the beginning and end of the

lesson. This meant that the way the teacher assessed students' behaviour was presented as a transparent process – students were able to reflect on their own behaviour throughout the lesson and compare that with the change in their ClassDojo behavioural score. Through this process, the teacher normalised number-based understandings of behaviour and embedded the routine monitoring of behavioural data into the student learning experience.

Another way teachers used ClassDojo differently to Max was related to how often they publicly broadcast behavioural data, and the type of data they broadcast. Some teachers opted to use ClassDojo to display individual data all the time, overlooking the more competitive element of 'suspense' that Max introduced at the end of each week. As one explained:

> Jamie: If I was to observe a typical day in your classroom, how would I see you using ClassDojo?
>
> Teacher: I have a large interactive whiteboard that sits to one side of the classroom and this is the screen that you see all day (points to large whiteboard screen which has the teacher's ClassDojo class list broadcast across it), and I use it all day. (Teacher 5 transcript, Australian primary school teacher)

This example demonstrates how some teachers broadcast ClassDojo unremittingly throughout the school week to publicly broadcast student behavioural data. This practice creates an environment in which students can be monitored by any individual within the classroom, including teachers, students, teaching aids, parents and others at any point in time. As such, ClassDojo was being utilised with the express intention of ensuring that students were *always* visible.

One teacher increased the visibility of students by broadcasting their class and individual student reports onto the class screen, as the following comment describes:

> The best part was at the end of the day we threw up the class average and reviewed it together, talked about what we did well and what we wanted to improve for tomorrow. Each student also had the chance to review their own report on the board. It was funny because even if I didn't speak to a child about their behavior, they knew when they did poorly and did not want their score projected. (teacher, weblog comment)

As part of their daily behaviour review, this teacher broadcast both the class and individual student reports. This practice was conducted with the intention of enabling the class and

teacher to appraise students' behaviour collectively, as well as individually. Class data were made visible through what the teacher referred to as the 'class average', but also individually, through publicising student reports, which document student behaviour and the feedback received in greater detail. As opposed to the other examples in which teachers displayed only a single colour-coded behaviour score for each student, this teacher used ClassDojo to display a 'positive' feedback percentage, total positive and 'needs work' feedback points, and a colour-coded differentiated feedback pie chart for every student. While still being used to broadcast the behavioural performance of each student, the amount of detail revealed about each student through this practice served to shame those children who had behaved poorly, and publicise their poor performance, in detail, to the rest of the class.

Amplifying the visibility of students by combining ClassDojo data with traditional methods of managing behaviour

> This whole screen I project on my projector everyday (here the teacher referred to the ClassDojo class list displayed on her whiteboard).
>
> So, here's what it looks like in my classroom, so I have a rainbow clip chart that my kids work on clipping up and clipping down, and yes they can clip off the top and clip off the bottom. At five [ClassDojo] points they get a clip up to blue, at ten points they get a clip up to purple, at fifteen points they get to change their avatar, at twenty points they get a clip up to pink and get to do a QR code … and then I will wear their clip at twenty five points, and then at thirty points our principal … can wear the clip for the rest of the day. (US primary school teacher, video document)

The excerpt above illustrates how some teachers amplified the visibility of their students by merging student data from ClassDojo with traditional behaviour charts that hang on classroom walls. The teacher above described how she used student data generated within ClassDojo to position and move her students along a behaviour clip chart. The chart consisted of seven colour-coded, vertically ordered boxes. Each box on the chart represented a different behaviour category from the worst at the bottom up to the best at the top (see Figure 3). The teacher used pegs with students' names on them to position and move students along the chart. Thus, each student would move up or down the chart according to the feedback points they received. In effect, such a display functioned as a class leaderboard that remained visible to all within the class. In developing such a system, this teacher transformed and reconfigured student data from within ClassDojo in a way that represented students on a behaviour chart. Therefore, like some other teachers, she

used ClassDojo to publicise student data about behaviour in two ways: by broadcasting it across her whiteboard, and through the behaviour clip chart displayed on the wall.

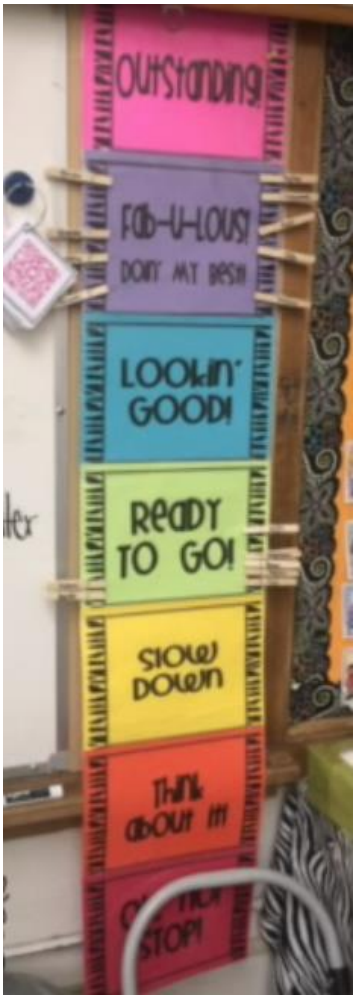


Figure 3 Behaviour wall chart (video document screenshot)

Another way some teachers used student feedback data to make students visible was by putting students' names on wall displays that publicised the number of feedback points students acquired. One way teachers implemented such displays was by creating feedback point benchmarks. One teacher described using the display in Figure 4 for such reasons:

> I will be using Class Dojo this year. I will add students' names to the 'Hall of Fame' as they reach certain points values.

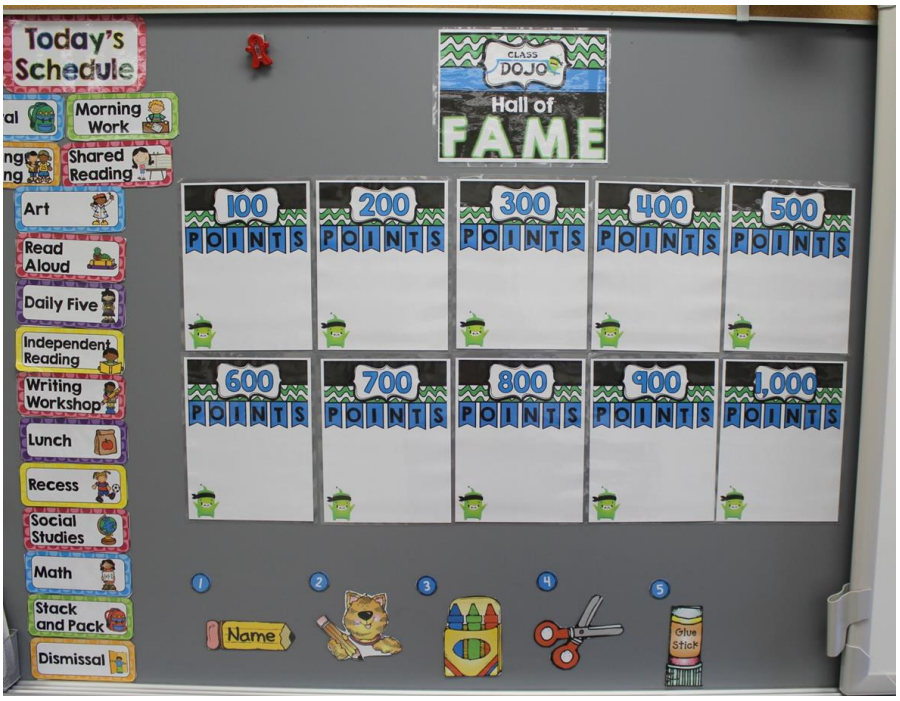


Figure 4 ClassDojo hall of fame wall display (US primary school teacher, weblog post)

Used in this way, students are made visible and monitored via a wall display according to the number of ClassDojo feedback points they accumulate. The name of the display, 'ClassDojo Hall of Fame', indicates that the display is used to recognise students who are good at accumulating feedback points. The display is divided into 10 separate segments of increasing value measured with feedback points. Students' names appear on the display when they acquire the first benchmark, one hundred feedback points. Once a students' name is displayed it will likely remain on the display and move along it as they reach subsequent benchmarks. Therefore, students are made visible on a display within which their position reflects the number of feedback points they have acquired. In this way, the display functions as an enduring performance scale upon which students can be monitored over time. Such a display enables simple and instant judgements and comparisons to be made according to students' positions on the display by anybody in the classroom.

Another way some teachers have made students visible by publicising their ClassDojo feedback data was through the use of brag tags. Brag tags are small displayable material items that advertise an achievement. Below is an advertisement for ClassDojo brag tags posted by a teacher in an online educational marketplace. It describes how her ClassDojo brag tags can be used, and includes several comments from teachers explaining how they have used, or intend to use, them.



Figure 5 ClassDojo brag tags advert



Figure 6 ClassDojo brag tags product

This pack includes Brag Tags to celebrate Class Dojo achievements in 10 point increments, from 10 to 100.

WHAT ARE BRAG TAGS?

Brag tags are tags that you can give to students for positive reinforcement. Students can wear brag tags on necklaces at school or they can be clipped on to backpacks with binder rings. Just print on card stock and laminate and you'll be good to go!

Comments:

Love these have been using them all year! I only wish they went up even higher! I have some kiddos that have gotten to 120 and even 130 points each quarter.

The graphics are fantastic and my kiddos will be so excited to proudly sport these [brag tags] around school! Thank you so much!

I just love using ClassDojo for motivation! This is just another tool to make students proud of their great behavior.

> I love brag tags as a way for students to show off their perfect behavior or academics! (teacher comments, website)

As indicated above, teachers use ClassDojo brag tags to publicise students' ClassDojo feedback data not only in classrooms, but across the entire school. Rather than displaying student data on classroom walls, ClassDojo brag tags are designed to be worn on clothing or attached to students' bags. In this way student feedback data are publicised from a student's body and move with them whenever they move. ClassDojo brag tags thus create a form of mobile and continuous data broadcasting. Thus, teachers display data through ClassDojo brag tags to recognise, and inform others of, students who are well behaved. Moreover, such displays establish a hierarchy of behaviour performance among students, which some teachers use to motivate students to behave in ways that will earn them more 'positive' points.

Sharing the authority to use ClassDojo with others in ways that maintain and extend student surveillance

> When my class goes to PE or drama, I send a behaviour chart with them that the teacher can fill out. So if a student's been great in that lesson, the teacher can give them a 1 and they can get a point, or if they've done the wrong thing, the teacher can give them a 2 and I'll take away a point. So indirectly the other teachers of the school give and take points. (Max)

Here Max explained how he designated authority for monitoring behaviour to other teaching staff in order to maintain surveillance of his students. Specialist teachers were asked to record feedback about student behaviour on paper using a numbered behaviour scale, which Max consolidated and integrated into ClassDojo feedback points. By sharing authority and employing this conversion strategy, Max extended the extent to which his students' behaviour was surveilled outside of his own classroom. Furthermore, this extended ClassDojo's jurisdiction by applying its behaviour categorisations across the school environment more broadly.

Other teachers similarly delegated authority to other staff to use ClassDojo with their students, but in different ways. One teacher explained:

> I also leave my information for substitute teachers. When I am out of the building I can still get [behavioural] updates on how my children are doing throughout the school day by logging into ClassDojo! Trust me your students will be super surprised when they find out you knew that they were running with scissors in art BEFORE even talking to the teacher that they won't try

> that again! Warning: this can be a great thing but can also add stress to your day off! :) (US primary school teacher, weblog post)

By leaving her ClassDojo log-in details for the substitute teacher, this teacher encouraged the continued use of the platform in her absence to maintain a consistent approach to managing student behaviour. In addition to continuing ClassDojo's use, the excerpt shows how sharing authority in such a way established an additional layer of surveillance. This teacher used the continued access to ClassDojo data via the platform, which is updated in real time, to maintain her gaze over her students' behaviour. Therefore, both the substitute teacher and the absent regular teacher were monitoring students' behaviour.

Although teachers found their own ways of delegating authority, sharing permission for other teachers to use ClassDojo is a function which can be performed on the platform itself. ClassDojo's 'co-teacher' feature allows registered teacher account holders to share their class by adding co-teachers. As the ClassDojo website explains, this feature 'allows you to give another teacher access to your class so they can award students in that class points … [the data recorded when points are awarded] will reflect which teacher gave what points' (ClassDojo, n.d.). Some teachers described using this feature in their own practice. For example:

> Recess duty. There are always a handful of kids who ask to use the restroom during outdoor recess. My teammates and I all have access to each other's classrooms on Dojo. This means that I have the ability to record any student from the entire grade level who goes inside, what time they left, and what time they returned. All from the Dojo app on my phone in a matter of seconds. (US primary school teacher, weblog post)

In this instance, the teacher and her colleagues had shared access to each other's classes on ClassDojo so that they were able to surveil the behaviour of students across multiple classes quickly and easily. In this way, ClassDojo enabled this group of teachers to expand their capacity to monitor students, both their own and those from other classes. This practice of continued surveillance meant that data which identified a student's location, time of entry and time of exit would be collected for every student within an entire grade. Further to this, ClassDojo's smartphone capability meant that student observations could be conducted and recorded instantaneously, and in locations where teachers did not have access to personal computers. Consequently, every teacher from that grade level had the capability to monitor students at any time, and in any place, while at school.

While sharing authority to use ClassDojo with other teachers was not uncommon, a smaller number of teachers reported sharing this authority with their own students. As the following teacher explains, she gave her students the authority to grade their peers in ClassDojo on a rotational basis:

> Jamie: You were saying earlier that you have a silver star–
>
> Teacher: Yeah, shining star.
>
> Jamie: And is that a student that's been chosen to give out points?
>
> Teacher: Yep, so we have a pop stick. They all take a turn, and whoever was the shining star the day before, chooses the next one, and they wear a big badge.
>
> Jamie: And so, the shining star gets to award Dojo points?
>
> Teacher: Yeah, to people that they see working really well. It's not usually that many. I usually try and keep it a little bit smaller than that list, but she got carried away today. (Teacher 3 transcript, Australian primary school teacher)

In this class, students were designated as the class 'shining star' on a rotational basis, and as part of that role they received the authority to give their peers ClassDojo feedback. Authority was shared with one student at a time, lasting for one day, after which it was transferred to another student. As such, this system of authority sharing denotes an exclusive privilege for the 'shining star' through their role as an arbiter of behavioural feedback. However, the teacher provided a level of oversight of the way shining stars used ClassDojo for feedback. She pointed out that shining stars were not provided with complete authority to administer all types of ClassDojo feedback; rather, they were confined to giving feedback to students who were 'working really well'. Additionally, the amount of ClassDojo feedback a shining star was permitted to provide their peers was limited by the teacher. In their role as 'shining stars' students were encouraged to monitor the behaviour of their peers and make judgements about who was a good worker. Such decisions were materialised through ClassDojo feedback points and established the 'shining star' as an additional supervisory gaze over student behaviour in the classroom.

Max also shared authority with students so they could give their peers feedback on their behaviour; however, this was done in a different way, as he described: 'if I need to run to the photocopier, it's only just a classroom away, I'll say, "So and so's in charge and if they

tell me you talked, you'll get a minus"' (Max). Here, Max shared the authority to administer ClassDojo feedback with a selected student from his class when he was not in the classroom. In this way, Max created a student informant whom he provided authority to monitor their peers and report back to Max with feedback about their behaviour. The selected student was asked to act as a behavioural supervisor who maintains a ClassDojo-driven gaze over the class. Much like the way Max transferred feedback provided by other teachers into ClassDojo, it appears he carried out a similar process here by transferring feedback provided by the student into ClassDojo.

Expanding ClassDojo's gaze beyond the classroom

> Much like many other elementary schools our children go to specials each day of the week. At our school, students go to gym, music, science, art, library, etc. That is a lot of classrooms and a lot of different teachers! I was able to share my ClassDojo information with other teachers so that they too could use ClassDojo on their mobile devices. This created consistency amongst the teachers and also let me know if a child was misbehaving while not in my classroom. Trust me … your students will be super surprised when they find out you knew that they were running with scissors in art … and will be so mortified that you found out BEFORE even talking to the teacher that they won't try that again! (US primary school teacher, weblog post)

Through her use of ClassDojo, this teacher, like some others, substantially expanded the gaze ClassDojo cast over her students through its expansion into a range of additional school settings. This practice potentially creates a situation where students are subject to monitoring via ClassDojo within every class they attend. The teacher in the above excerpt explained that she has implemented this practice to provide her students with a consistent disciplinary approach. Consequently, the greater the number of settings within which ClassDojo is used for student feedback, the greater the level of student monitoring and data generation. The above teacher pointed out that expanding ClassDojo's use into other settings has provided her with an expanded gaze over her students' behaviour. This is because she can monitor the feedback data generated about her students while in other settings. She views this practice of concealed observation as an effective discipline strategy, explaining that its value lies in demonstrating to students that her gaze over their conduct reaches into other teachers' classes. Moreover, the effect she attributes to this far-reaching gaze is deterring unwanted behaviours in her students.

Similarly, another way some schools and teachers inserted ClassDojo into settings other than the classroom was by enabling other teachers, as well as non-teaching staff, to use it

for student monitoring and feedback purposes. For example, the teacher below described how their school enabled a range of teaching and non-teaching staff to use ClassDojo to monitor student behaviour across an entire school building. To contextualise the example somewhat, it was established through publicly available information that this school possessed a student population of more than four hundred at the time the comment was made and was comprised of two large buildings. A teacher from the school explained:

> We have adopted ClassDojo throughout the entire building this year so that lunch aides, recess staff, office staff, specialists, resource teachers and even custodians[8] are all linked in to ClassDojo so they also have opportunities to award points for positive behavior. (US primary school teacher, weblog comment)

The above example demonstrates the way in which ClassDojo's use can penetrate not only settings within which students receive instruction, but any setting occupied by adult school staff permitted to use the platform. Given the individuals that were tasked with monitoring student behaviour and the school characteristics described above, ClassDojo was likely used in a wide assortment of settings, including classrooms, hallways, the resource centre, schoolyard and more. Thus, when used in such ways ClassDojo reaches into a greater range of school settings, through the actions of an greater number of school staff, to establish a near totalising gaze over students and their behaviour.

Another way some teachers have used ClassDojo in ways that extend its gaze over students and their conduct was by using the platform on their mobile devices when they took their class into settings away from the classroom. Max explained:

> I've got ClassDojo on my phone so if we're in assembly, it's real easy if I see someone doing the right thing, I can give them a point. Or the kids see you pull it out when you're outside or something, it can be helpful, even on excursions or something like that. If they see you, see you're still doing points, it can be a little thing that helps keep them focussed outside of the classroom. (Max)

It is evident from this excerpt that Max used ClassDojo to monitor and provide feedback to his students not only in the classroom, but in a range of settings beyond the classroom. Max described how he maintained his use of ClassDojo to hand out student feedback when he took his class to assembly, on excursions, and to any outside environment. He remarked that using ClassDojo in such settings was easy and he had done so through his

[8] School custodians are also known as janitors.

smartphone. Consequently, the monitoring of students and generation of data that accompanies the giving of ClassDojo feedback was maintained, and through such use expanded into settings outside of the classroom. Max pointed out that the visibility of this continuous application of feedback has an influence on student behaviour. He implied that he used ClassDojo in such settings to keep students focussed, and that even the mere impression of using ClassDojo from his phone had an influence on the conduct of his students. Therefore, it appears that Max has used ClassDojo to expand his gaze over students and their behaviour into settings beyond the classroom for the purpose of shaping student conduct.

Another way ClassDojo's gaze has been expanded beyond classrooms by a small number of schools was through its dedicated implementation in non-classroom settings, such as the cafeteria. The following example demonstrates one such case and shows how one school has used ClassDojo to make a specific non-classroom setting a highly monitored environment. In an explanatory video created for the school's students a school staff member explained:

> Boys and girls, I hope you're having a great first day coming back to Stateside Elementary, and you've had a great summer. I want to let you know that we'll be doing something a little bit different in the cafeteria this year. It's called ClassDojo. As you can see, each of your teachers has an account with an avatar beside it, and each of you will be given points each day regarding your behaviour in the cafeteria. So I just want to give you an example of how this works. Let's say that you are in Ms Grey's class, OK? In Ms Grey's class, and actually in all the classes, you can get points for picking up after yourself, staying seated, using good manners, using your inside voice. So there's four different possibilities of points each day, and you can also have one point taken away for not following procedures. So each day you will have something like this, so for example Ms Grey, let's say if the lunchroom monitor decides someone's doing a really good job of using their inside voice they will click on 'using inside voice' [loud ding sound heard], and as you can see this [box] pops up at the bottom [the box displayed Ms Grey's avatar and +1 for Using Inside Voice!] letting everybody in the cafeteria know. You'll be able to see it on the projector screen that Ms Grey's class got one point.

At this point in the video, the narrator provided two more visual demonstrations using Ms Grey and Ms Red's class avatars to explain how a 'positive' feedback point might be given by a lunchroom monitor to a student, then continued:

> So as you can see [Ms Grey's] little bubble changes to a two for positive points. Ms Red has one. So each day you are allowed to get up to four points a day and you can also have points taken away. At the end of the week your

> teacher has an account, and if your class gets just one point a day, that's five points by Friday, you will get extra recess time. If at the end of the month each class, we will look at each class, and the class with the most points in the grade level, you will get an additional thirty minutes of an activity of your choice. So you may choose to have extra recess, you may have computer time, you may have a pyjama party, whatever you would like to do for about thirty minutes at the end of the month. Also, I do want to let you know that if any class has below 60 per cent of good behaviour, that basically means that you've probably got a little more negative points than you do positive, then you are going to be having silent lunch one day the following week. So just make sure that you have a bunch of positive points and not any negative points so that you can stay above that 60 per cent. So I hope each of you [students] understands what we'll be doing in the cafeteria, and we will be starting it on Monday. So make sure you're watching the screen and watching your points.[9] (US primary school, video document)

By using ClassDojo to closely monitor and provide feedback to students about their behaviour in the school cafeteria, this school transformed its cafeteria into a site of student surveillance.

Regarding the technical aspects of using ClassDojo in such a way, the school created a class within its ClassDojo account which it labelled cafeteria. The cafeteria class was then populated with avatars representing each of the school's teachers; there were 44 teachers in total. This meant that a teacher profile had been created for each teacher within ClassDojo. When feedback was given to a student it was recorded in their teacher's profile. In this way the teacher's ClassDojo profile accumulated and represented all feedback received by all students within that class, establishing a class-based cumulative record of behavioural data. Configuring ClassDojo in such a way enabled anybody logged into the school's account to provide feedback to any student in the school. This meant that all feedback data were recorded anonymously.

The school used ClassDojo to give students feedback about their behaviour in the cafeteria every day. This meant students were being monitored in a setting outside of their classrooms, and at times outside of standard allocated learning times. While those responsible for giving out ClassDojo feedback were not explicitly discussed, lunchroom

[9] This transcript represents the narration that overlaid the video picture, which simultaneously provided a visual display of the ClassDojo interface on which a user demonstrated how feedback points were given.

monitors[10] were referred to in one example in the video. When feedback was given, it was publicised by being broadcast across a screen that made it visible to everyone in the cafeteria. Students were encouraged to keep track of their class's behaviour performance by monitoring their class teacher's behaviour score on the public screen. Teachers and school administrators tracked the behaviour of classes through the data, behaviour scores and 'positive' feedback percentages, stored and displayed in teacher profiles. Such tracking of data was carried out both at the individual class level and the school level across all classes of the same grade. The tracking was used to evaluate behaviour and reward or punish classes on the basis of such evaluations. Therefore, the above school has extended ClassDojo's reach from dedicated teaching and learning school settings into the cafeteria. Moreover, not only were students monitored individually within the cafeteria, but they were monitored collectively within their classes through the data produced by such monitoring. Thus, by using ClassDojo in such ways, and concentrating its application within the cafeteria, this school has expanded ClassDojo's gaze beyond classrooms settings and the temporal bounds of structured learning times.

Expanding the parental gaze through ClassDojo

> Yes, [parents are notified every time I give a student feedback,] as long as they have their notifications on. One thing I have done to help me not get messages from parents when they see a negative behaviour is to put in a reason anytime I give negative feedback. So I tend to do that … I've found that's useful too if a student ever says, 'Why have I got a negative?' or the parent comes in to talk about their kid's behaviour. I'm just keeping myself covered in case they do that. I can actually go back through the points I've given and go, well, actually it says here they were walking around the classroom when they should've been sitting and reading. I can keep track of it all by doing that. (Max)

Max used ClassDojo's in-app behaviour notifications as a way of engaging his students' parents with their children's schooling. In-app notifications is a feature within ClassDojo that automatically notifies parents in real time when their child receives ClassDojo feedback. This meant that each time Max provided a student with feedback through the platform the parent of that child would be notified through their own ClassDojo account. A comment from another parent, not from Max's class, illustrates the level of monitoring that notifications can incite: 'I feel like my son keeps getting negative points every few

[10] Lunchroom monitors are typically employed school staff in the United States. Their role is a non-teaching one, is largely supervisory, and often includes monitoring student behaviour.

minutes. I get a general idea of his "bad" behavior such as *Not making a smart choice* or *Disrespect*' (primary school parent, weblog comment). Such notifications appear within parent accounts as a small red bubble above a child's avatar. Parents must then tap on the bubble to view a summary of recent feedback presented as a behavioural ledger (see Figure 7). Through this practice Max was engaging parents in a way that facilitated parental monitoring of his students via the behavioural data produced about them within ClassDojo. That is, parental engagement took the form of data-based student surveillance which was confined to judgements about behaviour.

As a result of using in-app notifications Max augmented the way he provided students with 'needs work' feedback. He included an optional qualitative component to the 'needs work' feedback he gave students, thus adding an additional layer of detail to the behavioural information parents could monitor. He made this change both to prevent parents questioning negative feedback, and to generate a data record that he could monitor and draw on to justify such feedback. In making such a change Max enhanced the visibility of student behaviour available to parents for monitoring.

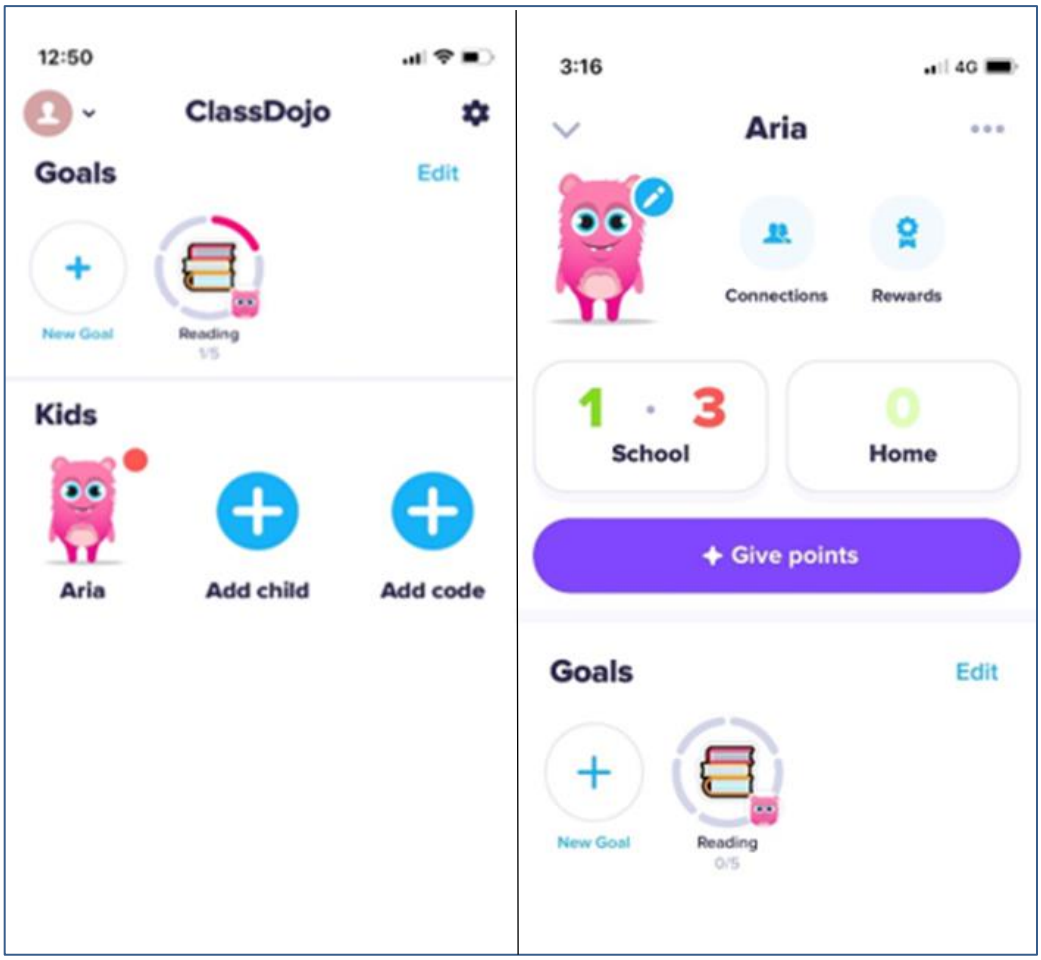


Figure 7 Parent notification screen (left), and feedback summary screen (right)

Many teachers and schools used ClassDojo student reports to expand parents' gaze over their children's behaviour at school. This is a practice that is encouraged and facilitated in part by ClassDojo itself via the automated emails it sends parent account holders, as this teacher explained: 'Once [parents] connect [to ClassDojo], they receive an email every Friday reminding them to view their child's reports' (US primary school teacher, weblog post). For the most part, teachers indicated that they encouraged parents to view ClassDojo reports as a way to keep them informed about their child's behaviour at school. Moreover, under this broad umbrella of keeping parents informed, teachers encouraged parents to track their child's behaviour through ClassDojo reports and use them to reinforce school behavioural norms at home.

The below communication from a teacher to parents illustrates how some teachers have used students' ClassDojo reports to engage parents with their child's schooling. She informed parents:

> Class Dojo is one of the main ways that I will communicate with you. It will be updated daily, and you can view a report on your child's attendance, participation, and behavior by using the app or the website. You may keep track of your child's progress each day on Class Dojo so that you can celebrate with them, or help me to encourage them to make better choices for those areas in which they could improve. (US primary school teacher, school communication)

The teacher above used ClassDojo reports as one of the main ways to engage parents with their children's schooling. Parents were told that reports could be checked daily and were easy to access, kept up to date, and contained information about their child's behaviour. Moreover, due to such characteristics the teacher suggested that parents could use reports to track their children's behaviour and reinforce the behavioural appraisals within them. In this way, teachers encouraged parents to engage with their children's ClassDojo reports frequently. Furthermore, such engagement was confined to that which is displayed via data, predominantly concerned students' behaviour, and functioned as a form of surveillance.

Similarly, the following teacher used ClassDojo reports to engage parents; however, she recruited her students to encourage their own parents to interact with reports. She explained:

> For my kids WITH internet, Class Dojo has an AMAZING messaging feature which I'm just slightly obsessed with (in a healthy way don't worry). If a parent commented on their child's report at least ONCE, that child received $5 to spend at our store.
>
> Three of my kids did not have internet so every week I printed out a report from them. If it came back signed they received $5.
>
> This is great in the middle of the year if a parent forgets to check their e-mail, I can rest assured that they will because their child will be begging them to check their report so they can get that $5. (US primary school teacher, weblog post)

While this teacher used ClassDojo reports to engage parents in a similar way to the previous excerpt, what is different is that she induced students to ensure such engagement occurred. She did this by integrating parental engagement with ClassDojo reports into the classroom economy. It seems that she implemented this strategy to mitigate the problem of parents not reading the weekly email sent by ClassDojo which reminded them to check their child's report. This means parents were encouraged routinely to view ClassDojo

reports by ClassDojo and their own children. In this way, students were enticed into promoting and facilitating the monitoring of their own behaviour by their parents, through the data contained within ClassDojo reports. Therefore, this teacher installed a system encouraging parental engagement which involved two processes of surveillance tethered to one another: the monitoring of children by their parents via student reports, and the monitoring of parents by the teacher via ClassDojo's messaging feature.

Lastly, some teachers and schools used ClassDojo's private messaging feature to expand the gaze of parents into their child's schooling. ClassDojo's messaging feature provides teachers and parents with a private medium through which to communicate. Like all other teachers, the teacher below used ClassDojo messaging to notify parents about issues concerning their child's behaviour. The teacher explained:

> I also use ClassDojo to message parents individually just about kids' behaviour, if they did something really good for the day, or if they ended up in reflection class or at the office for anything really … I've had a couple of parents message and say, 'Oh, my son lost points for this. What was that about?' And I can say, 'Oh, it was for this'. Or if a child's gone to the office I'll just message them and say, 'Just letting you know such and such went to the office today for this behaviour'. And then they can have a chat to them at home about it. (Teacher 1 transcript, Australian primary school teacher)

This teacher used messages to inform parents about their children's behaviour, but in a way that appears to have supplemented the information contained within in-app notifications and student reports. She sent parents messages about noteworthy behaviour, how some of the negative behaviours were addressed, and explanations for why some feedback was administered. Thus, she used private messages not only as an additional mode through which to notify parents about behaviour, but to distribute a different kind of information about behaviour. In addition to this function of increasing the volume and type of behavioural information provided to parents, it appears that messages served to co-opt parents as correctional resources in the home by encouraging conversations about unproductive behaviour. All in all, when teachers use ClassDojo messaging in such ways parents are provided with an expanded gaze over their children's behaviour at school. This way of using ClassDojo subsequently provides a greater range of behavioural information to parents and can operate in conjunction with other mechanisms of surveillance to establish a matrix of behavioural data for observation.

In summary, this section has reported the finding that *teachers and schools use ClassDojo as a surveillance technology to monitor and make students and their behaviour visible*. It outlined the five prominent ways that teachers and schools did this:

a) rendering students visible by publicly broadcasting feedback and data;
b) amplifying the visibility of students by combining data with traditional methods of managing behaviour;
c) sharing authority to use ClassDojo with others in ways that maintain and extend student surveillance;
d) expanding ClassDojo's gaze beyond the classroom; and
e) expanding the parental gaze through ClassDojo.

Using ClassDojo in these ways demonstrates how the act of making students visible and surveilling their behaviour constitutes a core feature of the way ClassDojo functions as a disciplinary tool. Students are made visible and surveilled in two ways: through the direct observation of their activity – which is recorded in ClassDojo as data – and through the displaying and monitoring of that data. Moreover, such processes occur entirely through the prism of ClassDojo, which shapes what is made visible, and how it can be understood and tracked. When teachers use ClassDojo to record and monitor students and their behaviour they create a data-centric representation of reality that opens up a range of new possibilities for surveilling students. Many teachers chose to broadcast ClassDojo data across classroom screens, while some also duplicated it by reconfiguring and re-displaying it through non-digital technologies such as behaviour charts pinned on walls. The extent to which such displays were used by teachers varied from unceasingly to strategic periodic broadcasting. Many teachers expanded ClassDojo's gaze over student conduct by sharing its use with other teachers, while in some schools this extended to non-teaching staff. This practice of multiplying who was authorised to use ClassDojo to monitor students' behaviour meant that the spaces within which students were being watched extended beyond one classroom, in some cases encompassing entire school buildings. Furthermore, many teachers chose to expand ClassDojo's reach into students' homes via their parents. Teachers encouraged parents to monitor their children through the data generated about them within ClassDojo, as well as through features that reminded them to carry out such monitoring. In this way teachers used ClassDojo to make students more visible and create new possibilities for their parents to surveil them. The reasons teachers and schools used ClassDojo in such ways revolved around students' behaviour. Teachers often explained that they made students and their behaviour visible for the purpose of seeing, tracking,

understanding and shaping students' behaviour. What is more, they did so not only to undertake such tasks themselves, but so students and parents could do so too. Thus, ClassDojo has been used in many ways to make students visible and surveil their behaviour, of which a primary purpose is to make them knowable.

Governing student behaviour with datafied constructions of knowledge

In this section I report the finding that *teachers and schools govern student behaviour with datafied constructions of knowledge*. From the analysis of the uses of data, I established five distinct categories which describe the ways teachers and schools governed student behaviour with datafied constructions of knowledge produced with ClassDojo:

a) using ClassDojo reports as sites of behavioural knowledge;
b) using ClassDojo data to govern behaviour;
c) using ClassDojo data to report on student behaviour;
d) setting goals and measuring success with ClassDojo points; and
e) using ClassDojo data to exclude.

This finding demonstrates how producing knowledge via ClassDojo is invariably intertwined with workings of power and forming knowable subjects, be that the student or the teacher. The finding shows how ClassDojo produces a data-based form, and way, of knowing which teachers and schools have used to reconstitute and govern those it makes known, including in ways that may have profound implications for students' educational futures.

Using ClassDojo reports as sites of behavioural knowledge

> Yeah, so even if I reset the students' points at the start of the week, I can go back and see their points from the last month, the last year, whatever. That doesn't get reset in the reports, which is a really good part of it. You can bring up reports for parents if you notice a problem. You can go look at the reports for how many points so and so has lost for disorganised. You might notice every Monday for the past six weeks they haven't brought their thing … So the reports are actually quite good, we also use them to work out who gets the class pet for the week … we show the students' points to work out the winner and if we have a tie breaker we can do a count back. If we have, say, two students on six points we can look at the reports and see that one actually got seven positive and a minus and the other one got six all positives so the student that had a minus loses on the count back. (Max)

Like many other teachers, Max used the data contained within ClassDojo's student reports as a source of behavioural knowledge to both understand and govern student behaviour. He used the persistent, evolving, time-based and accessible data within ClassDojo reports to identify patterns in student behaviour; inform parents about their children's behaviour; and determine the winners of his class-based rewards competition.

In using reports in such ways, it seems Max valued and used the persistent student data stored in ClassDojo reports as a behavioural record from which to understand students and make them knowable. Such constructions of knowledge, however, confined themselves to those shaped by the information contained with ClassDojo reports and the ways in which it is displayed. In other words, Max used ClassDojo reports as a framework for knowing and understanding his students and their behaviour. For example, he used reports to identify areas of concern in a student's behaviour by looking for patterns in data over time. In particular, he was examining data that compartmentalised students' behaviour into distinct behaviour types and carried out calculations to display them in quantified terms. Thus, Max used reports as a retrievable record of student behaviour.

Max, like some other teachers, also used the data within reports as evidence through which to reconstruct the behaviour of students for the purpose of presenting it to parents. He used such reconstructions to support his judgements and make students knowable to their parents in terms of their behaviour, particularly that which he described as problematic.

Lastly, in a similar way to some other teachers, Max used reports as a data record to determine the winner of behaviour-based class competitions. He used the behavioural feedback data stored in student reports to determine the winner of his weekly competition. He used the student data in ClassDojo to differentiate and order students hierarchically, thus making it possible to designate a winner. In this way, Max established the discrete, segmented, numerical data representing student behaviour as a form of knowledge which forged a strong relationship between competition among students and governing conduct. In sum, Max used ClassDojo's student reports to construct data-based ways of knowing students that serve as a historical record of behaviour, a source from which to report to parents about their children's behaviour and a way to compare students to each other on the basis of behaviour.

Using ClassDojo data to govern behaviour

> Each classroom uses the ClassDojo App to reward and monitor behaviour for learning, adherence to the 3 school rules, key learning behaviours and moving up and down the behaviour ladder. Each positive behaviour comes with a number of dojo points that are collected against individual children and the whole house group.
>
> Each week, points will be analysed for trends in awards/individuals/classes …
>
> Teachers will receive a [ClassDojo] analysis report so that children who are persistently landing on 'think about it', 'Retreat and Reflect' or 'RED' are reminded that they can improve their behaviour.
>
> Each half term, the SLT [senior leadership team] analyse [ClassDojo] reports for classes to ensure that there is consistency in the application of the policy across the school. They will also meet and talk with children whose overall percentage of positive dojos is less than 70%. This gives the children a chance to reflect on why their behaviour is deteriorating and be supported with ways of improving their own behaviour. (UK primary school, behaviour policy)

Similar to some other school policies, the above policy demonstrates how the school guides its staff to generate and incorporate knowledge created from ClassDojo for the purpose of governing the conduct of both students and teachers.

The policy directs the school's teachers to construct a feedback framework with ClassDojo based on the school's rules and a series of specific learning behaviours through which knowledge about students' behaviour will be produced. Such knowledge, along with feedback points, was to be used in classrooms to govern student conduct by representing students on behaviour ladders. In this way, such knowledge is used both by teachers to govern student conduct, and by students to govern themselves in response to the publicisation of such knowledge.

The knowledge constructed through ClassDojo in the school above is not isolated to that pertaining to individual students but extends to producing knowledge about the behaviour of house groups. The school uses this data-based form of knowledge to routinely analyse the behaviour of both individual students and classes. Such knowledge, and subsequent analysis, is used to identify and reinforce those who behave well by recognising them with awards. What is more, it appears knowledge generated through ClassDojo has been used to a) identify students exhibiting unproductive behaviour, b) indicate to these students that their behaviour is a concern and can be improved, and c) support such

students to improve their own behaviour. Both teachers and school leaders use ClassDojo-constructed knowledge for this purpose yet apply different measures to determine when to do so. Teachers do so when students persistently find themselves on the lower segments of classroom behaviour ladders, whereas school leaders do so when students' 'positive' feedback percentage drops below 70 per cent. In this way such knowledge has been used to establish two separate standards for behaviour that function as thresholds for behavioural intervention. Therefore, through this policy document, ClassDojo occupies a central role in constructing knowledge about student behaviour and the ways teachers and school leaders respond to it. The document established ClassDojo's disciplinary methods and processes of producing knowledge as a rationality for understanding behaviour and discipline.

The policy additionally directs school leaders to use knowledge generated through ClassDojo to govern the conduct of teachers. Such knowledge was derived from the same data that was used to understand student behaviour; however, when used with teachers it was understood differently. Rather than understanding such data as a representation of student behaviour, it was instead understood as a representation of a teacher's school discipline practice, specifically that involving ClassDojo. Consequently, the school's leaders used this knowledge to monitor how teachers used ClassDojo to govern student conduct in their classrooms. This knowledge was used to assess whether teachers were complying with the school's policy which outlines the way teachers are expected to use ClassDojo to govern student conduct. Such monitoring was routinised and carried out three times a year at the halfway point of each school term. In this way knowledge produced within ClassDojo has been used to understand and govern the conduct of teachers.

Using ClassDojo data to report on student behaviour

> Because ClassDojo is based on points, and daily, weekly, and monthly reports can be run, it takes the guess work out of assigning cooperation grades. And no longer do I, as a teacher, have to think about a student's behavior when it comes to report cards. It is all laid out for me. If a student has 85% or more positive feedback points, the student earns an E for excellent and so on. (US middle school teacher, teacher review)

The above teacher, like some other teachers and schools, used ClassDojo data to report on student behaviour. The teacher did this by converting ClassDojo behaviour data into a formal grade which was recorded on students' school reports. Such grades were

determined entirely on the basis of the data contained within students' ClassDojo reports. For this teacher, representing student behaviour in the form of feedback points provided a simple way of understanding behaviour that could be easily assessed and converted into a grade. Furthermore, he used student reports to isolate and evaluate data they considered relevant for grading by filtering it according to selected date ranges. Additionally, the way student data are stored and calculated made them simple to retrieve and use when it was time to write student reports. The way ClassDojo represents student behaviour as a percentage provided this teacher with a source of knowledge that he converted into a letter grade to report students' behaviour on formal reports. Ultimately, this teacher viewed ClassDojo's student reports as a convenient source of knowledge that eliminated the need to understand and evaluate student behaviour in other ways. He viewed the knowledge created through its use as organised, accurate and transposable. As a result, ClassDojo was used as a knowledge-producing technology from which students and their behaviour were assessed, and reported on, via formal school reports.

Another way teachers used ClassDojo data to report on student behaviour was by using it with formal school documents, such as Individualised Education Program (IEP) forms and 504 plans. Schools use such documents to assess students' needs, determine appropriate accommodations and supports for students, and plan ways for students to successfully reach educational goals. This teacher explained how ClassDojo can be used to report on student behaviour with these types of documents:

> If any of my students are on a documented behavior plan, IEP, or 504 plan, this is a great system to have data collected. If for example little Johnny has a plan in place to work on behavior and aggression, Class Dojo collects data on how many times I give points to Johnny for displaying positive behavior, or docking points for negative behavior, something that was not as easy to do while teaching before. (UAE teacher, weblog comment)

This teacher ascribed value to the behavioural knowledge produced about students through ClassDojo in terms of its suitability for reporting on student behaviour in official documents schools use to understand and assess students and their needs. The teacher revealed that the data generated from the feedback teachers gave to students through ClassDojo could be used to report on student behaviour. Indeed, it seems the numerical characteristics of such data were viewed as useful for communicating knowledge about students in such documents. Consequently, the above teacher found value in ClassDojo as a technology that simplifies and distils the complexity of behaviour into a set of numbers. When used for such purposes ClassDojo becomes part of the broader architecture of

student monitoring and reporting prescribed by education policy. The teacher and ClassDojo together operate as a data-generating instrument that creates official knowledge used for assessing and reporting on students. This type of knowledge is subsequently used to make decisions about students' future educational opportunities and trajectories.

Setting goals and measuring success with ClassDojo points

> We do SMART Goals at our school … My students actually often use ClassDojo data with their SMART Goals. We have one [SMART Goal] that has to be about behaviour, and they'll often say, 'I want to … and I'll be able to tell if I've been successful by using the Class Dojo points.' So, my students actually use ClassDojo to inform their own learning goals, which is good.
>
> Jamie: Can you just explain what a SMART Goal is?
>
> So, a SMART Goal is a goal that is specific, measurable, attainable, realistic and time based. So, students can't just say, 'I want to be more organised.' They would have to say, for example, 'My goal is to be more organized by the end of the term and I know that I'll be successful because I will measure that by having more positive points for organisation than negative points.' So, they would use ClassDojo data to measure their goals, which is quite useful. (Max)

Max, and his students, used the behavioural knowledge produced within ClassDojo to develop, measure and track learning goals specific to student behaviour. This task, it seems, was brought about due to the implementation of the school's SMART Goal program. This school-wide program required students to develop and work toward achieving a set of individual learning goals, of which one was required to be based on behaviour. Max explained that his students often chose to use ClassDojo as a resource for developing such a goal and integrated the use of ClassDojo data into their goal-setting task. They would use data about themselves from ClassDojo to help select, set and measure personal behavioural learning goals. In this way, Max's students were using ClassDojo as an object of knowledge about themselves constructed via the data generated about them within the platform itself. For such students, ClassDojo data provided a statistical form of knowledge well suited to the task of behavioural goal development they were required to carry out. Students were able to use the compartmentalised data within their own reports to specify and measure an aspect of their behaviour to develop that which could be realistically attained within a set timeframe. Specifically, students would track the data generated, stored and calculated about a single feedback behaviour in their student report

to measure their progress toward attaining the goal they had set for themselves. Thus, ClassDojo data was used by Max's students as a source of knowledge through which to understand and measure their own behaviour for the purpose of reforming themselves and their behaviour.

Many teachers, like Max, used the knowledge produced within ClassDojo for creating and setting student goals; however, there were some differences in how ClassDojo was used to do this. Some teachers used students' 'positive' feedback percentage to set and measure students' goals, rather than feedback point scores. Some incorporated a greater use of ClassDojo student reports and the knowledge within them into the process of developing students' goals. One teacher explained how she used both of these techniques to set behavioural goals with her students:

> Every month, I look at the kids' overall DOJO percentage. Then I make a goal (5%) increase for those students not at 80% or better … Then I print out their reports, have individual conferences with those kids and we work for the next 4 weeks on reaching those goals. On Friday, if they have reached their goal (either 80% or 5% better) that week, they get an extra recess, or special snack or a dip in the treasure box … it has been very effective with improving behaviors. (teacher, weblog comment)

For this teacher, students' ClassDojo reports, and the 'positive' feedback percentages within them, have been instrumental to the way they understand and develop students' behaviour using students' goals. The teacher has chosen to use the percentage calculations of students' feedback behaviours as the primary means of evaluating and measuring students' behaviour. The percentage figure was used not only to set goals and measure progress toward reaching them, but to sort students into those who were required to set a behavioural goal and those who were not. Students whose 'positive' feedback percentage was below 80 per cent were required to participate in a teacher-student conference for the purpose of developing a goal. The teacher used the knowledge contained within students' ClassDojo reports to inform this task. In this way, ClassDojo student reports occupied a central role in this teacher's approach to behavioural goal development. What is more, students' behaviour goals were based largely on a quantified form of knowledge and confined to that which is available through ClassDojo, namely, the feedback framework within the platform and the calculations and displays within ClassDojo reports. Undertaking this goal-setting activity on a monthly basis meant it had become a routinised part of this teacher's disciplinary practice, a central aspect of their pedagogy of school discipline. Thus, the student data that accumulated, and was analysed within student

reports, provided a source of knowledge used each month to make decisions related to understanding, assessing and measuring student behaviour.

Using ClassDojo data to exclude

> To participate in school-wide events: Students will need to have a certain percentage of positive dojos overall. The actual percentage will be determined by the administration.
>
> Schoolwide Reward: At the end of each month students with 90% will attend the PBIS Social.
>
> Schoolwide Reward: Each 9 weeks [the school] will have a PBIS Celebration. To attend this celebration students, need to obtain 80% which will be equivalent to an 'S' for conduct, they will attend 40 minutes of the celebration. Students who have obtained 90% which is equivalent to an 'O' Outstand for conduct, will attend the whole time. (US primary school, discipline policy)

The policy extract above illustrates how some schools use ClassDojo data to exclude students from participating in school activities or events. The school above used students' 'positive' feedback percentage within ClassDojo as a measure to make determinations about which students would be permitted to attend, and conversely excluded from attending, a school-wide celebration event. For example, if student A has a 'positive' feedback percentage in ClassDojo of 61 per cent, and the school administration have decided that to attend the school fete all students must have a minimum 'positive' feedback percentage of 70 per cent, student A is excluded from attending. Student participation in all school-wide events is governed in this way. However, the percentage benchmark upon which such determinations are based appears to be somewhat variable. Set by the school administration, it seems minimum benchmarks may well shift according to the value administrators attach to specific events. In contrast to other school-wide events, the school set a fixed minimum benchmark which students had to meet to participate in two incentive events. The PBIS celebration involved a stratified student participation system. ClassDojo data were used to determine whether students were permitted to participate fully, participate partially, or not at all. When used in this way, ClassDojo behavioural data were used as a measure to determine which students were permitted to participate in the event, and to what extent they could participate. This reflected the general way this school used knowledge of student behaviour produced with ClassDojo, that is, as a measure of behaviour quality employed through a mechanism of exclusion.

Another way some teachers used ClassDojo data to exclude was by using students' behaviour scores to make decisions about which students were allowed to attend classroom social events. As the teacher here described:

> Though every student sets goals individually, they share at least one goal in common: to attend the parties she throws for well-behaved students, which have themes like 'pizza party' and 'laptop party.' The students need a certain number of Dojo points to attend, so they strive to exhibit positive behaviors, such as arriving on time, cleaning up after themselves, and staying on task. (US special education teacher, weblog post)

The excerpt above illustrates a common way teachers used ClassDojo to exclude selected students from classroom activities. Teachers often used students' feedback point scores to determine which students would be included and excluded from classroom activities. In the same way as the previous example, minimum benchmark scores were used to make such determinations. However, rather than applying this to school-wide activities and events, teachers would use it with classroom activities that were typically of a social nature. In this way students' feedback points were used as a representation of behaviour, where the more points a student had the better behaved they were understood to be. Thus, teachers who use ClassDojo in such ways are using it as mechanism to exclude.

In summary, this section has reported the finding that *teachers and schools use ClassDojo to govern student behaviour with datafied constructions of knowledge*. It described the five main ways that teachers and schools did this:

a) using ClassDojo reports as sites of behavioural knowledge;
b) using ClassDojo data to govern behaviour;
c) using ClassDojo data to report on student behaviour;
d) setting goals and measuring success with ClassDojo points; and
e) using ClassDojo data to exclude.

This finding outlined the quantified and individualised nature of the knowledge produced within ClassDojo. It showed that, through ClassDojo, students and their individuality are largely made knowable through numbers that are subject to particular algorithmic calculations and visualised in particular ways. Furthermore, it demonstrated that this knowledge is concentrated on how students and teachers behave, which is constituted in ClassDojo by an understanding that assembles behaviour as a set of distinct components brought into existence through its feedback behaviours. Teachers and schools used this knowledge to govern student behaviour. This occurred in informal ways, such as with Max

and his use of ClassDojo to differentiate his students' behaviour and determine the winners of his class competition. It also occurred in more formal ways, such as through teachers using ClassDojo data to create behaviour grades for student reports, and by schools to mark individual students for exclusion from school events. Furthermore, students used this knowledge to govern themselves by combining it with practices of self-reflection and goal setting to identify aspects of their behaviour they wanted to change. Therefore, this finding shows how ClassDojo, and its data in particular, has been used to understand, govern and shape the conduct of students.

Teachers and schools use ClassDojo for the control-oriented features and functions it provides

In this final section I report the finding that teachers and schools use ClassDojo for the control-oriented features and functions it provides. From the analysis of the data, I established that three distinct categories which describe the reasons provided by teachers for using ClassDojo to manage student behaviour:

a) a simple, effective and familiar tool for shaping behaviour;
b) a gamified approach to discipline; and
c) a way to enhance parental monitoring.

This section shows that teachers and schools were attracted to the features and functions in ClassDojo that promote, and facilitate, a control-oriented discipline approach. It reveals that many teachers used ClassDojo because it provided them with a simple way to gain student compliance with school and classroom behaviour norms, including by making school discipline more engaging. Moreover, it reveals that the features and functions within ClassDojo that teachers and schools found appealing were mechanisms through which power was exercised onto students.

A simple, effective and familiar tool for shaping behaviour

> I love ClassDojo I believe it helps children stay focused on acting properly as well as holding the parents and children accountable for their actions. (teacher, weblog teacher comment)

> I use ClassDojo regularly because it is easy to set up, it holds students accountable for behaviour, encourages positive behaviours, and communicates what you are doing in the classroom. (US primary school teacher, weblog post)

The quotations above exemplify the opinions of many teachers who described what they found appealing about ClassDojo. In particular, teachers were attracted to the way students complied with ClassDojo feedback, and therefore its capacity to shape behaviour or make students behave in the right way. Furthermore, they liked ClassDojo because they believed it held students accountable or responsible for their own behaviour and allowed them to focus on positive behaviour.

As the first excerpt above shows, a key appeal of ClassDojo was its capacity to modify student behaviour. Teachers liked the way it could be used to effectively compel correct behaviour or dissuade students from behaving in certain ways. Relatedly, some teachers expressed that they liked the way ClassDojo held students accountable or responsible for their own behaviour. When teachers said this, it was typically associated with the way feedback points recorded student behaviour, the publicising of student feedback, or notifying parents of their child's behaviour. In this way, it seems teachers were referring to the way ClassDojo reinforces the notion that the cause of behaviour is located within students, meaning students could subsequently be blamed or praised. Meanwhile, for a smaller portion of teachers, the appeal of ClassDojo lay in its ability to be used in a way that focussed on promoting and producing productive behaviours in students. They liked that ClassDojo provided them with a way to reinforce students' productive behaviours by rewarding them with 'positive' feedback.

Some teachers, like Max, offered other reasons they found ClassDojo appealing, such as its similarity with more traditional approaches to behaviour management, such as behaviour charts. Max explained that he was drawn to ClassDojo because 'when it came along it was basically your tick chart for good and bad behaviour but using plus and minuses'. Max liked that he could use ClassDojo to tell students that their behaviour was good or bad in a simple way that he was familiar with. Much like a traditional behaviour chart, Max could use ClassDojo to keep a record of student behaviour and display it to his students via the classroom whiteboard.

Max also talked of the efficiencies of ClassDojo as an appealing feature of the platform, saying that when he started using it, 'I didn't have to draw a big grid. I didn't have to do anything. I could do it quite easily.' Here, Max was attracted to ClassDojo's form as an off-the-shelf behaviour package. He was able to begin using it immediately because it came with the digital architecture necessary for its use, and it was simple to use.

A gamified approach to discipline

Another reason teachers and schools used ClassDojo was associated with its gamified approach. Some teachers explained that they used ClassDojo because it was attractive to students, in particular, the game-like elements that have been built into its design. As the following teacher described:

> It is made up to be attractive to kids with the monsters and the colours and all the bright aspects to it and the little characters and things like that … some of those concepts, the monsters that they get to make, and even the whole banner that pops up, receiving a point, the audio for it. In that sense it's definitely appealing. (Teacher 4 transcript, Australian primary school teacher)

This teacher viewed ClassDojo's game-like elements as its appealing features. Elements such as monster avatars, pop-up banners, a points system and audio sounds are all features that have been embedded within ClassDojo to provide it with a game-like feel. She viewed such aspects as targeted toward children, and consequently as a way to get students to willingly engage with the regulation of their own behaviour.

Similarly, some teachers referred to ClassDojo's visual appearance as particularly engaging to students, as this teacher described:

> It's visual, yeah, very visual. Very easy to incorporate into the day. Engaging for students as well, particularly now that I'm getting them to give themselves points … There are other apps like SeeSaw, but they didn't have the appealing look and the characters that I thought would engage my kids at the start of the year. (Teacher transcript 5, Australian primary school teacher)

This teacher thought that ClassDojo's visual appearance would engage her students and it was one of the main reasons she chose to use the platform. ClassDojo's visual appearance has been purposely designed to appeal to primary school–aged children which is evident from its slick, sharp graphics, lots of bright colours, and assortment of cute monsters. Appealing to teachers through this prism of student engagement appears important, as this teacher explained it influenced her decision of which technology to use in her classroom.

A way to enhance parental monitoring

Another aspect of ClassDojo that appealed to some teachers, including Max, was its capacity to provide parents with a way to see their children's behaviour while they were at school. Max explained:

> I did like the fact that I could sign parents up so that they could see straight away what their kid was getting pluses or minuses for. This way I wouldn't end up having a conversation, at say interview time, with them coming in going, 'I don't know what you're talking about. When have they been in trouble?' Because I could say, 'Well, you've actually seen the notifications for the past few months and you can see how many times your kid's done the wrong thing or the right thing.' (Max)

Max liked that he could use ClassDojo to alert parents in real time to the feedback he provided to his students. Max found the immediacy of such communications appealing. He liked that parents could be kept informed and updated about their child's behaviour instantly. Moreover, he viewed such communications as a source of evidence on which he could draw when engaging with parents. In this way, he viewed the feedback data produced about students, and sent to parents, as an accessible and persistent record of truth about a student's behaviour.

In summary, this section has reported the finding that *teachers and schools use ClassDojo for the control-oriented features and functions it provides*. It described the three main reasons teachers and schools provided for using ClassDojo to manage student behaviour:

a) a simple, effective and familiar tool for shaping behaviour,
b) a gamified approach to discipline, and
c) a way to enhance parental monitoring.

This finding demonstrated that teachers and schools use ClassDojo for reasons related to making behaviour management easier. It showed that teachers and schools like that ClassDojo is effective at gaining student compliance, is simple to use, and involves techniques they are familiar with. Notably, for some this appeal was associated with a focus on developing productive student behaviour. It showed that teachers also use ClassDojo because of its gamified approach and the increased student engagement its controlling techniques provide. Lastly, it revealed that some teachers and schools use ClassDojo because it provides them with a way to inform parents about their child's behaviour in a more timely and frequent manner. Therefore, this finding showed that teachers and

schools provided different reasons for using ClassDojo to manage student behaviour, albeit through a similar set of ClassDojo's features and functions.

Summary

In this chapter I have reported findings from Phase Two of this study that demonstrate how and why teachers and schools use ClassDojo for school disciplinary purposes. The findings have shown that: 1) teachers and schools use ClassDojo to shape the behaviour of students through techniques of control; 2) teachers and schools use ClassDojo as a surveillance technology to monitor and track students and their behaviour; 3) teachers and schools use ClassDojo data to construct knowledges and understandings about students' and teachers' behaviour; and 4) teachers and schools use ClassDojo for the control-oriented features and functions it provides. The chapter has shown how these findings are invariably bound to one another through the interlacing nature of how ClassDojo's features and functions operate and the purposes for which they are used. ClassDojo's feedback points system demonstrated this boundedness clearly through its presence across the four main findings. It was used by many teachers as a mechanism for controlling behaviour, surveilling students, and constructing knowledge through which to govern student behaviour. These relationships were further borne out through the example of Max. Proving an illustrative case study helped to reveal how ClassDojo's suite of features are interrelated in many ways and can be applied collectively as a school disciplinary approach. Ultimately, the findings indicate that teachers and schools use ClassDojo as a tool to shape and control student behaviour through techniques that make students visible, facilitate and promote their surveillance, and manufacture data-based knowledges that are used to examine and understand students and their behaviour.

Chapter 7: Discussion

In this chapter I discuss this study's findings in relation to the theory of power described in Chapter 3 and relevant literature. I focus on understanding and explaining how and why teachers and schools use ClassDojo to enact practices and pedagogies of school discipline with students. I begin by discussing the diversity of practices implemented by teachers and schools with ClassDojo, arguing that many of them are interventionist in nature and reliant on traditional behaviourist methods of modifying behaviour. I then identify and examine the numerous ways ClassDojo is routinely used to enact practices of student surveillance, visibility and dataveillance. The discussion then moves to consider ClassDojo as a form of school discipline in relation to five characteristics of neoliberal pedagogy, bringing into view the way ClassDojo fuses disciplinary techniques of power with neoliberal principles of government. Lastly, I explain the three main reasons teachers and schools provide for using ClassDojo to address issues of student behaviour, including to shape and control student behaviour, to focus on developing positive behaviour, and to increase student engagement. Throughout this discussion I argue that ClassDojo is primarily used as a technology of behaviour modification which intensifies student surveillance and imposes a narrow view of discipline as a mechanism of control; and that ClassDojo's technology-based approach can be characterised as a new form of neoliberal school discipline that promotes, maintains and extends the use of disciplinary power as a means of controlling students and their behaviour.

A technology of behaviour modification

The findings from this study show that ClassDojo's application as a behavioural technology is heavily influenced by Skinnerian behaviouristic logic. Such logic underpins the behaviour modification techniques embedded into the design of ClassDojo's behavioural feedback system. Behaviour modification relies predominantly upon the principle of reinforcing and punishing behaviour to condition future behaviour (Slee, 1995), and so too does ClassDojo. For teachers who choose to use ClassDojo for school disciplinary purposes, the mechanisms available to them for shaping student behaviour are almost exclusively based on this principle of reinforcement and punishment. The platform's core features, which include feedback points and audio cues, operate foremost as a way of rewarding or punishing behaviour. While ClassDojo provides teachers with the ability to hide feedback behaviour points from view and disable feedback audio cues, their use is

promoted via settings which enable them by default, reflecting what van Dijck (2013, p. 29) refers to as the company's own 'strategic choices'. This promotion of using both feedback points and audio cues to shape student behaviour was reflected in the way teachers reported using ClassDojo. Almost all teachers referred explicitly to using feedback points as part of their discipline approach and, while explicit references to the use of feedback audio cues were fewer, they remained noteworthy. ClassDojo thus reflects the narrowing of learning associated with many digital assessment technologies (Wyatt-Smith et al., 2019). As a technology of behaviour modification, ClassDojo's reliance on principles of reinforcement exposes its lack of innovation and narrow approach to discipline, demonstrating instead that it merely reinforces long-standing educational practices (Decuypere, 2019; Decuypere et al., 2021; Sefton-Green, 2021; Selwyn, 2014; Watters, 2014).

Indeed, the practices employed by teachers and schools through ClassDojo bear a strong resemblance to those found in other interventionist approaches to school discipline. Teachers in this study reported using ClassDojo to shape student behaviour through a range of practices. These practices included dispensing rewards and punishments through several mechanisms, including feedback points, feedback sounds, and prizes and sanctions based on the feedback points students had already received. Furthermore, they included using ClassDojo to install classroom behaviour rules and monitor student behaviour closely. These practices reflect interventionist approaches in the way that teachers use them to target specific rather than general behaviours, apply rapid intervention and monitoring to establish and enforce class rules, and impose consequences as a method of learning (Slee, 1995; Woolfolk Hoy & Weinstein, 2006). The study's findings showed that at times teachers did use ClassDojo in other ways. For instance, some teachers used the platform in ways that were more consistent with non-interventionist approaches, such as involving students in the development of class rules or encouraging students to self-monitor their own behaviour. Others employed it in a way that was more consistent with interactionist approaches, such as through conducting individual and class meetings to analyse and discuss behaviour. However, such practices were fewer in number and subsidiary to the core interventionist practices that dominated teachers' implementation of ClassDojo.

The intervention techniques teachers deploy via the platform are a key means by which disciplinary power is exercised on students. The findings from this study showed that teachers and schools routinely used ClassDojo to codify behaviour with the feedback mechanisms embedded in the platform. Max provided a clear illustration of this practice

when he explained how he used ClassDojo's behaviour feedback to create and implement a class agreement which outlined the rules, values and norms of behaviour for his class. Teachers who used ClassDojo in this way employed two key intervention techniques, namely the installation of behavioural rules and the feedback mechanisms used to enforce them, which both operate as 'mechanisms of normalizing judgement' (Foucault, 1977, p. 183). This process starts with teachers using ClassDojo's feedback framework to establish behavioural rules and norms for their classrooms. In ClassDojo this is achieved through what Foucault (1977) described as a dual gratification-punishment system. Teachers inserted behaviours into ClassDojo and defined them in binary terms as either good or bad, right or wrong or, in the parlance of ClassDojo, 'positive' or 'needs work'. Teachers then used these codified behaviours as feedback that exercised disciplinary power through training and correction (Foucault, 1977). This is because 'positive' feedback trains students by encouraging them to repeatedly perform behaviours and 'needs work' feedback corrects students by sanctioning them when they perform the wrong behaviour. Teachers dispensed ClassDojo's behavioural feedback in multiple ways, including through point values, audial sounds, and an array of normative visual evaluative indicators, each of which served as techniques of normalising power. Moreover, those teachers who broadcasted ClassDojo feedback publicly, either by displaying student behaviour scores across screens and on charts, or displaying detailed student reports, further enhanced the duration and extent to which normalising judgements function. The cumulative effect of exercising disciplinary power frequently in these varied forms is the production of docile bodies (Foucault, 1977). By subjecting students routinely to the subtle coercion of ClassDojo's techniques an increasing level of holds and constraints are placed over student behaviours, attitudes and activities (Foucault, 1977). Thus, it is through the interventionist techniques associated with codifying and dispensing behaviour feedback with ClassDojo that teachers ensure 'the normal is established as a principle of coercion' (Foucault, 1977, p. 184).

Central to the techniques of normalising power deployed by teachers with ClassDojo in this study was the quantification of behaviour. This study's findings showed numbers in the form of feedback points were essential to the ways teachers shaped student behaviour, including both to the way behaviour was codified, and the way feedback points were used to control student behaviour. Teachers who used ClassDojo's numbers in these ways were exercising normalising power by using them to define, judge and measure behaviour as an indicator of quality. However, the quantification of behaviour that ClassDojo compels teachers to employ shapes teachers' disciplinary practices in another way. That is, it invites

teachers to order students in relation to one another in a hierarchy of subjects differentiated by their value (Foucault, 1977). Ball (2010) describes this as creating a field of comparison in which students are situated, arranged and displayed according to the quantified measures of value they are assigned. The findings from this study showed that teachers use ClassDojo in this way to create a field of comparison specific to behaviour based on the feedback points they give students. This was particularly evident in the way that teachers used student behaviour scores to determine which students were behaving in the right and wrong ways, which students would receive prizes and which would not, and the self-regulating strategies teachers encouraged students to adopt using their personal behaviour scores. Foucault (1977, p. 144) connected this means of exercising power to the 'distribution of bodies' and the possibilities that emerge from it. He contends that, when bodies are distributed in a field of comparison that permits distinctions to be made between individuals, it becomes possible to isolate, map and distribute them within a field in relation to one another, and measure and observe their quality (Foucault, 1977). Consequently, ClassDojo's quantification of behaviour operates to distribute and order students in a digital field of comparison across which students move continuously via evolving behaviour scores that teachers use to supervise and exercise techniques of normalising power.

However, ClassDojo does not simply quantify behaviour; rather, it establishes an economy of behaviour through which student behaviour is governed. ClassDojo-based behaviour economies were most evident in this study's findings when teachers used the platform to install micro-economies of behaviour in their classrooms. Teachers who used ClassDojo in this way did so to enhance the effect feedback points had on shaping and controlling student behaviour by making them a commodity students could exchange for tangible rewards and privileges. Ultimately, such teachers were using ClassDojo as a digitised token economy (Raczkowski, 2014; Saber, 2017) in which behavioural feedback points were transformed into credits and debts. However, even outside of such practices ClassDojo constructs behaviour as an economy. This is because all behaviour feedback data on the platform is quantified by default (Williamson, 2017c) with all 'positive' and 'needs work' feedback stored and calculated within ClassDojo in a manner that produces balance sheets of behaviour. Foucault (1977, p. 180) referred to processes like this as 'penal accountancy'. The platform itself subjects feedback data to analytic processes which perform automatic calculations that transform such data into behaviour scores and the data visualisations displayed in behaviour reports. In this way ClassDojo's behavioural economy exists as a

form of pupil performance data (Ozga, 2016). Teachers and schools regularly use these numbers to direct student conduct, especially those who install an additional micro economy in their classroom. This is because the calculations of student behaviour that are produced via behavioural economies provide a constantly updated record of performance. As was shown in this study's findings, teachers used this 'never ending knowledge of the behaviour and conduct' of students to direct and control their future behaviour (Foucault, 2007, p. 181) by using it as the basis on which to distribute prizes and punishments. In this way, ClassDojo's behavioural economies are used both to govern students and their behaviour and to constitute the reality of behaviour. This is because it is through ClassDojo's behaviour economy that behaviours that matter are established, given value, attached to students and governed by teachers (Lynch, 2015; Porter, 1995).

Of critical importance to ClassDojo's transformation of behaviour into a number, and the disciplinary practices that stem from such transformations, is the process of simplification (Espeland & Sauder, 2007; Esposito & Stark, 2019; Rose, 1991). This study found that teachers used ClassDojo extensively in ways that simplified student behaviour, including when they used feedback points, behaviour scores and micro economies. Teachers and schools in this study used this process of simplification to measure behaviour in a standardised way (Porter, 1995) and apply it across school and classroom student populations and all behaviour types. This was evident in the way both teachers and school policy often outlined using ClassDojo's behaviour scores and points to judge, measure, assess and represent student behaviour. While teachers seem to find significant value in using numbers to understand and shape student behaviour via ClassDojo, using numbers in this way comes at a cost. This is because reducing behaviour to a number strips away its context and the granular subjective detail of the individuals such numbers purport to represent (Piattoeva & Boden, 2020; Sellar, 2015). Behaviour scores are extreme in their reduction, confining the representation of behaviour to a solitary number. Context and subjective detail are almost entirely erased. Barthes refers to such practices as promoting a 'discourse of concealment' (as cited in Maguire et al., 2010, p. 166). Even within ClassDojo's more detailed student reports contextual information about the classroom and school, and subjective detail about individual students' lives are ignored (Sullivan et al., 2014a). Lu et al.'s (2021) study on ClassDojo similarly found that ClassDojo's quantification of behaviour simplifies the way teachers understand behaviour and encourages them to ignore its root causes. ClassDojo's provision for adding qualitative notes to student reports suggests the platform provides scope for including a small amount

of contextual or subjective information about behaviour in feedback. However, the findings from this study indicate that teachers used this feature very rarely. Thus, teachers and schools relied on the 'thin descriptions' of behaviour (Ozga, 2016) provided by ClassDojo's numbers to describe and understand behaviour. Such simplified thin descriptions are arguably sufficient for, and indeed fundamental to, the normalising disciplinary practices routinely implemented by teachers through ClassDojo.

Enacting disciplinary practices of surveillance, visibility and dataveillance

The findings from this study show that ClassDojo was used by a range of actors in a variety of ways to surveil students and make them visible. Surveillance is understood here in terms of Foucault's (1977, p. 170) concept of 'hierarchical observation' which operates as a 'mechanism that coerces by means of observation'. Accordingly, ClassDojo acted as a form of surveillance through the observation of student behaviour. While the surveillance of students and acts of making them visible with ClassDojo are invariably entwined, practices that make students visible can be understood as distinct yet closely linked to practices of surveillance. Much like surveillance, visibility functions as an instrument of power in that its effects create the possibility to see and recognise instantly (Foucault, 1977). Thus, the practices of visibility conducted through ClassDojo should be understood not as a form of surveillance in themselves but rather as a precursor to its enactment.

The practice of making students visible formed a key part of the way ClassDojo was used by teachers as a disciplinary approach. Through publicly broadcasting student feedback and data, ClassDojo served to render students visible. This broadcasting typically occurred through large screens or classroom whiteboards, which allowed students' behavioural feedback and data to be made visible to everyone in the vicinity, including parents, other teachers, school leaders, other school staff and students' peers. This broadcasting frequently occurred in classrooms but there were also reports of it occurring in communal spaces such as the cafeteria. The visibility of this data varied dependent upon how ClassDojo was used. It often involved brief moments of visibility when behaviour feedback was given and broadcast for a few seconds across the screen. Other teachers, however, chose to broadcast ClassDojo data for longer periods when they used student and class reports to review student and class behaviour together as a class. Some teachers broadcast ClassDojo more persistently by displaying ClassDojo class lists and the student behaviour scores they contain onto screens – sometimes perpetually. For such teachers the

broadcasting of ClassDojo is a fixed feature within the classroom; it is used as a digital 'data dashboard' (Jarke & Macgilchrist, 2021) of classroom behaviour through which student visibility is part of everyday classroom life. Using ClassDojo in this way exemplifies what Lupton and Williamson (2017, p. 786) describe as an environment in which children are increasingly subject to a surveilling gaze by way of technologies that render them 'visible in numbers and visualizations'. Surveilling and visibilising students in such ways demonstrates how teachers use ClassDojo as an instrument of disciplinary power, namely, to perform hierarchical observation. The hierarchical nature of the relation produced through ClassDojo here is evident in that ClassDojo enables students to be seen and consequently acted upon, typically by the teacher and potentially other school staff who enter the classroom. This is because hierarchical observation functions as a coercive instrument through which power is exercised (Foucault, 1977). Its coercive force is immanent within discipline because 'the techniques that make it possible to see induce effects of power' that make 'those on whom they are applied clearly visible' (Foucault, 1977, pp. 170–171). Thus, when ClassDojo is used in this way the social practices and relations of school discipline are predominantly recast as datafied exchanges of surveillance (Murakami Wood & Monahan, 2019) through which students are made visible for the purpose of shaping behaviour.

While increasing the visibility of student behaviour, ClassDojo was also used to expand and enhance opportunities for surveillance. This was done in two key ways. Firstly, some teachers increased the surveillance of student behaviour by utilising ClassDojo's portability to maintain its use when they were away from the classroom. Max, for example, described using ClassDojo in this way, revealing that he continued monitoring students and handing out behaviour feedback with ClassDojo in settings away from the classroom, such as during school assemblies and when on school excursions. This portability has been brought about by the use of platforms like ClassDojo on personalised digital devices, creating the potential for them to be 'always on' and used in any location (Selwyn & Facer, 2014). Thus, ClassDojo and the teacher gaze it facilitates are expanded beyond the classroom through their permanent accessibility, their application limited only by the choices teachers make about where and when to use it.

Secondly, the surveillance of student behaviour was enhanced through expanding the number of school staff who used ClassDojo, and the settings in which it was used. This expansion occurred either through teachers sharing authority with others to use ClassDojo or schools implementing the platform school wide. Using ClassDojo in this way enabled

the creation of a connected network of surveillance. Through this network the observation of students was both maintained when a teacher was not physically present in a classroom and expanded by the propagation of those who used ClassDojo to monitor students across the school. Teachers described sharing this authority with other teachers, school leaders, non-teaching school staff, and even at times pupils for the purpose of monitoring behaviour. In this way ClassDojo's application is characteristic of panopticism in that its proliferation creates an environment in which 'Inspection functions ceaselessly' (Foucault, 1977, p. 195). The study's findings showed how ClassDojo was used to expand student surveillance across student classes, across entire school buildings, into schoolyards, during recess, while teachers were away from the classroom, and to monitor students' use of restrooms. To formulate a network of surveillance in such ways demonstrates how power exists not as a possession but rather entirely in its action via a concerted distribution of surfaces, lights and gazes within which the individual is caught up (Foucault, 1977, 1980b). The networks of surveillance produced with ClassDojo resemble Foucault's (1977) description of the surveillance imposed on a seventeenth-century town during the plague.

> The gaze is alert everywhere: 'A considerable body of militia, commanded by good officers and men of substance', guards at the gates, at the town hall and in every quarter to ensure prompt obedience of the people and the most absolute authority of the magistrates, 'as also to observe all disorder, theft and extortion'. (Foucault, 1977, pp. 195–196)

Foucault (1977) referred to such networks as forming through relays. That is, multiple connected surveillance actors form an uninterrupted network through which an expanded disciplinary gaze is cast, and its possible effects increased (Foucault, 1977). Therefore, teachers and schools that use ClassDojo in this way are creating a network infrastructure through which student surveillance is promoted, expanded, connected and centralised.

Teachers and schools also used ClassDojo in ways that extended the network of surveillance beyond the school and into family homes. The findings from this study revealed that teachers and schools often used ClassDojo to expand parents' gaze over their children's behaviour while at school. Two of the main ways this expanded gaze was manifested were via account notifications, which would alert parents in real time to the feedback their children received, and the sharing of student behaviour reports, which teachers, schools and ClassDojo encouraged parents to view. Both of these surveillance techniques rely on the production of student behavioural data within ClassDojo, which is used systematically to promote and facilitate the parental monitoring of students, a form

of surveillance Clarke (1988) termed dataveillance. In this way, ClassDojo can be understood as extending the architecture of school surveillance beyond the bounds of a school's physical structure into the digital domain. Foucault (1977, p. 172) described surveillance architecture as that which is designed 'to permit an internal, articulated and detailed control – to render visible those who are inside it … to carry the effects of power right to them, to make it possible to know them, to alter them'.

ClassDojo thus provides schools and teachers with such capacity not only through the human surveillance it facilitates, but the 'new surveillance' made possible via its digital infrastructure. Parents are thus encouraged to use this architecture to monitor their children via 'nudging' techniques (Damgaard & Nielsen, 2018) which include in-app notifications and email reminders. Nudging techniques aim to shape and condition parent behaviour by prompting parents to make certain choices and perform certain behaviours (Damgaard & Nielsen, 2018; Williamson, 2017d), which in this case include the dataveillance of their children. Therefore, teachers and schools are using ClassDojo to expand networks of surveillance into family homes, with parents subsequently urged to intensify the monitoring of their children through constantly updated data which tracks student behaviour in real time.

The complex interrelation of surveillance, visibility and datafication within ClassDojo disciplinary practices

Fundamental to the increased surveillance and visibility of student behaviour that ClassDojo produces is the process of datafication. In short, datafication occurs when ClassDojo is used to give students feedback about their behaviour. Through its digital architecture the platform transforms that feedback into data and stores, aggregates and calculates it within student and class profiles. These behaviour data are represented on the platform in two ways. They are displayed in condensed form as a behaviour score which appears next to each student's avatar on ClassDojo's class list interface. They are displayed in detail within ClassDojo's student report interface for each student. Subsequently, these forms of behaviour data provide, and are often used as, another medium through which to carry out techniques of surveillance on students, known also as dataveillance.

The ways students are made visible through ClassDojo are invariably bound up with the behaviourist epistemology and theory underpinning the platform's functions. Behaviourism with its positivist orientation employs an epistemology which relies on

observation as the primary means of developing knowledge about human behaviour (Murtonen et al., 2017). Through ClassDojo such observation is largely directed toward individual students and is combined with behaviourist theory to provide the platform with functions that aim to modify behaviour through shaping a student's environment (Slee, 1995). One of the ways teachers in this study used ClassDojo to shape the student environment was by making students visible. Teachers monitored students and used ClassDojo feedback to capture student behaviour as data, thus transforming it into an object of knowledge. Such knowledge was then employed in coercive ways when it was used to make students visible. The behavioural knowledge produced through this process manifests through the same 'discourse of concealment' that characterises ClassDojo's numbers (Maguire et al., 2010, p. 166). Therefore, the knowledge produced within ClassDojo is immediately compromised. This is because the discourse of concealment steers the teacher's gaze, and anything that falls outside of this gaze is excluded from the domain of possible knowledge (Paltrinieri, 2014). Thus, ClassDojo can be said to produce a version of knowledge about student behaviour that is limited and remade in its own image. That is, it reduces behaviour to an individualised and psychologised phenomenon represented in the form of quantified data. Therefore, making students visible in such terms acts as a mechanism of both behaviourist conditioning and disciplinary power.

Teachers and schools are using ClassDojo to implement a performative model of school discipline, the basis of which is the surveillance and visibilisation of students. Building on Phase One findings that showed ClassDojo's platform promoted a performative model of discipline, the findings from Phase Two demonstrated how teachers and schools often put ClassDojo's performative model into practice by rendering students visible with ClassDojo, including when they amplify that visibility through, for example, behaviour wall charts or brag tags. In establishing this connection, however, it is important to recognise that students are being made visible with data that functions as a measure of behaviour performance. This is because performance measures, in particular the assumption that they provide a precise and transparent gauge of performance, are pivotal to performative practices and, more broadly, performative cultures (Lyotard, 1984). Teachers in this study often made students visible with ClassDojo data that functioned as a measure of performance, including for example whenever class lists were displayed, when Max used his ClassDojo class list as a digital leaderboard, when teachers arranged student names on behaviour clip charts, and when they put student names on hall of fame wall displays. Such practices bring into view the relational links between surveillance,

visibility and performativity. This is because when teachers increase the visibilisation of behaviour performance through ClassDojo, in some cases unremittingly, it places student behaviour in a relation of heightened display and observability. Consequently, student behaviour is subject 'to a seemingly relentless gaze' (Perryman et al., 2018, p. 147) under which success is acquired by performing in accordance with the behavioural norms embedded within the platform. While direct student surveillance is in reality not relentless, for if it were the teacher would have little time for teaching, its behaviour-shaping force continues to function through its increased, at times permanent, visibilisation. This is what Foucault (1977, p. 201) referred to as 'the automatic functioning of power'. In other words, ClassDojo is being deployed as a form of 'panoptic performativity' (Perryman, 2006, p. 148) through which the effects of power are maintained via the visibilisation of students despite the discontinuous application of surveillance.

Fundamental to this data-based form of surveillance is the datafied system of registration ClassDojo generates when teachers deploy feedback through the platform. The findings from the study indicate that teachers, parents, school leaders and students all used ClassDojo in ways that involved the dataveillance of students, including when students were made visible with ClassDojo, when teachers shared the use of ClassDojo with others, when schools applied ClassDojo in non-classroom settings, and when parents used ClassDojo to monitor their children's behaviour. Foucault (1977, p. 196) explained that this form of 'surveillance is based on a system of permanent registration'. In ClassDojo, student behaviour reports are the primary site at which this registration and its analysis takes place. Student behaviour reports register a student's name, each behaviour feedback type they receive, how many of each type they receive, the name of the teacher that gave the feedback, the date on which the feedback was given, the number of 'positive' and 'needs work' feedback points received (from which behaviour scores are produced), a calculated percentage of the 'positive' feedback behaviours a student has received, and any notes that may have been posted by the teacher or a parent related to the behavioural data in the report and when they were posted. The implication of registering student behaviour in such a way is that the volume and variety of data produced about student behaviour is increased substantially compared to traditional behaviour recording practices (Krach et al., 2016). In this way, ClassDojo promotes a data logic which Wyatt-Smith et al. (2019) explain recurringly constitutes students as constellations of data points which fluctuate over time. Ultimately, this increased volume of data forms the basis from which ClassDojo

is used not only to impose an added data-based form of surveillance on students, but to employ a more routinised, broader and deeper form of surveillance (Marx, 1988).

ClassDojo was used by adults in this study to conduct a form of dataveillance on students which allowed them to see without being seen. The findings from this study showed that teachers, parents and school leaders used ClassDojo at times to digitally monitor students without students knowing they were being monitored. For example, some teachers described maintaining a gaze over their students' behaviour when substitute teachers took their class by logging onto ClassDojo to check students' behavioural data. One teacher explained how effects of power would be induced through this panoptic practice. She revealed that her students were unaware she continued monitoring their behaviour via ClassDojo when she was not with them, and that the imperceptible nature of this dataveillance would have a preventative effect on unproductive behaviour. It is in such ways that ClassDojo functions panoptically. Teachers, parents or school leaders can monitor students via the data stored about them in ClassDojo while students remain unaware of who is observing them, and indeed when or if they are being observed. It is in this way that they see without being seen (Bentham, 1995), and the student is treated as an 'object of [behavioural] information' (Foucault, 1977, p. 200). It is through such dataveillance that Bentham's principle of power as a force that is visible yet unverifiable manifests through ClassDojo (Bentham, 1995; Foucault, 1977). Simon (2005, p. 4) warns of the potential detriment that this type of surveillance can produce: 'to know one is being seen without being able to see carries with it an uncertainty that becomes a source of anxiety, discomfort and terror … Who is watching? Why are they watching? What will they do?'

Disciplinary practices that operate in such ways arguably foster relations of distrust and for some an atmosphere of fear (Steeves & Jones, 2010). Moreover, when ClassDojo is used in these clandestine ways student surveillance is not only intensified through its multiplicity, but becomes partially unverifiable. Power is thus exercised with ClassDojo via dataveillance in ways that further subdue students toward a state of docility, their activities, behaviours and attitudes increasingly controlled and organised (Hassard & Rowlinson, 2002).

The varied practices and techniques of surveillance discussed in this section suggest the use of ClassDojo for school disciplinary purposes is promoting and facilitating an intensification of student surveillance. Such practices and techniques serve as mechanisms

of coercion that are often manifest in techniques that make it possible to see, which by their very nature 'induce effects of power' (Foucault, 1977, pp. 170–171). While surveillance is not a novel phenomenon, and 'schools as sites of surveillance are nothing new' (Taylor, 2013, p. 3), ClassDojo is being used to surveil students in new ways. This is because:

> the sophistication and reach of new technologies of surveillance have far surpassed the scope and granularity of monitoring and control of earlier times transforming contemporary educational spaces. Students have always been observed, monitored, assessed, and tracked, particularly in relation to their progress, beliefs, bodies, and behaviours … Traditional surveillance in schools usually involved in-person monitoring where information was gathered and stored in the form of paper files. (Taylor & Kearney, 2018, p. 96)

Contrastingly, the findings from this study show that ClassDojo is being used to enact a form of surveillance which is datafied, persistent, reaches further, penetrates family homes, is networked and conducted by multiple actors, is at times invisible, and makes information easier to retrieve and share. As Slee (1995, p. 3) argued nearly three decades ago, school discipline reforms in Australian schools were introducing 'more pervasive and intrusive patterns of surveillance and regulation' into classrooms that had 'little to do with discipline as an educational concept'. I argue, similarly, that, instead of alleviating the patterns of surveillance and regulation Slee warned of, ClassDojo, along with similar behaviour-based technologies, is intensifying them. The emergence of digital technologies of surveillance has qualitatively changed the microphysics of power, enabling an intensification of power relations (Willcocks & Lioliou, 2011). Consequently, ClassDojo, with its overarching surveillance-focussed approach, cultivates a culture of control which is actualised through the constellation of surveillance practices it requires users to employ as a means of shaping student behaviours, attitudes and actions (Taylor, 2013). This set of processes 'transforms mere surveillance into discipline' (Norris, 2005, p. 256).

ClassDojo as a neoliberal form of school discipline pedagogy

The framework I use here to understand and characterise neoliberal pedagogy has been drawn from the genealogy of pedagogy provided by Ball (2017) in *Foucault as educator*. In this book Ball reveals he drew on Foucault's ideas to 'think about education differently' (p. ix). While this conception of neoliberal pedagogy is not drawn directly from Foucault's work, it has been formed using Foucauldian ideas. Ball (2017, p. 2) describes the genealogy he provides as one which examines 'pedagogy in relation to truth, the institution of the modern school in relation to power, and the neoliberal school and neoliberal education'.

Neoliberal pedagogy, the most recent and current incarnation, Ball (2017, p. 23) explains, has brought the classroom 'back into a direct and very visible relation to docility and productivity and security'. From Ball's description I have identified several key characteristics of neoliberal pedagogy which I will use here to survey and interpret findings from this study related to the practices and pedagogy teachers perform through ClassDojo. This is not to suggest ClassDojo acts as a form of technological determinism which rigidly dictates the pedagogy teachers enact when using the platform, but rather that it has an influential relationship with it (Fawns, 2022). Neoliberal pedagogy is consequently characterised as a) 'formed in relation to the logic of competition' and the market; b) installing 'a renewed emphasis on managing behaviour'; c) emphasising the 'fostering and celebrating of performance'; d) promoting 'enumeration and examination – via league tables, benchmarks, and targets'; and e) developing 'new forms of measurement, articulated in relation to new ways of governing' (Ball, 2017, p. 23). This section proceeds with a discussion of ClassDojo and its application as a school discipline technology in relation to these characteristics. The following discussion is arranged in a manner that corresponds with the order of characteristics provided above.

Many of the ways ClassDojo was used by teachers and schools in this study reflected competition and market-based logics. Such logics were evident in the way teachers used points and prizes to control behaviour, created micro-economies based on behaviour, and used ClassDojo reports as sites of behavioural knowledge. Many teachers described using ClassDojo in ways that encouraged students to compete with each other for feedback points, such as Max who awarded a weekly prize to the student with the most points, or described using feedback points as a classroom currency that students exchanged for prizes and privileges. In these ways, ClassDojo is operating through, and extending, the neoliberal idea that the market and competition should provide the central organising principle for governing (Couldry, 2010; Down, 2009; Rose & Miller, 1992), in this case governing behaviour and discipline. Within such conditions 'economic thought [becomes] coterminous with rationality itself' (Couldry, 2010, p. 28). The market created by the teacher's use of ClassDojo transforms behaviour feedback into a commodity whose accumulation is the objective for students, often incentivised with rewards. Selwyn (2014, p. 100) refers to this transformation in gamification technologies as the 'commodification of action'. In ClassDojo this manifests through an emphasis on accumulating 'positive' feedback points and improving behaviour scores, which operate as mechanisms that structure action and indicate progress. ClassDojo feedback consequently becomes a

quantifiably valued commodity that students compete for and exchange for prizes and privileges, thus creating an environment of consumption in which behaviour is explicitly value-based and expressed in market-driven terms.

Many of the practices, techniques and strategies implemented by teachers and schools with ClassDojo within this study emphasise an approach to school discipline predicated on managing students and behaviour. I focus here on how that emphasis on management occurred when teachers used ClassDojo data to govern student behaviour. This emphasis was particularly evident in the way school discipline policies often directed teachers to base understandings of, and responses to, student behaviour on ClassDojo data. For example, student behaviour scores and 'positive' feedback percentages were frequently used as indicators for behaviour, with low scores or percentages indicating unproductive behaviour and high scores and percentages indicating productive behaviour. These scores and percentages were therefore often used to manage students and behaviour by acting as indicators within specific parameters that when exceeded activated additional interventions, such as rewards or punishments, or behaviour conferences. In this way behaviour is being managed through data and the imposition of student compliance measures. References within discipline policies to strategies and techniques other than behaviourist interventions, such as those that address behaviour educationally or philosophically, or consider curriculum delivery and classroom organisation, in association with the use of ClassDojo were exceedingly rare. When such measures were included, they did not involve ClassDojo directly but were rather triggered by ClassDojo data that indicated a student's unproductive behaviour and were focussed on ameliorating that unproductive behaviour. This disciplinary approach exemplifies the way neoliberal management practices are frequently constituted on the basis of performance represented by outcome data derived from measurement software systems (Ball, 2017). Furthermore, in line with ClassDojo's disciplinary purpose, this form of management extends its scope of power by bringing students under tighter disciplinary control (Dreyfus & Rabinow, 2013). Gore and Parkes (2008) warn such approaches often create battle zones of classrooms with teachers fixated on taming and managing students rather than teaching them. This is because the concern of management is not to educate, but rather to discipline populations (Gore & Parkes, 2008; Lewis & Burman, 2008). In this way ClassDojo is a contemporary manifestation of managerial school discipline, in which its datafication of behaviour and discipline provide it with a powerful governing mechanism.

Another strategy embedded within some teachers' and schools' use of ClassDojo that emphasised a managerial approach to school discipline was exclusion. The study's findings show that teachers and schools implemented a variety of exclusionary techniques with ClassDojo to manage students and their behaviour. These techniques typically involved excluding students from school or classroom events or activities on the basis of their behavioural performance data. Managing students and behaviour with ClassDojo in such ways aligns with the emphasis neoliberalism places on the individual while joining it to a mechanism that aims to bend 'individual conduct to the rationality of "rational choice" based on [a] calculation of positive and negative costs' (Ashurst, 2014, p. 168). In other words, exclusion manages student behaviour by presenting itself as a negative cost which students can choose to avoid if they behave in the 'correct' ways. Connell (2015) goes further than this, arguing that in neoliberal education, particularly that involving commodification, exclusion is not only useful, but it is vital. She explains that neoliberal education demands there be visible losers, resulting in a form of education which perseveringly spotlights underachievers, the at risk, non-performers, or in ClassDojo the poorly behaved. The preferred techniques for spotlighting such students, she states, are those that 'make a vast public display of the losers' often via statistics in the form of performance metrics, rankings and league tables (Connell, 2015, p. 188). Arguably, Connell provides not only a pertinent explanation of the ways ClassDojo is used to manage behaviour with exclusion, but one that resonates more broadly with many of the disciplinary practices teachers administer through ClassDojo. On these grounds it can be argued then that ClassDojo's quantification of behaviour, and the platform architecture through which it is displayed, provides new possibilities for acting on students. That is, it provides teachers and schools with new ways to make students and behaviour visible, establishes new relations between them, and makes possible new procedures of decision making, including new ways of managing students through exclusion.

The inclusion, and regular use, of surveillance techniques, visibility strategies and quantified metrics has seen ClassDojo used to enact a disciplinary approach which fosters and celebrates behaviour as a performance. The foremost findings from this study include the way teachers used prizes and awards to control student behaviour, and the ways they combined ClassDojo data with traditional discipline methods. When teachers used ClassDojo in these ways the behaviours students performed were incentivised (or disincentivised), recognised, measured, and achievements celebrated with prizes and public accolades. That is, teachers used ClassDojo to promote, define and manage

behaviour as a performance. Hence, the performative model of discipline designed into ClassDojo materialised in the disciplinary practices of teachers. Behaviour and discipline were constructed through a simple and often very public technology of performance comprised of league tables, behaviour scores, comparative indicators, benchmarks and charts, which together worked to instil into the classroom and school a 'performance culture' (Ball et al., 2012, p. 74). Drawing on Ball (2017), the implementation of ClassDojo here can be understood as a regime of performativity, in which the student 'is made calculable rather than memorable, malleable rather than committed, flexible rather than principled, productive rather than ethical' (Ball, 2017, p. 43). This is because performance measures are valorised, and their improvement designated the primary focus (Trotman & Tucker, 2018) over an approach grounded in the development and fostering of educational aims and values. Through such an approach, students are compelled to compete for rewards and acclamations within a system of relentless assessment, audits and rankings; discipline consequently becomes more about perpetually striving for improved behaviour metrics (De Lissovoy, 2018, p. 191) and less about education and learning. Students in effect become their performance in an environment within which they are constantly compared to others' performances (Ball & Grimaldi, 2022). Therefore, it is through performative cultures that education, and school discipline, become a process focussed on 'conformativity, discipline and normalisation' (Perryman et al., 2018, p. 148). Therefore, through ClassDojo, students are not only controlled through external regulation but are instigated to control themselves via performance metrics which together effectuate the inculcation of normalised behaviour.

Fundamental to the construction of behaviour as a performance, and the way ClassDojo is used as a disciplinary technology more broadly, is its focus on enumeration. While a range of findings from this study indicate this focus on enumeration, I will discuss it in relation to the way teachers used ClassDojo data to govern student behaviour, and report on student behaviour. Teachers in this study used ClassDojo to transform behaviour and discipline into objects of statistical knowledge, such as through the calculation of behaviour scores that some teachers converted into behaviour grades, or when ClassDojo behaviour data were used to document behaviour on official student behaviour plans. Through such processes students are subject to a 'statistical mode of management' (Defert, 1991, p. 215). However, ClassDojo's numbers are not only used by teachers, schools, students and parents to know students and behaviour, but also by one or more of these actors to establish historical behaviour records, track behaviour, represent shifts in

behaviour, guide responses to behaviour, and in some cases even represent and monitor teachers' disciplinary practice. This preference for using quantitative forms of evaluation such as those embedded within ClassDojo are fundamental to what Mau (2019) refers to as neoliberal governing strategies.

ClassDojo's focus on enumeration is an important aspect of its application as a form of behavioural examination. The findings demonstrate how ClassDojo is used as a technology for examining student behaviour, such as when student reports were used by teachers and with students to understand and appraise student behaviour. This is because when ClassDojo is used in these ways it produces an environment of perpetual comparison, within which it is used as an instrument not only to judge and measure students but to pass on knowledge about behaviour from teachers to students and to transform students themselves 'into a whole field of knowledge' (Foucault, 1977, p. 186). To draw further on Foucault (1977), the examination imposed via ClassDojo functions in a variety of important ways: it exercises power by making subjects visible, and it enables individuality to be secured and fixed via digital documentation, which in turn is utilised to establish every individual as a case. The way ClassDojo student reports are used by many teachers and schools to document behaviour exemplifies this examining function, perhaps the most apparent being the way student reports are used by some teachers to assign behaviour grades for individual students. However, beyond this documenting feature exist mechanisms referred to earlier, such as feedback points, behaviour scores or wall displays which are deployed on the basis of, or in conjunction with, the knowledge produced by such examination. Foucault (1977, p. 191) explained the case 'is also the individual who has to be trained or corrected, classified, normalized, excluded, etc.'. In this way ClassDojo's behavioural application in schools and classrooms should be understood not only as a technology through which disciplinary interventions are applied but also a behavioural examination.

With this in mind, it is important to consider the extent to which students are subject to ClassDojo's form of behavioural examination and the disciplinary power exercised through its application. The findings from this study demonstrate that some teachers and schools use ClassDojo to impose an uninterrupted examination of student behaviour. For example, some school policies detailed how ClassDojo is to be used for examining and governing student behaviour on a daily, weekly and term-length basis across the entire year. Within such policies teachers were typically instructed to use ClassDojo as an intervention, knowledge-producing, reporting and decision-making tool as a regular part of their

practice. Such practices reveal how ClassDojo is implicated in advancing the paradigm of governing by numbers in education (Ball, 2015; Grek, 2009; Jarke & Breiter, 2019; Ozga, 2009), in particular within the domain of school discipline. Drawing on Rose (1999b), when used in these ways ClassDojo produces a classroom habitat of numbers within which students and their behaviour are perpetually calculated and examined. It creates a pedagogy through which relations of number and numeracy are composed to enable examination and a government by numbers that is exercised continuously over students, their behaviours, and the events and activities within the classroom. Rose (1999b, p. 226) refers to this as a 'pedagogy of numeracy', which when deployed via ClassDojo inculcates calculative techniques into the realm of school discipline. Disciplinary power's individualising effect is evident within this process; it is exercised by placing students in a field of surveillance and enforced through a process of registration which captures and fixes them digitally in a constantly evolving document which enables them to be described, analysed and differences between them identified (Foucault, 1977). It can be argued then that some teachers use ClassDojo in ways that extend, make more regular, and at times sustain a form of inspection which places students in a near permanent state of examination.

ClassDojo's methods of behavioural examination provide teachers and schools with new forms of measurement that are used to govern behaviour in new ways. While the findings from Phase One of this study in many ways outlined the new forms of measurement ClassDojo introduced to behaviour and discipline, I will discuss them here in relation to the Phase Two finding which showed how ClassDojo behaviour data are sometimes used to set goals and measure success. Study data associated with this finding revealed that both teachers and students, at different times, used ClassDojo in this way. Generally, this strategy involved setting a behavioural goal articulated in the form of a data-based target which the class or individual students aimed to reach within a designated time period. The process of datafication, and the analytics performed by ClassDojo on the data it produces, brings a new means of measuring, capturing, describing and representing students and behaviour (Jarke & Breiter, 2019) to the domain of school discipline. In short, it transforms behaviour and discipline into quantified measures and calculations through which data-driven insights provide the basis for governing. Subsequently, behaviour and discipline are fabricated and expressed in a range of visualisations consisting of scores, charts, tables and statistical analysis. These are all forms of behavioural knowledge constructed entirely on

the basis of performance measurements which have given rise to a range of datafied goal-based forms of governing student behaviour.

Teachers that are employing goal-based governing strategies with ClassDojo reveal a form of governing student behaviour which is different in part to those already discussed in that it is based on neoliberal principles of self-enterprise. While using learning goals with students is not new, the goal-based strategies conducted with ClassDojo take a somewhat different form. They derive from more recent "corporate schemes of 'performance management'" and replicate the way employees are required to 'declare personal goals' which are intended to drive improvement and provide a measure against which progress and achievement is determined (Connell, 2015, p. 190). In other words, they seek to produce 'enterprising subjects – autonomous, self-regulating, productive' students (du Gay, 1991, p. 49) who govern themselves. This approach was evident in Max's description of the way his students used ClassDojo data as a measure to use with the school's SMART goals program. The program required students to use a self-governed goal-based strategy to improve aspects of their learning, including one which focussed on behaviour. Max explained that his students used ClassDojo to select a specific behaviour to improve over a set period of time, for example 'be more organised by the end of term'. They would then use the performance data accumulated about that feedback behaviour over the stated time period to measure their success or failure in reaching the goal. This governing strategy is distinct from others already discussed in this chapter because it places a focus on self-techniques, which Rose (2001, p. 18) describes as those by which individuals 'judge themselves and act upon themselves to make themselves better than they are'. Students are asked to be more responsible 'for their own "progress" and improvement – to manage themselves and their learning' (Ball, 2017, p. 8). Along with the broader shift to neoliberal policies in schools, such strategies, Bradbury (2019b, p. 310) contends, see students fashioned into 'little neo-liberals'. Yet the focus on self-governing techniques in these strategies carried out with ClassDojo does not remove power from the behaviour-shaping process, but rather sees it exercised in multiple forms. Foucault described this as "'a point of contact', a 'fold' or 'hinge' between technologies of domination and technologies of the self, a point at which forms of power and the making of the subject intersect" (Ball & Grimaldi, 2022, p. 290). In other words, 'the contact point where individuals are driven by others', that is, ClassDojo's platform and the behavioural data it produces, 'is tied to the way they conduct themselves' (Foucault, 2005, p. 143).

The reasons teachers and schools provide for using ClassDojo

There three most common reasons teachers and schools provide for using ClassDojo for school disciplinary purposes concern shaping behaviour and engaging students. The first is to modify, shape or control student behaviour simply and effectively. The findings from this study show that for many teachers it was this quality in ClassDojo that appealed to them most. That is, ClassDojo provided them with a simple way to get students to behave in the 'right' ways. This reasoning suggests ClassDojo's use, and appraisal, is based on principles of obedience and compliance as opposed to education and learning. Max provided similar reasons for using ClassDojo, declaring that he used ClassDojo because of the techniques of behaviour modification it provided, which he used to keep control of his class. Such reasons suggest many teachers choose to use ClassDojo for school disciplinary purposes because they view it as a 'behavioural quick fix' to the problems of student behaviour (Slee, 2016, p. 63). This is because the techniques deployed by teachers through the platform are simple and rely almost exclusively on observation and intervention using rewards and sanctions (Millei, 2010; Raby, 2012; Sullivan et al., 2014b; Woolfolk Hoy & Weinstein, 2006). Such techniques often control student behaviour quickly (Knestrict, 2018). Therefore, using ClassDojo in this way is often viewed as effective. However, perceptions of effectiveness are invariably tied to one's aims (Bear, 2013), which for behaviouristic techniques are obedience and conformity. The educational value of such techniques is low due to their promotion of submission over behavioural development (Slee, 1995). Teachers and schools often choose to use ClassDojo with narrow aims and goals in mind which diminish it largely to an instrument of compliance.

The second reason teachers and schools provided for using ClassDojo was to emphasise and promote positive behaviours in students. However, while they might have sought to offer a more 'positive' approach to discipline, there was little difference between the techniques they used and those used to discourage unproductive behaviours. This is because the techniques provided by ClassDojo for promoting 'positive' behaviours and reducing 'needs work' behaviours are based on the same principle of shaping behaviour with consequences (Bear, 2013; Slee, 1995). This emphasis from some teachers on focusing on the positive may be linked to the increasing uptake by schools of discipline approaches such as School Wide Positive Behaviour Support (SWPBS), which it should be noted maintains the use of punitive techniques while emphasising the development of positive behaviours (Corcoran & Thomas, 2021). While such approaches may encourage a move away from punishing students, they often operate via increasingly sophisticated modes of

regulation (Slee, 1995). Thus, teachers who focus on developing positive behaviours through new technologies of governance while at the same time eliminating punitive techniques may represent a continuation of this increased sophistication. Nevertheless, the relations of power produced through techniques which concentrate on positive behaviour move in the same direction as those which punish. This is because they both operate by maintaining the student in a 'relation of strict subjection' (Foucault, 1977, p. 138). This relation becomes apparent when the 'positive' feedback data recorded and displayed in students' behaviour reports are understood as 'coded signs of obedience' (Foucault, 1982, p. 787). Thus, students are judged and differentiated on the basis of their positive behaviour data, or rather, their level of compliance. Therefore, despite the positive aura surrounding practices which focus on producing and promoting positive behaviours with ClassDojo, 'the functional imperative of control' underpinning its application remains the same (Slee, 1995, p. 7).

The third reason provided by teachers and schools for using ClassDojo was to increase student engagement with behaviour and discipline. Some teachers described that students were attracted to ClassDojo's gamified features and slick visual appearance and found it engaging. Two of ClassDojo's most appealing features were its monster avatars and its points-based system. Thus, such teachers use ClassDojo principally as a way to increase student engagement with behaviour by making it more relevant, enjoyable and fun (Dicheva et al., 2015; Manzano-Leon et al., 2021; Ofosu-Ampong, 2020; Selwyn, 2014). This means that for some teachers ClassDojo's gamified features are central to why they chose to use the platform. Some of the key gamification mechanics teachers use through ClassDojo include points, scores, avatars, sounds and charts. However, while fostering student engagement is important, questions should be asked about how and in whose interest it is fostered. An analysis of the gamification techniques through which ClassDojo is used to shape behaviour reveals they are based on the same behaviouristic theory that underpins its overarching approach to discipline. That is, ClassDojo's gamification techniques operate with a clear focus on outcomes over process. This focus is evident in the way ClassDojo reduces discipline to simple reinforcement mechanisms which the teacher uses to regulate and normalise behaviour, for example through feedback points and sounds (Fuchs et al., 2014; Raczkowski, 2014; Schrape, 2014). These gamification techniques equally function as techniques of disciplinary power exercised by the teacher. This is because they operate as mechanisms which develop behaviours via a process of training rather than learning due to their reliance on repetition and obedience to produce

'correct' behaviours (Selwyn, 2014). Therefore, despite some teachers claiming they use ClassDojo to make behaviour and discipline more engaging for students, the disciplinary techniques they use remain the same and continue to constitute discipline as a mechanism of control, which serves the interests of the teacher over those of the student.

The reasons provided by teachers for using ClassDojo all promote an individualised psychological view of behaviour. Viewing behaviour in this way situates responsibility for behaviour entirely within the individual (Down, 2016; Johnson & Sullivan, 2016b; Slee, 1995; Taylor & Kearney, 2018). The disciplinary mechanisms teachers use with ClassDojo reinforce this individualised view of behaviour because they focus almost entirely on the student as the cause of behaviour. Slee (1995) explains that relying on such techniques obscures from view the influence factors such as 'school organisation, curriculum and teaching' may be having on a student's behaviour. The inadequacy of such techniques is clear when it is understood that classroom influences in particular can act as 'powerful shapers of student behaviour', which can include the physical setting and the knowledge, skills and dispositions of teachers (Sullivan et al., 2014a). However, ClassDojo's disciplinary approach ignores such factors. ClassDojo's oversimplified and individualistic view of behaviour conveys an instrumental view of the purpose of school discipline. This is because ClassDojo is seemingly adopted primarily for the behavioural outcomes it can provide, rather than the processes through which they are achieved. In this way ClassDojo can be understood as reducing behaviour and discipline to a technical issue (Kincheloe, 2012) and prescribing a view of behaviour which situates its causes exclusively within students.

Summary

The principal contribution of this chapter is its discussion of findings that outline how, and for what reasons, teachers and schools use ClassDojo as a school discipline technology. I used a theory of power and drew from literature on school discipline, education technology, the datafication of education, and governing by numbers to interpret those findings. They were discussed in relation to research question two, how do teachers and schools use ClassDojo to manage student behaviour?, and research question three, why do teachers and schools use ClassDojo to manage student behaviour? First, the discussion has shown that many teachers and schools use ClassDojo to employ a technology-based form of behaviour modification. This is a form of school discipline which relies on interventionist techniques based on behaviouristic logic to address issues of behaviour.

Second, it outlined how teachers and schools use ClassDojo to incorporate multiple forms of student surveillance into their disciplinary practices. Student surveillance and visibility are intensified through these practices which act as instruments of disciplinary power. In some cases teachers and schools used ClassDojo to create a complex network of surveillance which permeated the school and extended into students' homes. Third, it posited that teachers and schools are using ClassDojo to enact a new neoliberal form of school discipline which has formed through a coalescence of techniques of disciplinary power and neoliberal principles of government. Finally, it revealed the main reasons teachers and schools use ClassDojo for disciplinary purposes is to shape and control student behaviour, focus on developing positive behaviour, and to increase student engagement. Yet, despite teachers and schools offering these different reasons, I argued the purpose for using ClassDojo remained the same: to establish greater control over student behaviour. The discussion has thus established that together these insights suggest that ClassDojo offers, promotes, facilitates and is used to deploy a narrow, datafied form of school discipline within which control is the underlying imperative (Slee, 1995).

Chapter 8: Conclusion

In this final chapter I provide an overview of the thesis and offer concluding remarks regarding its contribution to knowledge, the implications for practice, theory and methodology, and possible directions for future research. I commence with an overview of the thesis followed by a summary of how the findings have addressed the three research questions which guided this study. I then discuss the implications derived from this research and the potential direction future research may take to advance the production of knowledge about ClassDojo as a school discipline technology.

Thesis overview

Despite ClassDojo's widespread adoption by teachers and schools in nations like Australia, the United States and the United Kingdom, little is known about the platform and how it is used to shape student behaviour. Of the small number of studies that have examined ClassDojo as a behaviour management technology most have focussed on the impact the platform has on student behaviour, and the perspectives of stakeholders on ClassDojo and their experiences with it. Only two studies have investigated how teachers use ClassDojo to manage student behaviour in classrooms. While these two studies indicate that teachers use ClassDojo to implement a reductive form of school discipline (Lu et al., 2021) which generates large and diverse volumes of data about student behaviour (Krach et al., 2016), how teachers and schools use ClassDojo's specific features and functions to enact everyday school discipline practices and pedagogies remains largely unknown. Furthermore, no studies have examined why teachers and schools use ClassDojo for disciplinary purposes. Therefore, there is a need for research that examines how and why ClassDojo is used by teachers to support their discipline practices. I conducted a study that addressed this need by investigating ClassDojo and the ways teachers and schools use it to enact school discipline practices. The study aimed to examine how ClassDojo's platform shapes school discipline through its design, and how teachers and schools use ClassDojo to implement school discipline in classrooms and schools. The investigation was guided by three research questions:

a) How does ClassDojo shape understandings of student behaviour and school discipline practices?

b) How do teachers and schools use ClassDojo to manage student behaviour?

c) Why do teachers and schools use ClassDojo to manage student behaviour?

Consequently, this study contributes to knowledge about ClassDojo in an original and substantial way. Firstly, it develops knowledge about the specific classroom discipline practices and pedagogies teachers and schools perform on a day-to-day basis with and through ClassDojo to shape student behaviour; and secondly, it is the first study to provide an understanding of the reasons teachers and schools provide for using ClassDojo to manage and shape student behaviour.

I conducted a critical qualitative inquiry of ClassDojo to investigate its platform and its application in schools. The study was carried out over two phases. Phase One investigated ClassDojo's platform and aimed to understand how ClassDojo shapes understandings of student behaviour and school discipline practices. Data were collected using a walkthrough method and online documentary research techniques. Phase Two investigated ClassDojo's implementation in schools and aimed to understand how, and for what reasons, teachers and schools use ClassDojo for school disciplinary purposes. Data were collected through online documentary research techniques, online observations and semi-structured interviews.

In both phases, data were analysed thematically using an iterative inductive-deductive approach. This involved shifting from an examination of the data to engaging with theory and literature and back again throughout the analysis. The data were subject to repeated inspection through which emerging insights and meaningful patterns and relationships were identified and progressively refined. Through this process a coding framework was developed. The framework was likewise developed using inductive and deductive processes which produced both data-driven and theoretically driven coding categories and themes. The framework was revised and adjusted over time as it was progressively tested by applying it to more data. The qualitative analysis software NVivo 12 was used to manage the data and to support the analysis. Subsequently, through this analysis of data a series of findings were developed which address the research questions that guided this study.

Consequently, this study contributes to knowledge about ClassDojo in an original and substantial way. Firstly, it develops knowledge about the specific classroom discipline practices and pedagogies teachers and schools perform on a day-to-day basis with and through ClassDojo to shape student behaviour; and secondly, it is the first to reveal the reasons teachers and schools provide for using ClassDojo to manage and shape student behaviour.

How ClassDojo shapes understandings of student behaviour and school discipline practices

The findings of this study show that ClassDojo shapes the way student behaviour and school discipline is thought about and practised by teachers and schools through its design. As a digital education platform ClassDojo brings together a range of ideas about behaviour and discipline within its features and functions. These ideas include specific discipline techniques, epistemologies, values and logics. This study's findings demonstrate ClassDojo provides a form of school discipline which is grounded in behaviourism and processes of datafication, predicated on a surveillance logic, and infused with neoliberal principles. Thus, ClassDojo promotes and facilitates understandings of behaviour and school discipline practices that are numericised, decontextualised, measurable and performative. As Decuypere et al. (2021) remind us, embedded within the designs of digital education platforms are ideas which make the world intelligible, knowledgeable and actionable in particular ways, which through their use direct users' thoughts and actions. Consequently, the ways ClassDojo shapes teachers' thoughts and actions have implications for how they use the platform to enact school discipline practices.

How teachers and schools use ClassDojo to manage student behaviour

This study has shown that teachers and schools use ClassDojo to manage student behaviour in three main ways. First, they use ClassDojo to shape student behaviour with techniques of control. Second, they use it to surveil students and make them visible. Third, they use it to govern students with the behavioural data produced about them in the platform. Consequently, teachers and schools use ClassDojo to employ a raft of interventionist practices to reward and sanction students when they perform particular behaviours, including to enforce classroom rules or encourage school values. Thus, teachers and schools use ClassDojo to address behaviour not wholistically, but by breaking it down into discrete units – or specific behaviours – which are targeted for reinforcement and correction. Such practices focus entirely on the student and what can be done to them to shape their behaviour. In this way behaviour is only understood in narrow psychological terms. Thus, ClassDojo encourages teachers and schools to enact practices which assume the causes of behaviour reside primarily within students. Such attribution for behaviour exonerates factors such as 'school organisation, curriculum and teaching' from the

discipline matrix (Slee, 1995, p. 89). Furthermore, addressing behaviour in these ways requires students to be closely monitored.

This close monitoring of students and their behaviour manifests in teachers and schools using many practices offered by ClassDojo. In particular, teachers and schools use ClassDojo to monitor students both in person and through the data produced about them in the platform. Furthermore, the student surveillance conducted through the platform often extends beyond that performed by the teacher to involve parents, other teachers, school leaders and non-teaching staff, and other students. In this way ClassDojo acts as an intermediary technology that enhances the connection between members of a school community to produce a network of surveillance aimed at students. Furthermore, intertwined with these surveillance practices are practices that make students visible. Teachers and schools used ClassDojo to make students and their behaviour visible to inform students and others about their behaviour, encourage students to self-monitor their behaviour, and foster competition between students to improve behaviour. From these uses it is evident that datafication is fundamental to the practices of surveillance and visibility implemented through ClassDojo's platform. Moreover, ClassDojo data about student behaviour has enabled teachers and schools to enact practices that surveil students in increasing detail, across more settings, by more people, via multiple techniques, over increasing lengths of time, and in a more connected and continuous manner.

Teachers and schools also use ClassDojo's student behaviour data in a range of additional ways to govern student behaviour. This study found that many of the practices teachers and schools performed which involved student behavioural data were performative. That is, they used student behaviour data as a performance metric to examine, assess and judge students based on their behaviour. In this way ClassDojo data were often used as evidence of student behaviour, and the basis from which pedagogical decisions about discipline were made. Practices which involved using ClassDojo data in this way included the formative and summative assessment of students, reporting on student behaviour, behaviour-based reflection and goal-setting activities, and management techniques which aimed to regulate student behaviour. Furthermore, when ClassDojo is used in this way routinely it becomes an apparatus of 'uninterrupted examination' (Foucault, 1977, p. 186).

Why teachers and schools use ClassDojo to manage student behaviour

This study found that teachers and schools use ClassDojo for three primary reasons: to help them manage student behaviour, to gamify school discipline, and to enhance parental monitoring. The most common reason teachers and schools provide is the simple and familiar way ClassDojo can be used to get students to 'behave'. Teachers like the simplicity of using ClassDojo's feedback to reward and punish behaviour quickly and easily, and the way students often comply with that feedback. Furthermore, teachers express that they use ClassDojo in such ways because they believe it holds students accountable for their behaviour. This reason is directly related to the way student feedback data are compiled in ClassDojo and can be displayed in classrooms and shared by teachers and schools. However, for some teachers, ClassDojo's gamified approach is the main reason they use the platform. These teachers view the appeal of ClassDojo's gamified features to students as a way to increase student engagement and get students to willingly participate in the regulation of their own behaviour. Lastly, some teachers and schools indicate that they use ClassDojo because they like the way the platform can be used to keep parents more informed about their children's behaviour. This includes keeping parents informed in real time about the feedback their child receives through the day. It also includes the more detailed and regularly updated behaviour reports parents are encouraged to monitor through the platform. Some teachers like using ClassDojo because these reports provide them with a record of student behaviour they can share with parents at parent-teacher meetings, or when behaviour problems arise.

Implications for practice, theory, and methodology

The findings of this study have a number of implications for practice, theory and methodology.

Implications for school discipline practice

This study has shown that in many ways ClassDojo provides a traditional control-oriented approach to school discipline which it has enhanced with technology. Therefore, teachers and schools that choose to use ClassDojo to manage student behaviour reduce school discipline to a program of intervention, surveillance, and compliance; in other words, control. Slee (1995, p. 24) reminds us of the risks associated with succumbing to the allure of control, as:

> Control itself becomes an impediment to learning and orderliness … Control externally applied, devoid of moral and logical force, upon students may not only impede the improvement of individuals and their community: it frequently interferes with the effectiveness of the educational project at school.

Therefore, to avoid the drawbacks identified by Slee, students, and society more broadly, would be better served if schools and teachers employ a form of school discipline that is grounded in educational principles and purposed with the broader educational vision of schooling. That is, ClassDojo should be replaced by more educative models of school discipline.

The use of data-based practices promoted by ClassDojo to engage parents with their children's schooling is also concerning. Schools and teachers should reconsider using such practices because they place an undue focus on a student behaviour and may harm the relationships between parents and their children. This is because when ClassDojo is used as a behaviour management technology the conditions upon which parental engagement occurs is confined to a regime of surveillance. While it is important that parents be informed when their child's behaviour causes serious concern for a teacher or school, the persistent stream of data parents receive from ClassDojo which details every piece of feedback their child receives from the teacher is unnecessary and ultimately negative. As Taylor (2013) explains, student surveillance fosters in students a mistrust of the people involved in their surveillance: 'A world where we're constantly watched is one we learn, moment by moment, to mistrust' (Zuckerman, 2018, p. 97).

Lastly, the findings from this study reinforce the necessity for schools and teachers to examine education technologies carefully before using them and consider how their use may shape education, pedagogy, and practice. It is important that schools and teachers look beyond the 'technological orthodoxy' in education Selwyn (2018b) describes, and the appeals of innovation and techno-solutionism that have contributed to its emergence, when considering whether to adopt education technologies. Schools and teachers must be encouraged to ask critical questions of education technologies. Such questions should require them to consider for example, the underlying theories, assumptions, and ways of knowing embedded within education technologies, whose interests are served by their use, and how these align, or not, with the pedagogies and practices they seek to implement.

Implications for theorising ClassDojo

Understanding how power functions through school discipline systems, approaches and technologies is important because it has a direct relationship with pedagogy and learning, the way knowledge is formed and distributed, and the way realities and truths are constructed.

Disciplinary power is exercised through ClassDojo via a range of key interrelated mechanisms that map neatly against what Foucault described as the 'simple instruments' of disciplinary power: hierarchical observation, normalising judgement and the examination. The findings from this study describe a variety of practices performed with ClassDojo which act as these 'simple instruments'. Foucault (1982, p. 787) recognised that in education behaviour is controlled 'by means of a whole series of power processes', in which he included 'enclosure, surveillance, reward and punishment, the pyramidal hierarchy'. This approach is captured and given a digitised technological form in ClassDojo. Numerous aspects of ClassDojo associated with both its constitution and the way it works are implicated in its functioning as a technology of disciplinary power, including its embedded gamified techniques, behaviouristic principles and logics, and surveillance functions. However, its utilisation of data is fundamental to its operation and perhaps most important to the ways power is exercised with the platform.

Data are central to almost every disciplinary practice deployed through ClassDojo, and the facet which links them to each other. For example, data capture the act of surveillance and depict it in digital form while simultaneously creating an additional medium through which to surveil students – otherwise known as dataveillance. Data are also used to deploy normalising judgements via the feedback teachers dispense for shaping student behaviour and the evaluative messages they convey when displayed through ClassDojo. Data facilitate practices of examination that enable teachers, parents and at times school leaders to perform what Foucault (1977) described as a normalising gaze by comparing, judging, measuring and transforming students into a field of behavioural knowledge. Finally, data construct behaviour as an entirely individualised – or student-derived – phenomenon. Wyatt-Smith et al. (2019, p. 3) refer to this process as 'data-based individualisation', which within ClassDojo fabricates, and promotes, an understanding of behaviour that erases from view the influence of context and locates behaviour and its potential causes instead exclusively within students themselves. This account of data and its role in exercising

disciplinary power through ClassDojo, while not exhaustive, indicates its pivotal role within many of the practices deployed by teachers in day-to-day classroom life.

Consequently, this research is significant in that it contributes to understandings of ClassDojo which incorporate power and the ways it is implicated in ClassDojo's formation and application as a school discipline technology. In particular, it has established new understandings of the ways power operates through the practices and pedagogies of school discipline performed through ClassDojo. It has additionally shown that the form of power exercised through such practices and pedagogies is that which Foucault (1977) described as 'disciplinary power' and that it is deployed primarily for the purposes of controlling and conditioning student behaviour. Therefore, through using ideas about power drawn from Foucault this thesis has developed a different knowledge of ClassDojo, one that explains it as a technology of disciplinary power.

Implications for methodology in school discipline research

The use of reader comments from online environments as a source of empirical data is novel in the field of school discipline research. In this study, such data were used to investigate, in particular, the perspectives of teachers. Historically, research examining teachers' perspectives has relied on data collected through traditional methods such as surveys, questionnaires, interviews and case studies (Woolfolk Hoy & Weinstein, 2006; Bullough & Richardson, 2015), while recognising the need to broaden the methods used to collect data representing teachers' perspectives (Bullough & Richardson, 2015). Contrastingly, online reader comments are a new form of empirical data which require the use of new methods derived from the field of internet research.[11] The use of online reader comments as a form of empirical data can be traced back to the early 2000s (Delli Carpini et al., 2004); however, it is only more recently that their use has become more common, and only within particular fields such as media and communication studies (see e.g. Koltsova & Nagornyy, 2019; Toepfl & Piwoni, 2015). It is from these fields that I borrowed the idea of using online reader comments as a form of empirical data and applied them for my own purposes to attain the perspectives of stakeholders, primarily teachers but also parents, regarding ClassDojo and its use as a school discipline technology. Consequently, including the use of reader comments in this study provided it with a richer corpus of data

[11] Chapter 4 elaborates on the use of online reader comments as a source of empirical data, including an explanation of how they were collected and the rationale for including them in this study.

with which to understand ClassDojo and its application as a school discipline technology. Therefore, this study demonstrates the way reader comments can be used as an empirical source of data in education research, and more specifically school discipline research, and may be used as a model for their use.

Directions for future research on ClassDojo

This study aimed to investigate ClassDojo because it was a new and extremely popular behaviour management technology. While it has provided new insights about ClassDojo and its application within schools, there are additional aspects of ClassDojo that should be investigated. ClassDojo continues to expand its presence in schools, including as a school discipline technology. I offer two potential avenues for future research on ClassDojo that emerged from my own study.

First, students' perceptions of the surveillance they are subject to through ClassDojo could be investigated. This study has shown that when ClassDojo is used as a disciplinary technology it often contributes to the intensification of student surveillance in schools, in a manner that is arguably designed to encourage students to accept increasing levels of surveillance. Therefore, future research on ClassDojo could investigate the way students perceive this surveillance and its acceptance or normalisation in schools. Such research would additionally provide an opportunity for students' voices to be heard, and as a result open up possibilities for new, different and often ignored accounts of students' experiences (Smyth & Hattam, 2001) of disciplinary surveillance.

Second, the relationship between ClassDojo discipline and student subjectivity could be examined. This study has shown the prominent role data plays in school discipline practices performed through ClassDojo, in particular how teachers and schools often use ClassDojo data to portray a 'true' or 'real' version of student behaviour. Future research could move beyond this knowledge to explore the impact of ClassDojo behaviour data on students' subjectivities. That is, it could investigate how students engage with the ClassDojo data produced about them and the effects it may have on the ways students think about themselves, their understandings of behaviour and their views about discipline.

In conclusion

This research has found that ClassDojo offers, promotes, facilitates and is often used to implement a narrow, datafied approach to school discipline within which control is the underlying imperative. ClassDojo's capacity to influence school discipline in this way is invariably tied to the effect digital education platforms have on education. ClassDojo shapes teachers' decisions and thoughts and makes specific forms of behaviour and discipline 'visible, knowable, thinkable, and ultimately, actionable, in ways that reformat, redo, restructure, and reconceive what [school discipline] is or could be about' (Decuypere et al., 2021, p. 7). In revealing the influence ClassDojo has on school discipline, this study has also identified the ways in which disciplinary power is implicated in both ClassDojo's design, and the practices deployed through its use. It has provided a different interpretation of ClassDojo as a school discipline technology by providing an analysis of the disciplinary approach enacted through its use that accounts for workings of power. In this way it contributes to the emerging body of critical research that considers the impact technologies are having on school discipline, from which it is hoped further research can be taken up and further knowledge developed.

In summary ClassDojo is a technology within which power, understood as a set of relations purposed with shaping behaviour (Foucault 1980f), is centralised and entrenched. It is a technology whose very design is purposed with enabling and facilitating the exercise of disciplinary power, in particular the multiple school discipline practices deployed through its use. Slee (1995) observed in Australia nearly three decades ago that approaches to school discipline were shifting toward increasingly intrusive patterns of surveillance and more sophisticated forms of regulation. ClassDojo represents a further shift along this continuum to a form of school discipline through which surveillance and regulation are intensified further.

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Appendices

Appendix A: Author contribution statement

Co-authored publication contribution statement

Publication details

Title: The datafication of discipline: ClassDojo, surveillance and a performative classroom culture

Journal: Learning, Media and Technology

Date published: 14 December 2018

Authors: Jamie Manolev, Anna Sullivan & Roger Slee

DOI: 10.1080/17439884.2018.1558237

Author contributions

Jamie Manolev: Jamie was the lead author for the above publication, and subsequently was the primary contributor to its production. Jamie contributed to the conceptual development of the publication, the main argument presented, and wrote the majority of content within the publication including revisions.

Anna Sullivan: Anna co-authored the above publication and contributed to the publications production in several ways. Anna contributed to the conceptual development of the publication and provided Jamie with ongoing guidance and feedback throughout the production of the publication. This support and feedback consisted of advice regarding the publication's conceptual framework, structure, main argument, and Jamie's writing style. Anna also provided substantial editing to all drafted versions of the publication and helped determine how reviewer feedback was to be responded to.

Roger Slee: Roger co-authored the above publication and contributed to the publications production in several ways. Roger contributed to the conceptual development of the publication and provided Jamie with feedback regarding the development of the publication. This feedback consisted of advice regarding the publication's conceptual framework, structure, and its main argument. Roger also provided some editing to the final drafted version of the publication and helped determine how reviewer feedback was to be responded to.

I hereby declare the above statement to be accurate:

Jamie Manolev. [redacted] Date: 02/05/'22

Anna Sullivan. [redacted] Date: 02/05/'22

Roger Slee. [redacted] Date: 27/04/'22

Appendix B: Semi-structured interview questions

1. Tell me about your role at the school
2. How long have you been working here?
3. Do you collaborate with other teachers, or work independently?
4. Tell me about your class
5. How many students do you have?
6. What are they like?
7. How would you describe their behaviour?
8. How would the students describe you as a teacher? Style of teaching?
9. What does good school discipline look like?
    - What is its purpose?
10. What has informed your ideas about, and approach to, school discipline?

ClassDojo

11. What was it about ClassDojo that made you decide to use it in your classroom?
    - How did you hear about it?
    - What or who was it that suggested you try ClassDojo?
    - Which aspects appealed to you?
12. Why are you using ClassDojo?
13. How have you set up ClassDojo? (Accounts, parental information/invitation/choice)
    - Did you need any support learning how to use ClassDojo? From where/who?
    - Have you had any contact or guidance from a ClassDojo mentor?
    - If I were to observe a typical day, how would I see you using ClassDojo to manage behaviour?
    - Which aspects of ClassDojo do you use regularly, and for what purpose?
    - Do you set goals for students or the class to reach with ClassDojo?
        - What happens when goals are met/not reached?
    - In what ways is behaviour feedback communicated to students?
    - How often do you use ClassDojo to manage and develop behaviour in a typical day?
    - Do you differentiate your discipline approach through ClassDojo? If so, how?
    - Does ClassDojo help you organise your students in useful ways?
14. Which types of student behaviours do you address with ClassDojo? And how did you decide on which behaviours to include?

15. In what ways do you think ClassDojo works to improve student behaviour?
    - Is it effective at improving behaviour?
    - How can you tell if its effective?
16. How do students respond to the way you use ClassDojo for behaviour?
17. Do you use any other behaviour management strategies alongside ClassDojo? Which ones?
18. Has ClassDojo changed your approach to classroom management and discipline, if so in what ways? How is it different to what you have done in the past?
19. Has ClassDojo changed the way you communicate with parents?
    - Which features do you use to communicate?
    - What are you communicating about?
    - How often?
    - How can you tell if parents are engaging with ClassDojo?
    - Have you had any problems with parents when using ClassDojo?
20. Do any parents use ClassDojo's Beyond School feature?

Data

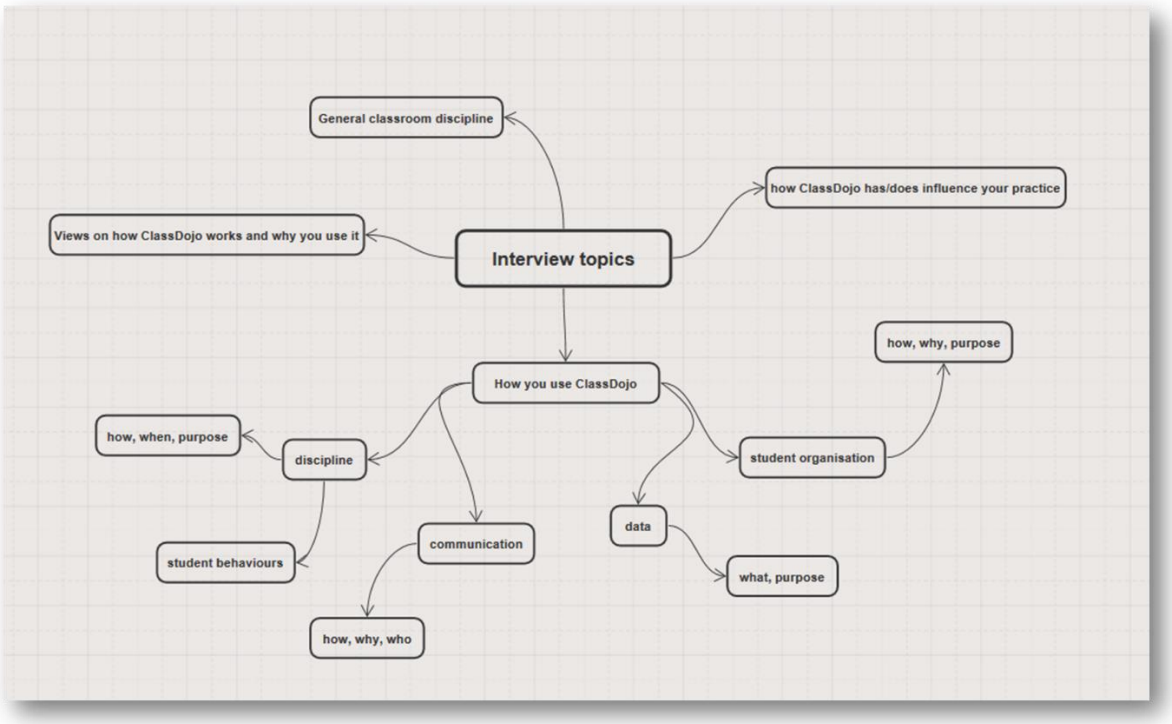
21. Can you tell me how you understand the term 'data'?
    - How can data be used to improve education and teaching practice?
22. How is the data produced through ClassDojo managed?
    - Where is it stored?
    - Who has access to it?
    - How long is it kept?
    - Are your data practices guided by school policy?
23. Can you tell me about the data produced by ClassDojo?
    - What data are collected?
    - Where do they go?
    - What happens to it?
    - What data are ClassDojo collecting about your practice?
    - What does the ClassDojo privacy policy say about how the company manages data?
24. How would you judge the quality of the data produced by ClassDojo?
    - What can it tell you?
    - How accurate is it?

25. Has ClassDojo changed the way you communicate with parents?

Conclusion

26. What do you think are ClassDojo's strengths?
27. What do you think are its weaknesses?
    - Do students dislike anything about ClassDojo?
    - Does it make managing classrooms more efficient or less efficient?
    - What does it not allow you to do?
    - What would you change about ClassDojo if you could?
28. Is there anything you would like to add about the way you use ClassDojo in your classroom, or why you have chosen to use it that we have not covered?

Appendix C: Teacher interview topics concept map



Appendix D: Post-interview observations framework

Date:

Location:

Start time:

End time:

Conditions:

Interviewee reactions to questions:

Self-assessment:

Rapport:

Interview recording check:

Did the interview produce the information I wanted?:

Appendix E: Invitation to participate in study Facebook page post

Teachers of Adelaide closed Facebook group page invitation to participate in study post

Hello,

my name is Jamie; I am a PhD student from UniSA (and a primary school teacher), and I need your help undertaking research investigating how ClassDojo is influencing classroom management practice in schools.

ClassDojo is one of the most popular tools used by teachers to help make the everyday tasks of managing classrooms and students easier.

You may be one of these educators, and through this research have the opportunity to help build an understanding of how and why this is happening.

What I am asking for

I am looking for teachers interested in participating in an interview about how they use ClassDojo to manage student behaviour, and why they have chosen to use ClassDojo for this purpose. If you are interested in participating in an interview for this study, please contact me using the details below. A more detailed information sheet and consent form will be provided to volunteers in order for them to make an informed decision regarding their participation in this study.

The knowledge produced by this research aims to benefit educators like you by informing them about classroom management practice and how it effects the school experience of students.

Confidentiality and privacy

Your confidentiality and privacy are of utmost importance; therefore, your identity will be kept safe and remain confidential. Participation is voluntary and you may withdraw from the study at any time.

Please contact me with any queries you have, I am very happy to discuss them with you.

Regards

Jamie Manolev (lead researcher)

Email: jamie.manolev@mymail.unisa.edu.au

Appendix F: Data management plan



Data Management Plan

An investigation of ClassDojo: Electronic classroom management software supporting behaviour management in the classroom

Generated 22 February 2019

Project Details

Project Title	An investigation of ClassDojo: Electronic classroom management software supporting behaviour management in the classroom
Project Description	This investigation will be a critical qualitative inquiry, using a case study approach. It will aim to investigate the electronic classroom management software 'ClassDojo' within a primary school context. I will collect data using semi-structured interviews, unobtrusive online observations, and online document search techniques. I will interview two teachers, and two principals. The interviews will provide insight into the perceptions of the software program as experienced by the interviewees. The collection of various artefacts, including visual information and copies of electronic data from the ClassDojo software will provide assistance in understanding how teachers are using the software. Unobtrusive online observations will provide candid and honest (Punch 2014) insights into teachers' accounts of ClassDojo, and reveal how they are implementing the program in classrooms. The collection of publicly available documents, such as news media articles, blog posts, Facebook and Twitter posts, and policy papers will provide data concerning important contextual factors and detailed behaviour of individuals connected to ClassDojo (Punch 2009). Data will be analysed using an inductive thematic approach.
Project Timeframe	04 Apr 2016 - 03 Mar 2021
Primary Organisation	University of South Australia (UniSA)
Research Collaborators	Postgraduate Student: Mr Jamie Manolev Supervisor: AsPr Anna Sullivan Supervisor: Prof Roger Slee

Related Project Information

Subject	Comment
Data Location	All electronic data and electronic participant consent forms will be stored as either Word documents, or in PDF form, in two separate locations, a password protected university network computer, and a portable hard drive device. Following the completion of the study all files will be converted into PDF form as a safeguard for future accessibility.

	Data and participant consent forms generated in hard copy format, and the portable hard drive device will be stored in a secured filing cabinet. The filing cabinet to be used is located at the University of South Australia, Magill campus, School of Education, room G1-35.
Data Retention	The data developed or collected as part of the project will be stored on a password protected computer on the university's network, and a portable hard drive device. On completion of the project the research data will be retained for a minimum of five years as required by South Australian legislation.
Privacy Provisions	Re-identifiable data will be held securely and will only be made available to researchers who have human ethics approval for the data. The pseudonym key generated to maintain participant confidentiality will be held separate to the study data as an added security measure. Following the completion of the study, all personal data identifiers, and the pseudonym key used to protect participant identity will be destroyed in order to transform re-identifiable data into non-identifiable data.
Data Ownership	All research data, primary material and research records created or developed by this project are owned by the student researcher.
Data Reuse	All data developed by the project, excluding confidential information that may divulge the identity of participants, will be made available for reuse by other researchers through the University of South Australia Data Access Portal.

Appendix G: Consent forms

Interviewee – teacher

UniSA Research and Innovation Services

Human Research Ethics Committee
CONSENT FORM

Use this consent form when taped materials, photographs or original works are to be retained

This project has been approved by the University of South Australia's Human Research Ethics Committee. If you have any ethical concerns about the project or questions about your rights as a participant please contact the Executive Officer of this Committee, Tel: +61 8 8302 3118; Email: Vicki.Allen@unisa.edu.au

SECTION 1: CONTACT AND PROJECT DETAILS

Researcher's Full Name:	Jamie Manolev
Contact Details:	Ph: 0403697886 E-mail: jamie.manolev@mymail.unisa.edu.au
Supervisor's Full Name:	Anna Sullivan
Contact Details:	Ph: +61883025394 E-mail: Anna.Sullivan@unisa.edu.au
Protocol Number:	
Project Title:	Investigating the implementation of ClassDojo to manage behaviour, and its popularisation among teachers

SECTION 2: CERTIFICATION

Participant Certification

In signing this form, I confirm that:

- I have read the Participant Information Sheet and the nature and purpose of the research project has been explained to me. I understand and agree to take part.
- I understand the purpose of the research project and my involvement in it.
- I understand that I may withdraw from the research project at any stage and that this will not affect my status now or in the future.
- I understand that while information gained during the study may be published, I will not be identified and my personal results will remain confidential, unless required by law.
- I understand that all information gained during this study will be stored securely at the University of South Australia for a minimum of five years.
- I understand that I will be audiotaped during the interview.
- I understand that the audiotape will be retained until the completion of the study, at which point it will be destroyed. The audiotape will be stored on the UniSA Magill campus, in a locked filing cabinet, in room G1-35 of the de Lissa building. Access to the tape will be strictly confined to the lead researcher, Jamie Manolev, and his supervisory team.

Participants under the age of 18 normally require parental consent to be involved in research. The consent form should allow for those under the age of 18 to agree to their involvement and for a parent to give consent.

Participant Signature	*Printed Name*	*Date*

Researcher Certification

I have explained the study to subject and consider that he/she understands what is involved.

Researcher Signature	*Printed Name*	*Date*

School principal

UniSA Research and Innovation Services

Human Research Ethics Committee
CONSENT FORM

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SECTION 1: CONTACT AND PROJECT DETAILS

Researcher's Full Name:	Jamie Manolev
Contact Details:	Ph: 0403697886 E-mail: jamie.manolev@mymail.unisa.edu.au
Supervisor's Full Name:	Anna Sullivan
Contact Details:	Ph: +61883025394 E-mail: Anna.Sullivan@unisa.edu.au
Protocol Number:	
Project Title:	Investigating the implementation of ClassDojo to manage behaviour, and its popularisation among teachers

SECTION 2: CERTIFICATION

Participant Certification

In signing this form, I confirm that:

- I have read the School Participation letter and the nature and purpose of the research project has been explained to me. I understand and agree to take part.
- I understand the purpose of the research project and my involvement in it.
- I understand that I may withdraw from the research project at any stage and that this will not affect my status now or in the future.
- I understand that while information gained during the study may be published, I will not be identified, my school will not be identified, and the personal results of all participants will remain confidential, unless required by law.
- I understand that all information gained during this study will be stored securely at the University of South Australia for a minimum of five years.
- I understand that interviewees will be audiotaped during the interview.
- I understand that interview audiotapes will be retained until the completion of the study, at which point they will be destroyed. The audiotapes will be stored on the UniSA Magill campus, in a locked filing cabinet, in room G1-35 of the de Lissa building. Access to the tape will be strictly confined to the lead researcher, Jamie Manolev, and his supervisory team.

Participants under the age of 18 normally require parental consent to be involved in research. The consent form should allow for those under the age of 18 to agree to their involvement and for a parent to give consent.

Participant Signature	*Printed Name*	*Date*

Researcher Certification

I have explained the study to subject and consider that he/she understands what is involved.

Researcher Signature	*Printed Name*	*Date*

Facebook closed group administrator

UniSA | Research and Innovation Services

Human Research Ethics Committee
CONSENT FORM

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Project Title:	Investigating the implementation of ClassDojo to manage behaviour, and its popularisation among teachers

SECTION 2: CERTIFICATION

Participant Certification

In signing this form, I confirm that:

- I have read the Participant Information Sheet and the nature and purpose of the research project has been explained to me. I understand and agree to take part.
- I understand the purpose of the research project and my involvement in it.
- I understand that I may withdraw from the research project at any stage and that this will not affect my status now or in the future.
- I understand that while information gained during the study may be published, I will not be identified and my personal results will remain confidential, unless required by law.
- I understand that all information gained during this study will be stored securely at the University of South Australia for a minimum of five years.
- I understand that the group of which I am an administrator, and all members of that group, will not be identified, and will remain confidential unless required by law.
- I understand that by typing my name in the Participant Signature box, I consent to the researcher recruiting interview participants from the Teachers of Adelaide Facebook group page.

Participants under the age of 18 normally require parental consent to be involved in research. The consent form should allow for those under the age of 18 to agree to their involvement and for a parent to give consent.

Participant Signature	*Printed Name*	*Date*

Researcher Certification

I have explained the study to subject and consider that he/she understands what is involved.

Researcher Signature	*Printed Name*	*Date*