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Affective capture in digital school spaces and the modulation of student subjectivities

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Affective capture in digital school spaces and the modulation of student subjectivities

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Abstract: Educational environments are increasingly using online technologies that aim to identify and manage students through affect. These forms of monitoring can be understood as a method of approaching students through the lens of positive psychology. Clearly, the relationship between schools, technology, and affect is not straightforward or benign. Yet, despite recent attention to the educational benefits of social and emotional intelligence, most educational discussions pay little critical attention to affect in terms of external interests regulating the behaviours and dispositions of students. This paper examines how student subjectivities are managed by the modulation of affect through online platforms in/for school. It is separated into three broad sections that capture the themes emerging as central to the relations between student populations and techniques of affectivity: *sensation, intensity, and value*. The paper concludes with a consideration of the implications that arise from how online technologies are used to mediate student subjectivities in secondary school.

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1. Introduction

The emergence of internet technologies is a significant influence on student experiences of school. One notable shift has been how affect circulates between student bodies in the online/offline spaces that constitute the contemporary educational environment. Dominant online platforms in schools profoundly shape the emotions of students. The ways in which these platforms are used in/for school, therefore, underpin the production of student subjectivities. As such, platforms are not simply sites where information is transmitted or exchanged between teachers and students. Instead, they have become key in shaping students' dispositions, values, beliefs, and behaviours.

These issues map onto a wider 'affective turn' in education systems over the past 20 years or so (Ecclestone & Hayes, 2009). In many countries schools are now expected to show due attention to the wellbeing and positive emotional health of students. One prominent focus has been supporting the development of students' social and emotional intelligence, fixing on qualities such as empathy for other people, and the ability to regulate one's own emotions. Conversely, fitting with the recent austerity drive in faltering Western economies, emphasis has been placed on the development of student 'resilience,' 'grit', and 'buoyancy'. All told, schools have been impelled to demonstrate a commitment to fulfilling what Williamson (2012) refers to as 'emotional-cultural' imperatives alongside the 'technical-economic' imperatives traditionally seen to shape educational practices. In this context, digital technologies are framed as a means of positively influencing students' affective capacities.

As such, educational environments are increasingly using online technologies that aim to identify and modulate student affect. Schools in the digital age, it would seem, are now expected to be as 'high touch' as they are 'high tech' (Williamson, 2012). For example, *ClassDojo* allows teachers to see into the classroom through a mobile digital application which promotes a form of positive surveillance, making every child's emotions the constant objects of scrutiny. These modes of affective monitoring can be understood as 'psychopedagogy' - a method of approaching students through the lens of

positive psychology (Williamson, 2015). Clearly, the relationship between schools, technology, and affect is not straightforward or benign. Yet, despite increasing focus on the benefits of social and emotional intelligence, most educational discussions pay little critical attention to affect in terms of external interests regulating the behaviours and dispositions of students.

Recent scholarship in the social sciences and humanities has begun to move understandings of affect away from psychological accounts of individually determined emotions. Affect is now also seen as co-produced by individuals and their social contexts, both online and offline. Papacharissi (2014), for example, explores how online platforms support networked structures of emotions. Affective capacities are mediated through digital technologies that connect individuals to each other and allow them to make collective sense of the world through narrative undertakings. Karatzogianni (2012) examines the politics of emotion and affect in the context of digital technologies, claiming that affective structures bridge the actual and the digital-virtual. Garde-Hansen and Gorten (2013) conceptualize online media as affectively laden spaces, embedded with a range of "networked tools that can be used by emotion agents to transmit affect" (p. 4). On this view, online platforms have the potential to create emotional noise that can spread both horizontally (e.g., across email and social networks) and vertically (e.g., journalism, print media) to move groups through affect.

In focusing on the emotions of school technology use, this paper draws theoretically from Massumi's (2002) framework of affect as a flow of intensity between bodies that is expressed subjectively and socially as emotions and/or actions. Massumi sees affect as both anchored in an individual subject and running between and through bodies. More specifically, affect comprises non-signifying, non-conscious, and pre-personal intensities, whereas emotions are subjective and structured expressions of these affective sensations. Affective intensity can be understood as "capture and closure" of which emotion is the most functional articulation of that capture: "It is intensity owned and recognized". On this view, emotion as a dimension of affect is "the sociological fixing of the quality of an experience which is from that point onward defined as personal" (p. 28). Emotions can also alter in intensity as they move within and between individuals and groups, a collective process that Massumi terms 'affectivity'. These modulations in

emotions have political consequences – e.g., affect can be amplified to compel individuals to behave in ways that are not necessarily intentional or consciously chosen. Crucially, then, affect is a useful concept for explaining both conscious and non-conscious aspects of why people do things, particularly how people's actions and dispositions are shaped by dominant ideological and political influences (Leys, 2011).

Against this background, the present paper builds on existing research that examines the role affect plays in exchanges between people, computational devices, and software (Sumartojo et al, 2016; Kitchin & Dodge, 2011; Thrift & French 2002). It seeks to contribute to a social-scientific understanding of how the development and uptake of mood tracking applications are gradually shifting from society more broadly into educational institutions. More specifically, it explores how student subjectivities are shaped by the modulation of affect through online platforms, and how students continue to engage in subversive/resistant behaviours despite attempts made to manage them.

The paper is separated into three sections that capture the themes emerging as central to the relations between student populations and techniques of affectivity:

i) Sensation – "materiality of technologies at the core of networked affect along with the interrelations among human and nonhuman bodies as they "inhabit" networked digital media";
ii) Intensity – "oscillations, reverberations, and resonances of affective intensity and the connections and disconnections that such intensity brings forth on online exchanges";
iii) Value – "networked communications as sites of immaterial and affective labour, analysing the creation and accumulation of value and the complex ways by which affective value ties in with political economy, human agency, and the networked technologies with which many of us now daily engage" (Hillis et al., 2015, p. 14).

The primary question that drives this research is: How do internet platforms act as conduits for the circulation of affect between student bodies and student spaces? The paper concludes with a consideration of the implications that arise from how online

technologies are used to mediate student subjectivities in secondary schools. If we are genuinely interested in obtaining a comprehensive understanding of students and their experiences of digital schooling, then the entanglement of students, affect, and online/offline spaces is an important area for analysis.

2. Research method

The studies that inform this paper revolve around digital technology (non)use within three secondary schools in the state of Victoria, Australia. These schools were selected to ensure diversity in relation to key factors such as population density and characteristics such as ethnic and cultural background, levels of educational achievement, and socio-economic status. The schools included an inner-city school located in a highly-populated urban area with considerable polarization in terms of education, income, and ethnic/cultural diversity; a city school located in a suburban area with considerable polarization in terms of education, income, and some ethnic diversity; and a rural school located in an area with a low population density and high levels of poverty in some parts.

Using a classic school ethnography approach (Delamont, 2014), strategies such as interviews, observations, extended field notes, and document and policy analyses were employed to gain understandings of how students negotiate digital spaces. Observational research took place along a continuum from non-participatory observations through to participation in some classes. Unstructured observations and field notes were made in and around the schools. Where appropriate photographs, videos, and sound recordings were taken to extend the scope of investigations.

At the time of writing, fieldwork included over 300 site visits; 500 hours of observations; interviewing and general 'hanging around'; participating in lessons, meetings, and other school-related activities such as open houses, art shows, and assemblies; taking photographs; making video and sound recordings; and exploring the schools' online systems and other digital spaces. These activities generated a substantial corpus of empirical data, only a small sample is identified in this paper. Observations and ten student focus group interviews were used as primary sources of data collection for the present paper. The size of the focus groups ranged from four to eight students at a time. Preliminary interview topics explored in general digital technology use/non-use in

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school. Initial examinations drew on a thematic analysis of our larger corpus of data, structured by the following research questions: What are students, teachers, administrators, and leaders claiming to use digital technology for in schools? How is this use and non-use patterned? What are the consequences and outcomes of this (non)use of technology? Follow-up focus-group interviews were conducted in order to obtain richer accounts of digital affects as an emergent theme. An interview schedule was developed to ensure specific areas were addressed in each focus group. Group discussions varied in duration from thirty minutes to two hours.

3. Modulatory power

The paper's theoretical understanding of digital affect is grounded on Massumi's notion of affect which encompasses the intensities of manifested sense perceptions, including those that might not have been named by specific feelings or emotions (Clough, 2007). Irreducible to feelings, emotions, or moods, affect is a powerful force that can influence the body's ability to act. As affect moves us in different ways, the gradually shifting intensities of sense perceptions can be conceived as 'affectivity' (Massumi, 2002). This power to affect and be affected comprises what Deleuze conceived as modulatory power, a structure replete with active and passive actions (Semetksy, 2006). Emerging in tandem with the control society, modulation can be understood as a form of power used to manage bodies (Deleuze, 1995).

Continuing Foucault's investigations of disciplinary power, Deleuze applied innovative metaphors to map changes in power relations that have appeared since the nineteenth century. He argued that the development of new socio-technological systems allowed a different form of power to supersede disciplinary power – i.e. modulatory power. In a control society, disciplining is no longer limited to a closed space, rather it has become a process of modulation enacted in an open space, where power operates through a vast network: "through continuous control and instant communication" (Deleuze, 1995, p. 174). This kind of society is not concerned with individuals and masses. Here, individuals become 'dividuals' and masses become samples, data, or markets.

Following scholars who have argued that instead of eradicating disciplinary power altogether, new technological systems are instead strengthening it (Boyne, 2000; Poster,

1995), I am interested in exploring how platform technologies used in schools amplify disciplinary power through modulating affect. This potential for managing bodies is aligned with what French and Smith (2016) observe as the increasing prevalence of surveillance technologies to convert bodies into objects of information. The consequences of this conversion are significant for making sense of subjectivity and the increasingly connected nature of power relations. Affectivity, in this capacity, can been conceptualized as a register of sense perceptions that may be deployed politically (Thrift, 2004).

The ability of the body to affect and be affected is foundational to the formation of subjectivity. Functioning as creative potential, the production of subjectivity is related to an individual's affective expression of self, "an individuation taking place through intensities … it's to do with individuated fields, not persons or identities" (Deleuze, 1995, p. 93). The present paper breaks down this overarching view of affect and affectivity into how students experienced digital affects as specific manifestations of feelings, emotions, and moods. Through technological architectures students are digitally 'rebodied', where, as Williamson (2016) might note, "their biological, psychological, and neurological conditions of possibility are shaped, constrained and enacted through the suturing of software skins, data membranes, and algorithmic musculature to their biodigital bodies" (p. 406). Hence, also relevant to this inquiry is the process of *becoming*. On this view, the production of subjectivity is not derived from prescribed codes, it is a dynamic and creative process situated in circumstantial cultural contexts. Human experience can be understood as a condition of possibility, or the "inventive potential" of becoming-other (Massumi, 1992, p. 140). The process of becoming views the self as something that is always changing in nature while also expanding connections (Deleuze & Guattari, 1987, p. 8).

The manifestation of modulatory power as articulated in the present paper comprises a number of key mechanisms for control, three of which are addressed in this work. Unlike disciplinary power which makes use of hierarchical observation, the modulatory mode relies on computer *simulation* or *computer modelling* (Bogard, 1996). Where the hierarchical mode possesses a centre, the modulatory mode does not have an identifiable centre. As Savat (2009) points out, "any action performed by way of digital

networks is simultaneously an observation and a recording, and potentially available anywhere in the network" (p. 53). As such, control of bodies through modulation can be enacted at any point in a connected system regardless of physical location.

Another instrument of modulatory power is *categorical sorting*. Here, modulation relies on comparative and predictive processes that create a subject's profile. While this mode does not have associated norms that determine how to adjust behaviour, it does consist of norms that situate individuals in particular categories depending on computer generated patterns. Such a mode includes processes that identify, track, and categorize individuals. The third instrument is *the sample* which replaces the examination. Samples do not require awareness and are used to identify and predict patterns of behaviour, a part of the process of social management illustrated by behavioural marketing algorithms, for example, which are used to determine patterns of consumption. This instrument is evident in online learning management systems with an inbuilt capacity to identify and predict behavioural patterns. These three mechanisms are foundational to the architecture of educational technologies and used in varying degrees to modulate student subjectivities.

4. Sensation

It is helpful here to look to Deleuze (2003) who conceived of a theory of sensation as irreducible to organic life. On this view, sensation is not merely a product of a nervous system but a fundamental capacity of any object, entity, or system. Sensation is associated with force: "sensation is vibration" (p. 32). To elaborate, an object has the ability to vibrate or be affected by forces that travel - directly or indirectly - from another object. As Deleuze puts it: "Force is closely related to sensation: for a sensation to exist force must be exerted on the body, on a point of a wave" (p. 41). Sensation is a two-way process connected to the movements set in motion by the objects implicated in an encounter. Exposed to sensation human and non-human entities are inevitably affected.

Although Deleuze does not differentiate between sensation and affect, Ash (2015) provides a useful distinction:

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> Affects can be understood as the encounter of those organized forces with other bodies. Sensations are constantly being reorganized through events of affective encounter, which in turn generate new sensations and thus new contexts for the occurrence of affective encounters. (p. 123)

In this sense, computational objects and networks are not only tools that allow us to access and disseminate information; their structure, and the objects that power this structure, play a key role in the kinds of sensations generated. Furthermore, as Ash notes: "The potential for an affect to occur is framed by the particular sensations that enable an affective encounter to take place" (p. 130). In many ways, the most significant technologies in the schools with the capacity to generate sensations and structure affective encounters were the most mundane. For example, the primary technical presence in the lives of staff and students in all three schools was Compass, a defining influence on technology use.

Mountview, Lakeside, and Middleborough could be described as 'platform schools' much in the way that Australia is a 'platform society' (van Dijck, 2016). Jose van Dijck (2016) reminds us that the dominance of platforms on contemporary digital life should not be underestimated. Instead, these are uber-technologies that profoundly affect institutional life and social order. As a consequence of this new social order is the process of datafication: the rendering of various aspects of life into digital data that can then be analyzed to understand and predict behaviours, and used to guide social interventions (van Dijck, 2014).

With this in mind, it is important to note how Compass affected students in terms of the kind of sensations it exerted. It is also possible to trace how modulatory power acts on the formation of student subjectivities through Compass. As Massumi (2015) points out, power does not simply force us along certain paths, it places these paths within us, "so by the time we learn to follow its constraints we're following ourselves. The effects of power on us are our identity" (p. 19). Recounting their experiences of Compass, a group of Year 11 students highlighted the platform as a tool for monitoring and behavioural change:

Connie: Everything goes on Compass.

Courtney: They [teachers] monitor how you act … if you've done work, or attendance.

Mila: If attendance is low it goes red and goes orange when it's like almost at red, then it goes red.

Courtney: If a staff member logs on, they can access our profile and it will have our usual things like medical but also our attendance, our reports, and comments about a student. So they could be negative or positive comments … they might put things up there like this person is a great student. They're participating in class, blah, blah, blah. Or this person is misbehaving, they're not taking the class seriously, need to monitor, and stuff like that, so comments which all teachers can access.

Connie: The teachers have access to everything.

Courtney: …what the teachers can do with it -

Mila: Power hungry. Yeah because what the teachers do with Compass has made it become a threat to us.

Connie: They take advantage of it.

(Student focus group I, Year 11 - Middleborough)

This example gestures towards several elements. First, Compass was used as a form of surveillance with teachers having access to information about students that students themselves could not see. Compass also effected a re-articulation of school discourses, as well as a form of deterritorialization and reterritorialization, inasmuch as the digital imposed onto the student a process of 'becoming-other'. A pervasive example of the modulatory power of Compass was evident in the shifting discourses within each school: students slipping in 'Red' or moving into 'Green' identities that mimicked the conditional formatting of an Excel spreadsheet.

This process of conditional formatting with students' combined data coloured along the lines of traffic lights (green, yellow, or red) was a common feature of how students' progress was understood, pervading much of the teacher talk across each school – e.g.

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"He's flagging Red", "That's a red write-up". Digital colour became a metaphor with the power to induce various perceptions. In the words of the Lakeview First Aid Nurse, students could no longer cheat because Compass knew "everything". The platform allowed teachers to see, based on colour codes, which students were potentially problematic:

> They realize they can't get away with it. I'll say, "Look, you can't cheat the system because, with Compass, they're logged every class. Their attendance gets put in every class … I can just look up a child's attendance. I can just click on 'attendance' and I can see down here, she's got red marks … so straightaway that's a red flag to me. I think you get kids scared of getting in trouble so they go to class.

The ability of the body to be affected by colour was foundational to the formation of student subjectivity. In this instance, the student was a subject becoming a colour-coded category: 'red' was bad and 'green' was good. Of course, this technology was not determining the actions of all students and teachers, but it *was* exerting a notable influence on how and why some things were done and how students were being constructed discursively through the relational database of Compass, echoing Poster's (1995) claim that the database *is* discourse because it constitutes the subject.

While teachers were required to input data into Compass relating to specific coursework grades, instances of (non)attendance and so on, most decision making around these aggregated data was conducted by software. The sensations generated by the computational structure of Compass were linked to emotions such as fear of being reprimanded for tardiness, shame for having a chronicle of 'bad' behaviour readily available to all teachers, and pride for being a 'green' student, all of which led to an affective encounter between student and machine that was intended to control behaviours, thereby shaping student subjectivities. In this capacity, Compass had not only been instated to manage the bureaucracies of the school, it was considered a more legitimate system of control and management than teachers' attempts at non-automated work. Compass, then, was a computer simulated enactment of modulatory power that had become foundational to the materiality of the school.

Compass also connected to multiple technologies external to the school and generated sensations that affected emotions beyond the student population. For instance, student attendance was tracked on the platform, and a student marked absent would trigger a text message to be sent to the mobile phones of parents/guardians informing them that their child was late or absent. In some cases, an email would be sent to the work or home email. In this sense, Compass could be understood as one component part of a larger machinic body which comprised a multitude of material technologies, social relationships, sensations, and affective charges.

Although staff considered Compass to be a boon which allowed the management of student bodies certain "efficiencies", the system was clearly fallible and often affected parents and students in negative ways. As Connie, a Year 11 Middleborough student, explained, Compass would often make mistakes, and the instantaneous and unthinking nature of its messages to parents and guardians sometimes had disastrous outcomes:

> The school sends text messages and emails to get in contact with the parents. Just yesterday, my guardian - when I got home - she was like, "Where have you been? Why weren't you at school most of the day?" And I was like, "What? I was at school." And she was like, "You were there for the first three periods and then you were not there for the rest of the day." And I was like, "I was there." I had a *Principal for a Day* meeting and they didn't mark me there. So Compass sent my guardian a text message. My guardian was [upset] when she thought I'd skipped school. Because of a text message.

These examples suggest that Compass was not a neutral vehicle that simply replicated the offline arrangement of each school, but a coded set of protocols with its own exaggerations, emphases, and affective charges. The ways in which Compass was configured certainly echoed the infrastructures, pre-existing codes, and processes of each school. These material components also delineated the kinds of sensations generated and affective encounters that resulted. Compass was not simply a replica of the offline institution; rather, the platform enforced an alternate reality of each school - prioritizing some processes, structures, and procedures over others, introducing new

checks and balances, and altering hierarchies of communication and control through the modulation of affect.

5. Intensity

Another key theme which captures the emergence of emotional maximization is *intensity*. The term can be used to illustrate the degrees to which modulation of affects occurs through material and immaterial dimensions of educational infrastructures. In the case of educational platforms, differences in intensities can be viewed as the variances in the force of affective encounters between student bodies. It was evident that dominant platforms in schools profoundly shaped the emotions and moods of students. Ranging from behavioural management of day-to-day tracking of attendance on the more mundane school technologies, to applications designed to improve the wellbeing of students, these affective moves made connections and disconnections in varying degrees of intensity. They also acted in ways that affected students both positively and negatively.

The emotions circulating around online spaces aligned students with "feelings of community" (Dean, 2010, p. 22), "or bodily space with social space—through the very intensity of their attachments" (Ahmed, 2004, p. 119). For example, Facebook was used by one teacher to create for her Year 11 students an online community of learning. In the teacher's opinion, students would be motivated to work and learn if the social networks that existed in the educational enclosure replicated the social networks in which they participated out of school. While the teacher's actions were in the best interests of her students, they could also be conceived as a method of controlling her students through manipulating affective encounters in online learning experiences.

What makes this attempt at modulating student affect interesting is that instead of simply allowing themselves to be managed, students also engaged in subversive behaviours to challenge the teacher's attempts to colonize online platforms as technologies of control. As an illustration of how attempts at modulating affect can have unintended consequences, consider the following conversation amongst a group of Year 11 students which reveals how their emotions circulated and intensified online in a way that ran counter to how the classroom teacher had intended. These intensities in

affective exchanges ebbed and flowed as a result of interactions with virtual tactics such as comments, tagging, and hashtags:

> Sebastian: Watching arguments on Facebook makes us happy.
>
> Calum: It's like entertainment. When we're bored, we read the comments or we comment too.
>
> Researcher: Do you contribute to the argument?
>
> Peri: No, we just make comments to get notifications for when other people make comments, then we can follow the argument.
>
> Calum: Sometimes they get really bad.
>
> Peri: Or funny.
>
> Calum: They don't care if everyone can see their fight.
>
> Sebastian: Sometimes we tag our friends in the comments so they can see the argument. That way they get notifications as well.
>
> Peri: Depends on how good the argument is, otherwise we don't tag.
>
> Researcher: How do you gauge the *goodness* of an argument?
>
> Sebastian: How salty it gets.
>
> Researcher: What do you mean?
>
> Peri: How angry they get at each other.
>
> Sebastian: When they start using capitals.
>
> Researcher: And you increase participation in the argument by tagging others?
>
> Calum: Yeah, like an invitation to a party. But not everyone comments. Most of them just watch and we talk about it later.

(Student Focus Group II, Year 11 - Mountview)

Modulatory power here can be understood from the perspective of the instrument of computer *simulation* / *computer modelling*. Unlike the hierarchical structure of the strictly disciplinary model that comprises a tangible centre of control, modulatory power does not have an identifiable centre. Where the hierarchical mode of discipline is structured like a pyramid composed of perspectival relays through top down monitoring, the modulatory mode is composed of nothing but relays that are acted upon at the same moment, sometimes before the event occurs, by automated systems (Savat,

2013). Put simply, in such a digital environment everything an individual does is *simultaneously* an action, recording, coding, and sorting (Poster, 1995). In this capacity, everything an individual does online is open to anticipation. As Savat (2013) argues: "observation is always a simulation" (p. 35).

It is possible to also make sense of intensities here as emotions moving sideways— through 'sticky' associations in the digital between signs, figures, and objects. Modulations of affect were triggered by tags, by comments, and by various other discursive strategies, but these modulations were not necessarily controlled by the teacher. In fact, they developed a life of their own and moved beyond her control despite her initial intentions, illustrating Dean's (2010) observations about affective online networks in that they "enable mediated relationships that take a variety of changing, uncertain, and interconnected forms as they feed back each upon the other in ways we can never fully account for or predict" (p. 22).

Nor did the modulation of intensities remain in the online world. As Terranova (2004) argues, there is also a tendency of informational flows to spill over from whatever network they circulate in to escape the narrowness of the channel and "open up a larger milieu" (p. 2). These emotions also move backwards through informational flows by re-opening past associations. Therefore, "what 'sticks' is also bound up with the absent presence of historicity" (Ahmed, 2004, p. 121). In the case of the students, this historicity included the past experiences of the students implicated in the communicative process of being online. The speed at which the spilling over into the larger milieu occurred is evidenced by the following anecdote recounted by a group of Year 8 students who engaged in divergent behaviours to what their teacher had intended when introducing social media into the classroom as a tool for keeping them 'on task':

> Joelle: It happens too quick.
> Amanda: It is like a bushfire, an out of control bushfire.
> Emily: Say if I start out fighting with Angie and Sarah because they didn't invite me
> to a party when we had already pre-planned it, and then they decide oh yeah,
> we're just having a day at home and I stop going, but they go to the party and post

Comment [A3]: Should this be larger rather than lager?

Comment [N4]: Oops. Thank you for catching this.

pictures on social media, purposely tagging me. I'd be like, "Oh, why did you do that? Why couldn't I come?" and stuff like that. Then they're defending themselves, they're like, "Oh we just didn't want you to come."

Amanda: Or they could say, "You could have come if you wanted to."

Emily: Yeah, very quickly it turns into a 'he said/she said' and also it turns into two sides, where you go up to everyone you know and you go, "Are you on their side, or are you on my side? If you're not on my side, are you really my friend?"

Amanda: And then like, you tell one friend, that one friend tells your other friend, that other friend tells that friend, and it just spreads.

Joelle: It starts on social media and then it turns into when you actually see each other in person, you just like glare at each other, just like you were on their side on this social media thing.

Alison: It ruins the friendships that we actually have in reality.

Joelle: Everybody gangs up.

Emily: Yeah say if we're walking in school and her group sees my group, it will just start a bitch fight and then they start fighting. They start fighting and then it ends up coming back to me and Michaela because me and Michaela brought everyone in [through tagging].

(Student Focus Group III, Year 8 – Middleborough)

This dual nature of online platforms resonates with Papacharissi's (2014) observations of the internet as a mechanism that "reorganizes the flows of time and space in ways that promise greater autonomy but also conforms to the habitus of practices, hierarchies, and structures that form its historical context" (p. 7).

6. Value

In their research on the expansion of the vast communication network foundational to a post-Fordist economy, Hardt and Negri (2000) discuss the central role of informatization: the way in which an economy has become information based. Part of the changes in the practice of labour now connected to informatization, they argue, is the production and manipulation of affect. Affect, in this sense, encompasses conscious/preconscious shared moods, feelings, and emotions such as attachment,

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affection, excitement, fear, ease, or wellbeing. These manifestations of affect are then turned into commodities. The conversion of affect into commodity is referred to as 'affective labour'. Affective labour is one aspect of 'immaterial labour': a form of labour that "produces an immaterial good, such as a service, knowledge, or communication" (Hardt, 1999, p. 94); it also refers to the production of moods, feelings, and emotions as objects of value.

Various critical analyses have examined how practices of labour have the capacity to produce subjectivities and society. Influenced by Terranova's (2000) work on the role of unpaid, immaterial labour in digital media industries, an extensive research has critiqued the exchanges between users who provide content and monetizable audience data to create profit for digital media industries (Fuchs, 2014; Gregg, 2011). More recent work has examined how affective capture has the possibility to transform how value is conceived and measured in contemporary capitalism (Davies, 2017). In an educational context, the value of affective capture in capitalist economies is quite noticeable in 'freemium' educational platforms since many of them draw revenue from advertising targeted through collections of user data. As Jarret (2015) puts it, "Practices on these sites generating such data have a significant, if not dominant, phatic function, intended not to convey information but to express social affinity" (p. 205). In this capacity, users share multi-modal texts that "affirm, contradict, or generate affective responses and relational intensities within interpersonal networks" (p. 205).

Like Facebook, some of these applications map an individual's relational intensities, measuring hits of the like button through which users articulate approval for something or express solidarity, for example (Jarrett, 2015). Advertising, then, becomes targeted to a particular user based on the aggregation of affective activities captured from his / her personal networks. This directly links value to users' creation of social relations or at least "relations of affective proximity". The intensities of affect between users can therefore be seen as productive, contributing directly to the economic value of the media platform. In the context of a school platform, these data exchanges can be seen as exploitative as they are unpaid contributions to site content that create economic surplus for the company in question.

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It was clear that students in all three schools were engaged in diverse forms of immaterial labour involving the production of information, knowledge, communication, and affect. Attached to the process of behavioural modification, the data being crunched in the background were turning the affective capacities of students into valuable commodities that played a central role in the digital data economy. The data mining activities of these platforms had low visibility or were invisible, often working behind the scenes. Given their usage across the school, collection of personal information was both integrated into routine activity and automated, involving machines rather than (or as well as) human beings. Data often resided with third parties, could be collected remotely, and was easier to organize, store, retrieve, and analyze. It is here, as Massumi (2015) would argue, where "the real power starts after you've passed, in the feed, because you've left a trace" (p. 27). These traces are captured and pieced together to create a profile of one's [affective] movements. In this sense, the online life of students, their "vitality" and their "affective capacities" became a "capitalist tool" (p. 25).

Australian not-for-profit organization, Smiling Mind (2016), for example, is an online "pre-emptive mental health and wellbeing program" that teaches users how to regulate their emotions. It caters to more than 5000 educational program partners and is used by companies such as IBM and Google. Illustrating the OECD (2015) and World Economic Forum (2016) focus on quantifying social-emotional learning in the classroom through technology, and mirroring educational movements in the UK, Canada, and the United States towards positive psychology in the classroom, Smiling Mind seeks to bring mindfulness meditation to Australian schools to develop social and emotional skills, such as resilience and wellbeing.

With funding from the Victorian Government, the program has been piloted in government schools with the aim that evidence-based research will support the platform's claims of mental health benefits for students, thereby paving the way for its incorporation into the Australian Curriculum by 2020. Pre-empting the possibility of formally entering the educational arena, the program is also designed to meet educational outcomes broken down to a grade by grade level. One might reasonably argue that the application is of benefit to students, and while teachers were indeed

attending to the wellbeing of their students by modulating affect through the program, they were also generating value for the organization through the data mining processes built into the application. According to the Terms and Conditions on the website, Smiling Mind uses analytics tracking and cookies to collect data which is then used to both personalize mindfulness courses and send students direct marketing materials. The following conversation highlights how students were aware of how wellbeing applications introduced into the classroom were not only used to manage their emotions but also worked as mechanisms for value generation.

> Kathleen: I downloaded [Smiling Minds] for a day and then got rid of it because I didn't like it. It's like an ad … one of our teachers got our class to download it onto our phones and have a look at it.
>
> Safia: It's supposed to teach you about meditating and calming.
>
> Kathleen: It's a *medication* tool! … yeah calming.
>
> Safia: There's just a man talking to you, he calms you down.
>
> Kathleen: I remember Miss James telling me about it, she's our bio teacher. She said that was really good to calm her down.
>
> Eve: Yeah I came across it in the app store and then I think a week later we all meditated together in bio.
>
> Kathleen: I think like two people fell asleep.
>
> Safia: In the last ten minutes of class she got everyone to lie down, and she started the voice recording that must have been on the app, and then just ran through it, and we all relaxed because last week was Wake-Up Week.
>
> Thomas: To get us all motivated for the week, to get you motivated and get you to practice mindfulness. Each day had different things … it was Motivational Monday, Turn Up Tuesday, Wind Down Wednesday, Thoughtful Thursday, and Fit Friday.

(Student Focus Group IV, Year 8 – Lakeside)

Modulating student affect in this scenario involved an attempt at controlling student emotions, and through data mining it also incorporated a process of converting the "body into pure information, such that it can be rendered more mobile and comparable" (Haggerty & Ericson, 2000, p. 613). While students were being nudged into a state of

calm by an application, algorithms were also creating data shadows constructed from digital traces students were leaving online. These affectively-driven digital traces created value for the organization in at least two ways: in the form of potential targets for advertising revenue and as statistical evidence to support the organization's entry into the Australian school system as a commercial provider of mindfulness resources. While one might argue that the software made students' affective responses easier to understand for both teachers and organizations, it also turned affectivity into a commodity form.

Relevant here are two instruments of modulatory power: *categorical sorting* and the *sample*. In this case, modulation relied on comparative and predictive processes that created a student's profile from various uses of the application. While categorical sorting did not have associated norms that determined how to adjust behaviour, it did constitute algorithmic activity that situated individuals in specific categories depending on their inputs into the system which were then used to generate patterns. This mode included automated actions that identified, tracked, and categorized students into particular types. In line with Marx's (1997) taxonomy of new surveillance technologies, the individual as a subject of data collection moved beyond the individual subject to a category of interest. Algorithms configured digital data in ways that resulted in "algorithmic identities" (Cheney-Lippold, 2011). This is also where *the sample* instrument emerges.

The construction of identities through sorting had very real material consequences inasmuch as students were profiled as particular types which then dictated what activities and advertising material they would be exposed to without the intervention of the critical thinking of a human teacher. The samples did not require awareness and were used to identify and predict patterns of behaviour, a part of the process of social management. These patterns of behaviour were then used to coach student samples into particular mental dispositions with the aim of building "happier, healthier and more compassionate people" (Smiling Mind, 2016). Affect then became a product of circulation between objects and signs where some signs increased in value the more they circulated (Ahmed, 2004).

The ways in which Smiling Mind was used in/for school not only illustrated the process of the student as subject becoming-other – a student as mental state – it also highlighted the connections between educational platforms and accumulated value in an affective economy. Through software, student emotions could be altered in intensity as they moved within and between individuals and groups as a collective process of affectivity. These modulations of emotions could be amplified to coach students to behave in desirable ways while simultaneously working to create value for the organizations invested in the educational platforms being used. Classroom use of an application that monitors, collects data, and alters mental states can be viewed as a practical example of "psycho policy" which begins with the assumption that the individual has a psychological deficit that must be redressed through "complete and intimate behaviour change through coercive mechanisms" (Friedli & Stern, 2017, p. 41). Affective capture of this nature is a threat to student privacy and decisional autonomy.

7. Conclusions

The data emerging from this project convey several important points about online educational technologies as tools for managing student behaviours. First, online surveillance had become a normalized dimension of schools and schooling. While students acknowledged that monitoring was occurring, and understood that it was an attempt at managing their emotions and behaviours, they accepted surveillance as an inherent part of their school lives. What is most troubling here is that this normalization of surveillance in school was increasingly shaping the way student subjectivities were being constructed and understood in both clear and unforeseeable ways.

In line with the construction of a different kind of subject that emerged from shifts in disciplinary power to encompass modulatory power, the evidence outlined in this paper suggests the rise of modulatory power was constructing student subjectivities as reductive digital categories. This phenomenon can be understood as a movement from the factory form of organization to which discipline adheres to that of the corporation which brings about a new mode of control based on the datafication of school space. As a result, the student could be 'optimized' according to desired needs. A troubling implication of this practice is that the life chances students in a certain category might

face could potentially be shaped by applications of strategic intelligence derived from small samples that may not necessarily be representative of larger groups.

Second, the modulation of affect also connected schooling more intimately to advertising; thereby turning students' affective capacities into value generating products. For example, when data on student moods/likes were tracked and then crunched to determine what kind of advertising content should be presented, the students became instrumental as value generating data points. These data exchanges can be viewed as a form of exploitation as they were unpaid contributions to site content that created economic gains for the organization in question.

Third, although these modulatory strategies certainly aimed at nudging students to behave in ways that were desirable to teachers, the effects of the applications used to engage in these processes also included unintended consequences such as student resistance and tactics of subversion. However, student resistance alone cannot keep in check the encroachment of big data processes into the educational arena. As such, robust privacy protections must be mapped out and implemented in school settings, alongside the development of school partnerships that include academics, advocacy groups, parents, educators and students themselves to make sense of and challenge the modulatory power increasingly wielded as a result of the datafication of digital school spaces.

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