This is the published version of a paper published in *British Educational Research Journal*.

Performative technologies and teacher subjectivities: A conceptual framework

Hans Englund⋆ and Jonas Gerdin
Örebro University School of Business, Sweden

Critical educational literature suggests that an increased reliance upon performative technologies is currently transforming the very foundations from which teacher subjectivities are constructed. Arguably though, the number of studies pointing to this risk or tendency is considerably larger than the ones theorising why this should be the case. Further, in those cases where the relationship between performative technologies and teacher subjectivities is theorised, the psychological mechanisms that the technologies appeal to are seldom brought to the fore. Based on this, the purpose of this article is to theorise the psychological mechanisms that performative technologies appeal to and work through, by means of identifying, systematising and elaborating extant understandings of such mechanisms in the critical educational literature. The results are presented in the form of a conceptual framework (referred to as the CMIS-framework) which suggests that one and the same performative technology may play many different roles, where each such role appeals to and works through a particular psychological mechanism. Importantly, depending on the type of psychological mechanism that is appealed to, the CMIS-framework suggests that this will lead to teachers (un)-consciously conducting particular forms of subjectivising work upon themselves, here referred to as compliance, mirroring, identification and self-realisation (CMIS).

Keywords: performative technology; subjectivity; teacher; psychological mechanisms

Introduction

In the wake of the neoliberalisation of the educational sector, there has been an extensive discussion of the potentially fatal consequences of using performative technologies to govern teachers in both basic and higher education institutions (see e.g. Jeffrey & Troman, 2011; Clarke, 2013; Ball, 2016; Moore & Clarke, 2016; Biesta, 2017). In fact, in the critical educational literature such technologies—which include various forms of rankings and league tables, audits, performance measures and performance-related pay (see e.g. Larner & Le Heron, 2005; Archer, 2008; Shore, 2008; Acker & Webber, 2017)—are typically referred to as evil forces that exert a form of 'onslaught' (Larner & Le Heron, 2005), 'ideological assault' (Beck & Young, 2005; Smyth, 2006; Shore, 2008; Tang, 2011) or 'violence' on the professionals (Archer, 2008).

Interestingly though, while the technologies have encountered various forms of protests and resistance both in theory and practice (see e.g. Moore & Clarke, 2016), the literature also testifies to a remarkable ability of performative technologies to

---

⋆Corresponding author. Örebro University School of Business, SE-701 82 Örebro, Sweden. E-mail: hans.englund@oru.se

ingratiate themselves and take root, also in those forms of practice where they may be least expected—such as the educational ones. In fact, it has been suggested that the technologies have an ability to take possession of (Meng, 2009), infiltrate (Archer, 2008) and terrorise the cognitive soul of the professionals (Ball, 2003; Holloway & Brass, 2018). The result, it is suggested, is the creation of a new form of teacher subjectivity, often referred to as a *performative* or *neoliberal* one. That is, a teacher subjectivity that adheres to the ideals that the performative technologies invoke, and hence one that becomes highly outcome-oriented (Ball, 2003; Mockler, 2011), individualistic (Davies & Bansel, 2010; Morrissey, 2015), entrepreneurial (Jeffrey & Troman, 2011) and prepared to do whatever it takes to be able to compete with others (Ball, 2016; Holloway & Brass, 2018).

Importantly though, while this is a well-rehearsed argument in the critical educational literature (i.e. that an increased reliance on performative technologies tends to produce new forms of subjectivities), the number of studies pointing to this risk or tendency is considerably larger than the ones providing theoretical reasons as to why this should be the case. In this article we argue that considerably more attention should be directed to such *mechanisms* in general and to *psychological mechanisms* in particular. The reason is, we suggest, that it is through appealing to the inner mentalities of teachers that the technologies become particularly powerful, as this allows them to be transformed from pure 'technologies of domination' into important 'technologies of the self' (Foucault, 1993). That is, into technologies that are not only (or even necessarily) perceived by teachers as repressive and coercive forces, but also as technologies that allow them to, for example, secure particular resources or realise themselves as individuals.

It is to the exploration of such psychological mechanisms that we turn in the current article. More specifically, the purpose is to theorise the psychological mechanisms that performative technologies appeal to and work through, by means of identifying, systematising and elaborating extant understandings of such mechanisms in the critical educational literature. The emerging results are presented in the form of a conceptual framework—here referred to as the CMIS-framework—which relies on the premise that through playing a particular role, performative technologies are able to appeal to a particular psychological mechanism which, in turn, induces teachers into conducting particular forms of subjectivising work on themselves (here referred to as compliance, mirroring, identification and self-realisation).

The CMIS-framework contributes to extant understandings of the relationship between performative technologies and teacher subjectivities in three main ways. First, it brings to light a number of psychological mechanisms that, even though they are covered in the extant literature, are seldom brought centre-stage, let alone theorised as psychological mechanisms of performative technologies (for excellent exceptions though, see e.g. Clarke, 2015; Clarke & Sheridan, 2017). Second, and in contrast to large parts of the literature, the framework identifies a number of roles that performative technologies (have to) play in order to be able to appeal to such psychological mechanisms. Third, it points to how individuals are not only being made, but also make themselves, into performative subjectivities through conducting different forms of subjectivising work upon themselves as they respond to and act upon such mechanisms (cf. Warren, 2017).

In the next section we outline the CMIS-framework. In an ensuing section, we discuss each part of the CMIS-framework in terms of the roles that performative technologies play, the psychological mechanisms they appeal to and work through and the subjectivising work they engender. In a final section, we provide concluding thoughts and some suggestions for the future.

The CMIS-framework

A key quality of performative technologies is that they constitute representational technologies. That is, they work to represent teachers and their work by means of reducing (Jeffrey, 2002; Liew, 2012), narrowing down (Keddie *et al.*, 2011), decontextualising (Jeffrey, 2002) and translating (Liew, 2012) teacher activities into a particular format—typically a quantitative one. As suggested in the extant literature, such a representational ability of performative technologies is important primarily because of how it renders teachers governable in particular ways. For through translating them into quantitative terms, teachers may be made to measure according to the laws of arithmetic and statistics and, as a result, rationalised according to the laws of performativity. The intriguing question raised above, however, is how it may be that professional teachers come to accept and even identify with such quantitative representations of themselves, to the extent that they are not only discursively produced by them but become their active consumers (cf. Biesta, 2017).

Below, we draw upon important parts of the extant literature that have already offered potential answers to these questions. More specifically, we draw upon these writings to identify and systematise extant understandings of the relationship between performative technologies and teacher subjectivities. As we started to read this literature, we did not have any pre-defined framework based on which particular categories or themes should be (dis)covered. Rather, we carefully (re-)read the literature and allowed categories to emerge in a rather inductive manner. However, as a number of such categories had emerged we concluded that these categories (and hence, the critical educational literature as such) largely reflected some existing frameworks in the literature, ranging from Foucault's (2007) different forms of power (e.g. sovereign, disciplinary, bio-power) to more mainstream writings on different forms of motivations (see e.g. self-determination theory as summarized by Ryan & Deci, 2000). In the latter parts of our readings therefore, we iterated between such more general frameworks, the critical educational literature, and our emerging CMIS-framework. Again though, we also extend this literature through elaborating these overall understandings, as we develop a conceptual framework that focuses on the psychological mechanisms of performative technologies. Essentially, the framework suggests that performative technologies play many different roles (see column 1 in Table 1), where each role appeals to and works through a particular psychological mechanism (see column 2). Moreover, the framework suggests that such mechanisms provoke different forms of subjectivising work, whereby teachers model themselves on performative ideals (see column 3). Below, we substantiate the CMIS-framework through a discussion of each understanding.

Table 1.   The CMIS-framework

Roles of performative technologies	Main mechanisms	Subjectivising work
(i) Construct and tie teachers to predefined adjudicating criteria	Dependence	Compliance
(ii) Construct teacher (in)visibilities	Self-esteem	Mirroring
(iii) Construct and materialise identifiable values and ideals	Personal significance and relevance	Identification
(iv) Construct competitive milieus and idealised teacher subjectivities	Personal aspirations	Self-realisation

Subjectivising through compliance

A first type of understanding is referred to as *subjectivising through compliance* (see row 1 in Table 1). This type of understanding brings attention to how performative technologies work as a powerful *force* (Shore, 2008; Burrows, 2012) that puts *pressure* on individuals (Davies, 2003; Archer, 2008) and *imposes* upon them externally defined priorities (Wilkins, 2015). Compliance then stresses how professional teachers—who are typically assumed to be guided by values and ideals other than performative ones —come to comply with such externally defined priorities.

The psychological mechanism in play according to this first type of understanding is typically one of 'dependence'. That is, it is assumed that people depend on something and that this something may be used as a basis for external rewards and/or punishments in order to secure particular forms of conduct. Arguably, therefore, this type of understanding is neither about trying to reform the inner mentalities of people, nor about trying to instil particular characteristics of a 'preferred professional'. Rather, it is about provoking a particular form of conduct; one which it is assumed possible to propel or reinforce by means of rewards and/or punishments (such as allowing or denying people promotions or pay rises).

When this first type of understanding is invoked, it typically becomes the role of performative technologies to state the 'rules of the game'. That is, they are seen as an important part of the apparatus through which predefined heteronomous norms are constructed; norms by which those teachers that display the preferred characteristics may be rewarded and by which those that do not can be punished (see e.g. Ball, 2003). Importantly, it is generally assumed that they take on such a role by means of their quantitative character (see e.g. Jeffrey, 2002; Helgøy & Homme, 2007; Troman, 2008). The reason is that it is through their quantitative character that commensuration is rendered possible which, in turn, allows for comparisons to be made and differentiations to be created (cf. Foucault, 1979).

This particular way of understanding performative technologies has received widespread attention in the educational literature over the years. For example, there is a large stream of research drawing upon the writings of Lyotard to suggest that education of today is judged by the ways in which it contributes to the performativity of a social system, where performativity means the 'optimization of the global relationship between input and output' (Lyotard, 1984, p. 11). As suggested by Clapham *et al.*

(2016, p. 761) and others (e.g. Perryman, 2006; Liew, 2012), the establishment of such an optimal global relationship 'requires hard facts, objective evidence and the "truth" of scientific statistical analysis'. Another stream draws upon the writings of Foucault to show how performative technologies make teacher performances available for judgement by the ways in which they are categorised, compared and differentiated (see e.g. O'Leary, 2013). In these (and similar) cases, it becomes clear that performative technologies are deeply involved in constituting the very criteria by which normativity is created, maintained and altered in educational contexts. Not least their ability to classify and separate that which is (allegedly) good/better from that which is bad/worse, allows for both material and symbolic rewards and punishments (cf. Ball, 2003).

In the literature, there are plenty of examples where performative technologies form part of such an external and overt form of regulation with apparent subjectivising effects. A regulation where test regimes, rankings, graded observations, and so on are used as a basis for punishment so as to provoke compliance. For example, Tang (2011, p. 375) argued that indicators of performance are typically tied to 'the punitive effect of "school closure and class reduction"', while Shore (2008, p. 289) and others (e.g. Wilkins *et al.*, 2012) showed how funding is typically tied to particular performances, so that 'departments with problems, instead of receiving support, were punished by further withdrawal of their funding'. As a result, they argue, schools become commodified in ways that 'virtually guarantees professional judgement is undermined by a culture of "coercive compliance"' (Wilkins *et al.*, 2012, p. 67). As noted by Ball (2012, p. 140) and others (e.g. Shore, 2008; Troman, 2008), however, the use of performative technologies as a form of external regulation 'is not in any simple sense a technology of oppressions; it is also one of satisfaction and rewards, at least for some'. That is, for those teachers, groups, schools that end up in the right category when quantified and classified, a performative system may be highly rewarding. It may indeed require (radical) adaptation, but in a performative system, monetary and professional rewards typically come to those who are ready to comply with its norms (see e.g. O'Leary, 2013; Piattoeva, 2015). Or, as suggested by Page (2016), those who can display a high success rate can at least expect to be relieved from the pressure and enjoy some of their 'earned' professional autonomy.

Subjectivising through mirroring

While the first type of understanding stresses how a particular form of teacher subjectivity may come about as people are rewarded and/or punished in relation to what is constructed as important/normal, a second type of understanding points to how such 'normalisation' may also come about through *mirroring processes* (see row 2 in Table 1). That is, rather than being restricted to the imposition of externally defined norms, normalisation may also be linked to the *visualising* role of performative technologies and the ways in which such visualisations produce a mesmerising gaze of others.

The psychological mechanism in play according to this second type of understanding is related to an individual's need for positive self-esteem. A need that is dependent on how one is perceived and judged by (absent) others, where such perceptions and

judgements, in turn, are largely influenced and formed by the *visualising images* pro-vided by performative technologies (cf. Knights & Clarke, 2014; Moore & Clarke, 2016). As a consequence, how one is represented by the performative technologies becomes something that continuously has to be managed so as to avoid guilt or shame, achieve legitimacy, or simply maintain a positive self-image.

From such a perspective, performative technologies cannot be conceived of *only* as external objects that have to be managed to secure/avoid particular rewards/punish-ments (cf. the first type of understanding in Table 1). Rather, according to this sec-ond type of understanding, attention also has to be directed to the ways in which performative technologies say something—to myself and to others—about what I do and who I am. In the literature, such a shift in focus typically means that other facets of the performative technologies are brought to the fore; facets related not so much to the construction of, and linking of people to, heteronomous adjudicating criteria, but rather to the type of visibilities constructed and the ways in which such visibilities tend to incite self-reflection and self-discipline among individuals.

Also, this second type of understanding has attracted widespread attention in the educational literature. One stream of research draws upon Foucault's writings on dis-ciplinary power (see e.g. Ball, 2003, 2012; Perryman, 2006, 2009; Clapham, 2013; Page, 2015). In this stream, a well-rehearsed argument is that performative technolo-gies work as a form of surveillance technique (O'Leary, 2013; Page, 2017a,b) that brings about a form of 'mesmerising gaze'; a form of (post)panopticism that 'imposes on those whom it subjects a principle of compulsory visibility' which, in turn, tends to maintain 'the disciplined individual in his subjection' (Foucault, 1979, p. 187). Along these lines, Perryman and colleagues (see Perryman, 2006, 2009; Perryman *et al.*, 2011, 2017) have shown how school inspections work as a form of performative regime that leads to transformed identities, due to the fact that teachers feel they are constantly being observed. In a similar manner, Page (2016, 2017a,b,c) and others (see e.g. O'Leary, 2013; Englund & Frostenson, 2017) have discussed how for-malised observations, appraisals and student voice come to work as a normalised form of visibility. Another related stream of research includes scholarly work in which notions like accountability and transparency are mobilised to discuss how the quanti-tative representations produced by performative technologies allow for a particular form of visibility (see e.g. Jeffrey, 2002; Perryman, 2006, 2009; Lingard & Sellar, 2013); one that opens up for public scrutiny what was previously considered almost a 'secret garden' of the teaching profession (see e.g. Helgøy & Homme, 2007; Wilkins & Wood, 2009).

In the literature, there are plenty of examples of how this visualising role of perfor-mative technologies has marked subjectivising effects. For example, the teachers in Jeffrey's (2002, p. 543) study testify to how it 'is very difficult to be yourself when you know you are been scrutinised in this way. All the time you are thinking "What do they think?" You are unable to be yourself, because you are more conscious of what they are thinking. You are subconsciously becoming what you think they want you to be and my style of teaching is about being me'. In a similar manner, O'Leary (2013) and others (see e.g. Collinson, 2003; Perryman, 2006) point to how teachers and schools slowly but surely come to adapt to the ways in which they are (or want to be) displayed.

Importantly though, according to this second type of understanding, these effects should not primarily be seen as a form of compliance to external forms of regulation (cf. the first type of understanding), but rather to the ways in which mirroring processes do things with those that are caught in their mesmerising gaze. Again, when teachers have a perceived need for positive self-esteem; when it becomes, in Moore and Clarke's (2016) terms, important for them to ask existential questions of what it means to be and what one has to do in order to merit the title of a good teacher, and one finds that the answer is very much reflected in and through the performative technologies, then one becomes highly vulnerable to the ways in which one is put on display (Shore, 2008). As suggested by Ball (2003, 2012) and others (e.g. Keddie *et al.*, 2011), this form of vulnerability may not only produce a form of *ontological insecurity*, but also perceptions of inadequacy, incompetence and self-doubt. Perceptions that, in turn, tend to make individuals highly aware of themselves as visualised objects (cf. Collinson, 2003) and their various forms of (imposed) accountabilities (Keddie *et al.*, 2011). Importantly, when individuals become aware of themselves in this way, they may become inclined to do some far-reaching subjectivising work on themselves, if not primarily to reach their 15-minutes of fame then at least to avoid public humiliation.

Subjectivising through identification

While the first two types of understanding in the CMIS-framework are founded on a belief that performative technologies become forceful primarily because they incentivise and/or induce people to become something which they were not, the third understanding—*value identification*—places a stronger emphasis on their ability to represent that which is *natural*, *relevant* and even *desirable* (see row 3 in Table 1). That is, to appear as if there is no apparent or inherent conflict between their ideological underpinnings and the values and ideals cherished by the governed professionals.

Hence, this type of understanding is also founded on a belief that performative technologies construct and provide heteronomous norms. In this case though, focus is directed towards how such norms constitute something with which individuals can identify. As a result, the psychological mechanism in play is more about *personal significance and relevance* than incentives and the need for positive self-esteem. The premise is that to the extent that individuals (can be made to) identify with and become committed to a performative ideology, there is no need for a governance form that depends on external incentives or alludes to people's self-esteem. Rather, through evoking feelings of congruence, relevance and personal significance, the performative technologies become forceful because they come to be seen as a natural(ised) part of the professional world of education. An important example of this is where teachers come to see the technologies not only as a means of measuring particular outcomes that they value highly (such as the performances of their pupils), but also as a concrete tool for improving such outcomes. Other similar examples include where the technologies, in the eyes of the professionals, become tools that bring to the fore what is already done, that allow them to secure wished-for attributes (such as quality and equality) and that are hard to resist as it is hard to criticise that which has been accepted as part of who one is or that which (allegedly) is 'commonsensical', 'progressive' and 'inherently positive'. Importantly, when the type of psychological

mechanism associated with performative technologies shifts once again, so do their roles. In fact, when processes of identification are stressed, performative technologies tend to become objects which construct and materialise values and ideals with which teachers can identify.

One stream of research which relies on this line of reasoning is institutionally oriented educational research. In this stream, it is stressed that the ways in which performative technologies work to objectify and externalise teachers and educational practices constitute an important part of processes of institutionalisation (Lynch, 2010). From such a perspective, the (gradual) adoption of particular forms of subjectivities reflects a form of institutionalisation of performative ideals, whereby they become a natural, normalised and taken-for-granted part of what it means to be a teacher (see e.g. Acker & Webber, 2017; Grealy & Laurie, 2017; Holloway & Brass, 2018). Processes through which individuals are initiated into 'not only a language but a way of understanding the world, through the ideas, cognitive structures and experience expressed in that language' (Henkel, 2005, p. 157).

A second stream of research that mobilises a similar type of argument is where researchers talk about how performative technologies tend to *colonise* educational settings (see e.g. Davies, 2003; Shore, 2008; Clarke, 2012; Morrissey, 2015). From such a perspective, performative technologies have subjectivising effects because of how they induce teachers to absorb particular concepts and values; a form of ideological indoctrination made possible by the ways in which these technologies aim for, and hijack, particular (attractive) concepts and 'must issues' (cf. Piattoeva, 2015). That is, through appropriating (and reconstituting) discourses on, for example, quality (Davies & Bansel, 2010) and equity (Davies, 2003) and through focusing on that which 'evidently works' and that which promises 'progress' and 'comeuppance' (Davies, 2003; Wilkins, 2015), people are seduced into perceptions of congruence, personal significance and relevance. Moreover, through suppressing references to issues that may evoke negative connotations (such as power, politics and interest), the likelihood of a silent form of colonisation is reinforced (Lynch, 2006), resulting in a form of subtle integration and internalisation of particular expectations; an alignment of 'educators' inner mentalities and conduct with a range of governing norms and ideals' (Holloway & Brass, 2018, p. 2; see also Shore, 2008).

In the literature, empirical studies also testify to the subjectivising work that such a value-identification mechanism tends to engender. For example, the study by Acker and Webber (2017, p. 549) indicates that the acceptance of measurements within academia reflects the institutionalisation of performative values and ideals, as actors seem to view accountability, transparency and self-reflection as something 'natural'. In a similar manner, one of Ball's informants concludes that 'I find that one of the most fundamental challenges of my job is trying to avoid becoming incorporated into market modes of thinking. Of course, the more time you spend at work trying to please your superiors, the more you use the language of performativity and begin to believe in it yourself' (Ball, 2016, p. 1134). These empirical examples suggest that while subjectivising work may indeed involve attempts to achieve/avoid something— whether it refers to rewards/punishments (as in compliance) or the risk of being caught in the wrong social category (as in mirroring)—it may also involve feelings of *personal significance* and *relevance*.

Subjectivising through self-realisation

A fourth and final type of understanding in the CMIS-framework is referred to as subjectivising through *self-realisation*. This type of understanding resembles the third one—identification—in the sense that it stresses how performative technologies are pivotal in constructing a subject that carries particular values and ideals. However, rather than pointing to how the technologies work behind the backs of individuals through 'seducing' them into identifying with values and ideals of performative technologies, this type of understanding points to how the technologies are also deeply involved in supporting and encouraging the attempts of individuals to act as if they were 'autonomous' and 'free' subjects.

The psychological mechanism in play according to this fourth type of understanding is related to teachers' presumed need to realise their personal aspirations and ambitions. That is, it is assumed that teachers are driven by an ambition to fulfil themselves as individuals through, for example, reaching towards their own desires, maximising their own potential, or striving towards a sense of inner fulfilment. Importantly, it is assumed that they are best able to do so when left to their own freedom and aspirations. That is, when they are liberated so that they may determine their own directions, make their own choices and shape their own lifestyles (cf. Rose, 1999).

From such a perspective, performative technologies take on yet other roles. On the one hand, they help to constitute market/competition-based milieus within which individuals can feel that there is room for individual agency and choice, so that they may strive towards that which they are interested in and curious of. On the other hand, they help to render individuals capable of bearing and realising their regulated freedom (Rose & Miller, 1992), through, for example, providing information that allows them to monitor, diagnose and assess themselves in their drive towards development, improvement and fulfilment. Arguably, such roles neither concentrate (solely or even primarily) on feelings of guilt or shame (or people's need for positive self-esteem), nor do they aim to regulate or homogenise the values with which teachers identify. Rather, they try to get hold of and appropriate their inner feelings of what it 'inevitably' means to realise themselves as teachers in a neoliberal world.

In the educational literature, there is a large stream of research that directs attention to this 'indirect' form of governance—sometimes referred to as governing from a distance (see e.g. Ball, 2003). Drawing on Foucault's writings on neoliberal governmentality and Latour's writings on acting at a distance, it has been shown how performative technologies help constitute the milieu within which teachers work as a 'market' and, as a result, foster competition. The premise is that in order for 'market forces' to be played out, educational settings have to be performed as a marketplace; the players have to be dressed in the proper clothing, they have to be displayed and compared, so that, in the end, the consumers may make their choices and the winner may take it all. From such a perspective, performative technologies do not control or coerce teachers into particular forms of conduct. Rather, they help to set them up against each other (Davies & Bansel, 2010) so that they become accountable to, and thereby controlled by, each other (Piattoeva, 2015). Importantly, in doing so, they indirectly help to make sure that those teachers who want to *realise themselves* as 'good' teachers have to sharpen their competitive spirit and their rival appetite.

Another stream of research that has provided detailed insights into such a complex interplay between, on the one hand, an individual's personal aspirations and cherished images of who one wants be and, on the other hand, the expectations of others (including those derived from performative technologies) can be found in studies based on psychoanalytic theory. For example, drawing upon Lacanian psychoanalytic theory, Clarke and colleagues (e.g. Clarke, 2012, 2015, 2018; Clarke & Sheridan, 2017; Clarke *et al.*, 2017) have argued that this type of interplay results in an 'extimate' form of subject, i.e. one which is 'neither fully inside nor outside but both simultaneously' (Clarke & Sheridan, 2017, p. 196). In a study of pre-service teachers and how they managed the competing demands they experienced between their own personal aspirations and the external demands made upon them, Clarke *et al.* (2017) show how Christian—one of the interviewees—tried to stay true to his 'ideal ego' and avoid becoming his feared self. Indeed, while such processes may be characterised by difficult and sometimes painful struggles for the individual (see e.g. Clarke *et al.*, 2017), this fourth mechanism stresses how performative technologies—when designed as centrifugal forces (Foucault, 2007)—may ease this pain through providing symbolic images of the 'ego ideal' that allegedly overlap with and encourage the individual to strive towards their ideal ego. That is, rather than requiring the individual to subordinate the self to the other by means of (discourses of) standards, quality and accountability, the technologies are often embedded in a rhetoric that inspires the individual to follow his or her dreams and to act as 'an autonomous rational actor exercising full and free agency as it navigates its chosen educational course in order to maximize its outcomes' (Clarke, 2012, p. 48).

Arguably, this fourth mechanism is pivotal in producing the kind of neoliberal subject that Ball (2012, p. 132) refers to as a calculating, solipsistic, instrumentally driven, 'enterprise man'. That is, a subject that develops a competitive market mentality (Davies & Bansel, 2010); one who feels free and yet if she wants to 'survive' on the educational market, 'inevitably' needs to accept the rules of the market (see e.g. Liew, 2012). Rules which imply that she needs to become committed to continuous improvements (Jeffrey & Troman, 2011) and become what has been referred to as a 'targeted self' or a 'shape-shifting portfolio person' (Ball, 2012, p. 137).

Discussion and conclusions

The CMIS-framework identifies, systematises and elaborates extant understandings in the critical educational literature of the psychological mechanisms that tend to make performative technologies powerful. Importantly though, while the CMIS-framework is grounded in a number of important insights already made in the extant literature, it also contributes to these insights in a number of ways. Below, we turn to these contributions that the framework offers and the directions for the future it suggests.

Performative technologies can play many different roles

A first insight that the CMIS-framework suggests is that performative technologies can play many different roles. In fact, and as detailed above, it suggests that

performative technologies not only construct and tie teachers to adjudicating criteria, but also work to visualise them, provide identifiable values and ideals, and constitute particular milieus and subjectivities (see column 1 in Table 1).

Indeed, these identified roles of performative technologies are not entirely novel as such. Rather, they are all 'derived' from extant lines of reasoning in the literature. Importantly though, far from all of this research explicitly identifies and discusses performative technology roles per se, let alone the fact that any particular technology can play different roles. On the contrary, much of this research tends to 'list' a number of neoliberally inspired technologies and focuses on the ways in which they rely on a particular form of representation of educational practices—typically a quantitative one. In fact, ever since Stephen Ball combined Lyotard's notion of performativity and Foucault's notion of technology into 'performative technologies' some two decades ago (see e.g. Ball, 2003), performative technologies have been referred to primarily in terms of their various *empirical clothing*, such as targets (Hardy, 2012), standards (Clarke, 2013), surveillance technologies (Page, 2017a), inspections/auditing (Lynch, 2010) and league tables (Hardy, 2012).

While we neither object to the list of technologies as such, nor to the importance of studying them empirically, we see two potential problems when defining performative technologies in such a 'practice-based' way. A first problem is associated with the risk of developing a too monolithic view on performative technologies. The premise is that if the roles that performative technologies play can vary both within and between technologies, then they should not be seen and treated as examples of a 'monolithic object'. Rather, as suggested by the CMIS-framework and elsewhere (see e.g. Leonard & Roberts, 2014), they should be conceptualised as 'multiples' with highly heterogeneous and fluid qualities. Qualities which imply that we 'need to allow for a greater complexity than, say, a direct link between neoliberal elements of policy discourse and reduced professionalism' (Leonard & Roberts, 2014, p. 315).

A second and related problem with 'practice-based' definitions of performative technologies is that they risk diverting our attention away from the theoretical qualities of performative technologies. In this article we argue that this risk should preferably be avoided as such qualities may not only further our understanding of what it is that makes the technologies particularly powerful, but may also underlie further discussions of how to resist them and their unwanted effects. In this sense, the CMIS-framework contributes to the extant literature through identifying four interrelated, yet distinct, roles which appeal to different psychological mechanisms of teachers.

Mechanisms of performative technologies

A second insight that the CMIS-framework suggests is that performative technologies become powerful through the ways in which the roles referred to above appeal to a number of psychological mechanisms. As outlined in more detail above, we refer to these as dependence, self-esteem, personal significance/relevance and personal aspiration (see column 2 in Table 1). Indeed, just as was the case with the roles, these mechanisms are largely grounded in the extant literature and hence are not entirely novel as such. However, this literature rarely brings them centre-stage and theorises them as psychological mechanisms of performative technologies.

We see two potential problems related to such a lack of focus on psychological mechanisms. A first problem is the risk of getting caught in an understanding of performative technologies as a form of deterministic 'natural force' that cannot be resisted. Examples of this include where performative technologies are theorised as external objects that wash over the educational sector like a vast tidal wave or like an avalanche that produces an unstoppable amount of numbers (see e.g. Hardy, 2015). Or, where the technologies become evil forces that constitute a form of 'onslaught' (Larner & Le Heron, 2005), 'ideological assault' (Beck & Young, 2005; Smyth, 2006; Shore, 2008; Tang, 2011), or as enacting violence on the professionals (Archer, 2008). Arguably, when mobilising such metaphors, performative technologies become pure 'technologies of domination'. That is, they become coercive, authoritarian and intrusive technologies that work *upon* educational subjectivities (see e.g. Perryman, 2006; Burrows, 2012). A view which is arguably too simplistic if we want to better understand *why* performative technologies produce particular effects, as such a view means that the (psychological) mechanisms that produce the effects are largely overlooked.

A second and related problem is that if we assume that performative technologies work primarily as a 'technology of domination' (i.e. as an unstoppable and uncontrollable force that is largely independent of those that it runs down), we run the risk of directing attention mainly (or perhaps only) to the various negative responses that the technologies seem to generate. Importantly though, if we want to understand the intriguing questions of how and why professional teachers may become active consumers of performative technologies, we must acknowledge that, from the point of view of the practicing teacher, such technologies are also associated with many *positive* aspects. In fact, when considering the psychological mechanisms identified in the CMIS-framework, it becomes evident that there are always (a large number of) winners who are recognised and rewarded both materially and symbolically due to the technologies (cf. the first two understandings in Table 1). Importantly though, this is not the only attractive and seductive quality of performative technologies. On the contrary, while they are certainly often seen as odd birds (perhaps sometimes even as raptors) to the practicing teacher, they are probably equally often seen as tools that help them conduct their work. Tools which make sense to them and which they find relevant, as they enable not only self-reflection and personal development, but also more general and desirable values in the modern western world, such as quality and effectiveness (cf. the third understanding in Table 1). Finally, if performative technologies become truly constitutive of the world that they purport to represent, it is hard to see why individual teachers should find them problematic at all (cf. the fourth understanding in Table 1).

Constructing and managing a performative subjectivity

A third and final insight that the CMIS-framework suggests is that due to the different roles that performative technologies play and the psychological mechanism that each such role relies on, teachers will (un)consciously conduct particular forms of work upon themselves; work which tends to result in the development of a performative subjectivity. As detailed above, the CMIS-framework suggests that such work may

range from processes of compliance and mirroring to identification and self-realisation (see column 3 in Table 1).

In the extant literature, the discussion about such performative subjectivities has thus far been largely focused on the particular qualities that make up a performative subjectivity. In particular, it has been suggested that, since performative technology representations are primarily decontextualised, quantitative and outcome-oriented in character, teachers will tend to develop particular predispositions that allow them to reach such outcomes (see e.g. Ball, 2003; Larner & Le Heron, 2005; Shore, 2008; Morrissey, 2015). That is, they tend to develop a particular form of mentality that will orient them towards that which has an effect on the outcome numbers (Ball, 2003; Mockler, 2011)—which typically requires the cultivation of individualistic (Davies & Bansel, 2010; Morrissey, 2015) and entrepreneurial qualities (Larner & Le Heron, 2005; Jeffrey & Troman, 2011), as this will allow them to compete with others (Archer, 2008; Holloway & Brass, 2018).

Arguably, while the CMIS-framework acknowledges the need to identify the qualities that characterise a performative subjectivity, we see a problem with a singular focus on those qualities per se. For such a focus runs the risk of losing sight of how such qualities emerge and may be 'internalised' in largely different ways among teachers. The premise is that even though performative technologies contribute to the construction of an idealised image of a 'preferred professional', such an idealised image does not automatically result in a corresponding subjectivity among practicing teachers. Rather, the CMIS-framework suggests that performative technologies—through the different roles they play and the psychological mechanisms they appeal to—can sometimes produce more or less calculated compliance or 'fabrications' (see e.g. Ball, 2003; Perryman, 2009; Clapham, 2013), while at other times they may produce teacher subjects who are not even aware of the performative qualities that they take on and reproduce. Arguably therefore, the CMIS-framework stresses the *different* ways in which performative technologies lure individuals into internalising their underlying logic as they comply with, mirror themselves in, identify with and realise themselves through performative technologies.

Concluding thoughts

Critical educational literature suggests that performative technologies form part of a particular type of govern-*mentality* that is largely alien to the idea of a profession governed by values of autonomy, integrity, independence and trust. Despite this 'clash' though and the attempts at resistance it often seems to engender, there is mounting evidence suggesting that teacher subjectivities are being transformed as a result of the current advancement of this type of technology. The aim of this article has been to contribute towards a better understanding of this ongoing transformation by means of developing a framework that offers four different understandings (or 'sub-theories') of such processes, where each understanding suggests an interplay between performative technology roles, psychological mechanisms and subjectivising work. Arguably, while the framework may be seen as an important contribution in its own right, it can also be seen as a springboard for further scholarly work, so that even more light can be cast on the processes that

go on *in between* the representation of teachers in a performative format and the ways in which such representations seem able to produce new forms of teacher subjectivities.

Acknowledgements

References

Acker, S. & Webber, M. (2017) Made to measure: Early career academics in the Canadian university workplace, *Higher Education Research and Development*, 36(3), 541–554.

Archer, L. (2008) The new neoliberal subjects? Young/er academics' constructions of professional identity, *Journal of Education Policy*, 23(3), 265–285.

Ball, S. J. (2003) The teacher's soul and the terrors of performativity, *Journal of Education Policy*, 18 (2), 215–228.

Ball, S. J. (2012) *Foucault, power, and education* (Abingdon, Routledge).

Ball, S. J. (2016) Subjectivity as a site of struggle: Refusing neoliberalism?, *British Journal of Sociology of Education*, 37(8), 1129–1146.

Beck, J. & Young, M. F. D. (2005) The assault on the professions and the restructuring of academic and professional identities: A Bernsteinian analysis, *British Journal of Sociology of Education*, 26 (2), 183–197.

Biesta, G. (2017) Education, measurement and the professions: Reclaiming a space for democratic professionality in education, *Educational Philosophy and Theory*, 49(4), 315–330.

Burrows, R. (2012) Living with the h-index? Metric assemblages in the contemporary academy, *Sociological Review*, 60(2), 355–372.

Clapham, A. (2013) Performativity, fabrication and trust: Exploring computer-mediated moderation, *Ethnography and Education*, 8(3), 371–387.

Clapham, A., Vickers, R. & Eldridge, J. (2016) Legitimation, performativity and the tyranny of a 'hijacked' word, *Journal of Education Policy*, 31(6), 757–772.

Clarke, M. (2012) The other side of education: A Lacanian critique of neoliberal education policy, *Other Education: The Journal of Educational Alternatives*, 1(1), 46–60.

Clarke, M. (2013) Terror/enjoyment: Performativity, resistance and the teacher's psyche, *London Review of Education*, 11(3), 229–238.

Clarke, M. (2015) 'Knowledge is power'? A Lacanian entanglement with political ideology in education, *Critical Studies in Education*, 56(1), 71–85.

Clarke, M. (2018) Democracy and education: 'In spite of it all', *Power and Education*, 10(2), 112–124.

Clarke, M. & Sheridan, L. (2017) Heroes and villains: The insistence of the imaginary and the novice teacher's need to believe, *Asia-Pacific Journal of Teacher Education*, 45(2), 194–206.

Clarke, M., Michell, M. & Ellis, N. J. (2017) Dialectics of development: Teacher identity formation in the interplay of ideal ego and ego ideal, *Teaching Education*, 28(2), 115–130.

Collinson, D. L. (2003) Identities and insecurities: Selves at work, *Organization*, 10(3), 527–547.

Davies, B. (2003) Death to critique and dissent? The policies and practices of new managerialism and of "evidence-based practice", *Gender and Education*, 15(1), 91–103.

Davies, B. & Bansel, P. (2010) Governmentality and academic work: Shaping the hearts and minds of academic workers, *Journal of Curriculum Theorizing*, 26(3), 5–20.

Englund, H. & Frostenson, M. (2017) Managing performance evaluation uncertainties in schools: When teachers become struggling performers, *European Educational Research Journal*, 16(6), 885–906.

Foucault, M. (1979) *Discipline and punish: The birth of the prison* (London, Penguin Books).

Foucault, M. (1993) About the beginning of the hermeneutics of the self: Two lectures at Dartmouth, *Political Theory*, 21(2), 198–227.

Foucault, M. (2007) *Security, territory, population: Lectures at the Collège de France, 1977–78* (Berlin, Springer).

Grealy, L. & Laurie, T. (2017) Higher degree research by numbers: Beyond the critiques of neo-liberalism, *Higher Education Research and Development*, 36(3), 458–471.

Hardy, I. (2012) "Managing" managerialism: The impact of educational auditing on an academic "specialist" school, *European Educational Research Journal*, 11(2), 274–289.

Hardy, I. (2015) "I'm just a numbers person": The complexity, nature and effects of the quantification of education, *International Studies in Sociology of Education*, 25(1), 20–37.

Helgøy, I. & Homme, A. (2007) Towards a new professionalism in school? A comparative study of teacher autonomy in Norway and Sweden, *European Educational Research Journal*, 6(3), 232–249.

Henkel, M. (2005) Academic identity and autonomy in a changing policy environment, *Higher Education*, 49(1&2), 155–176.

Holloway, J. & Brass, J. (2018) Making accountable teachers: The terrors and pleasures of performativity, *Journal of Education Policy*, 33(3), 361–382.

Jeffrey, B. (2002) Performativity and primary teacher relations, *Journal of Education Policy*, 17(5), 531–546.

Jeffrey, B. & Troman, G. (2011) The construction of performative identities, *European Educational Research Journal*, 10(4), 484–501.

Keddie, A., Mills, M. & Pendergast, D. (2011) Fabricating an identity in neo-liberal times: Performing schooling as "number one", *Oxford Review of Education*, 37(1), 75–92.

Knights, D. & Clarke, C. A. (2014) It's a bittersweet symphony, this life: Fragile academic selves and insecure identities at work, *Organization Studies*, 35(3), 335–357.

Larner, W. & Le Heron, R. (2005) Neo-liberalizing spaces and subjectivities: Reinventing New Zealand universities, *Organization*, 12(6), 843–862.

Leonard, S. N. & Roberts, P. (2014) Performers and postulates: The role of evolving socio-historical contexts in shaping new teacher professional identities, *Critical Studies in Education*, 55(3), 303–318.

Liew, W. M. (2012) Perform or else: The performative enhancement of teacher professionalism, *Asia Pacific Journal of Education*, 32(3), 285–303.

Lingard, B. & Sellar, S. (2013) "Catalyst data": Perverse systemic effects of audit and accountability in Australian schooling, *Journal of Education Policy*, 28(5), 634–656.

Lynch, K. (2006) Neo-liberalism and marketisation: The implications for higher education, *European Educational Research Journal*, 5(1), 1–17.

Lynch, K. (2010) Carelessness: A hidden doxa of higher education, *Arts and Humanities in Higher Education*, 9(1), 54–67.

Lyotard, J. F. (1984) *The postmodern condition: A report on knowledge* (vol. 10). (Minneapolis, MN, University of Minnesota Press).

Meng, J. C. S. (2009) Saving the teacher's soul: Exorcising the terrors of performativity, *London Review of Education*, 7(2), 159–167.

Mockler, N. (2011) Beyond "what works": Understanding teacher identity as a practical and political tool, *Teachers and Teaching: Theory and Practice*, 17(5), 517–528.

Moore, A. & Clarke, M. (2016) "Cruel optimism": Teacher attachment to professionalism in an era of performativity, *Journal of Education Policy*, 31(5), 666–677.

Morrissey, J. (2015) Regimes of performance: Practices of the normalised self in the neoliberal university, *British Journal of Sociology of Education*, 36(4), 614–634.

O'Leary, M. (2013) Surveillance, performativity and normalised practice: The use and impact of graded lesson observations in Further Education colleges, *Journal of Further and Higher Education*, 37(5), 694–714.

Page, D. (2015) The visibility and invisibility of performance management in schools, *British Educational Research Journal*, 41(6), 1031–1049.

Page, D. (2016) Understanding performance management in schools: A dialectical approach, *International Journal of Educational Management*, 30(2), 166–176.

Page, D. (2017a) Conceptualising the surveillance of teachers, *British Journal of Sociology of Education*, 38(7), 991–1006.

Page, D. (2017b) Conspicuous practice: Self-surveillance and commodification in English education, *International Studies in Sociology of Education*, 27(4), 375–390.

Page, D. (2017c) The surveillance of teachers and the simulation of teaching, *Journal of Education Policy*, 32(1), 1–13.

Perryman, J. (2006) Panoptic performativity and school inspection regimes: Disciplinary mechanisms and life under special measures, *Journal of Education Policy*, 21(2), 147–161.

Perryman, J. (2009) Inspection and the fabrication of professional and performative processes, *Journal of Education Policy*, 24(5), 611–631.

Perryman, J., Ball, S., Maguire, M. & Braun, A. (2011) Life in the pressure cooker – school league tables and English and mathematics teachers' responses to accountability in a results-driven era, *British Journal of Educational Studies*, 59(2), 179–195.

Perryman, J., Maguire, M., Braun, A. & Ball, S. (2017) Surveillance, governmentality and moving the goalposts: The influence of Ofsted on the work of schools in a post-panoptic era, *British Journal of Educational Studies*, 66(2), 145–163.

Piattoeva, N. (2015) Elastic numbers: National examinations data as a technology of government, *Journal of Education Policy*, 30(3), 316–334.

Rose, N. (1999) *Powers of freedom: Reframing political thought* (Cambridge, Cambridge University Press).

Rose, N. & Miller, P. (1992) Political power beyond the state. Problematics of governement, *British Journal of Sociology*, 43(2), 173–205.

Ryan, R. M. & Deci, E. L. (2000) Intrinsic and extrinsic motivations: Classic definitions and new directions, *Contemporary Educational Psychology*, 25(1), 54–67.

Shore, C. (2008) Audit culture and illiberal governance: Universities and the politics of accountability, *Anthropological Theory*, 8(3), 278–298.

Smyth, J. (2006) The politics of reform of teachers' work and the consequences for schools: Some implications for teacher education, *Asia-Pacific Journal of Teacher Education*, 34(3), 301–319.

Tang, S. Y. F. (2011) Teachers' professional identity, educational change and neo-liberal pressures on education in Hong Kong, *Teacher Development*, 15(3), 363–380.

Troman, G. (2008) Primary teacher identity, commitment and career in performative school cultures, *British Educational Research Journal*, 34(5), 619–633.

Warren, S. (2017) Struggling for visibility in higher education: Caught between neoliberalism "out there" and "in here" – an autoethnographic account, *Journal of Education Policy*, 32(2), 127–140.

Wilkins, C. (2015) Education reform in England: Quality and equity in the performative school, *International Journal of Inclusive Education*, 19(11), 1143–1160.

Wilkins, C. & Wood, P. (2009) Initial teacher education in the panopticon, *Journal of Education for Teaching*, 35(3), 283–297.

Wilkins, C., Busher, H., Kakos, M., Mohamed, C. & Smith, J. (2012) Crossing borders: New teachers co-constructing professional identity in performative times, *Professional Development in Education*, 38(1), 65–77.