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Educating for the Future? Mapping the Emerging Lines of Precision Education Governance

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Abstract

Managing the future has become one of the major focuses of global governance in education. In its current mode, education seems unable to answer the needs and interests of the market and future megatrends, such as globalisation and digitalisation. Calls for precision education to introduce the usage of digital platforms, artificial intelligence in education, and knowledge from the behavioural and life sciences are getting a foothold in widening powerful networks of strengthening global governance and EdTech business. By bringing together some of the emerging changes in education governance, in this paper we argue for a new constitution of governance, precision education governance. Precision education governance combines three overlapping and strengthening lines of governance: i) global governance of education, ii) marketisation, privatisation and digitalisation, and iii) behavioural and life sciences as the basis for managing the future education. In the article, we highlight the importance in bringing these so far separately studied lines together to understand how they shape the aims and outcomes of education, knowledge and understanding of human subjectivity more thoroughly than before.

Key words: precision education governance, marketisation, privatisation, digitalisation, datafication, behavioural and life sciences

Introduction

> *In the first decades of the 21st century, many actors and stakeholders have urgently argued that education needs to be transformed in order to meet the demands of rapidly changing technologies, new skill demands in the workplace, and to foster equity, social cohesion and global citizenship. Implicit in these demands and expectations is the aim to realise every individual's potential. Twenty-first century education requires teachers, environments, technologies, educational content and pedagogical practices that can help learners attain that goal.* (Schleicher in Kuhl, Lim, Guerriero, and van Damme, 2019, p. 3)

The Director of the OECD's Directorate of Education, has declared the beginning of a new era for education and learning. Schleicher's forewords to the OECD's report "Developing Minds at the Digital Age" emphasise the outdatedness of 'traditional education', and urges education being brought up to par, so that every individual's full potential can be realised, and where a better version of education—a new science of learning—can fulfil that promise.

The OECD's Directorate of Education is not alone, nor is it the first one to declare that education is in crisis and therefore not delivering what it is supposed to deliver (see Watters, 2015). We are already witnessing a shift from education to learning and from knowledge-based to skill-and-emotion-based behavioural governance (Brunila et al., 2019; Cabanas and Illouz, 2019). This behavioural governance is filled with promises to provide individuals to reach their full economically-driven potential and vitality (Hogan and Thompson, 2020; Nehring et al., 2020). These changes in education would not be possible without the marketisation, privatisation and commercialisation of education alongside the strengthening transnational networks and new powerful partnerships and

agendas influencing and transforming education (Cone and Brøgger, 2020; Hogan and Thompson, 2020; Ideland, 2020; Williamson, 2021a).

We argue that there is an urgent call for a new kind of understanding of all the above mentioned on-going and overlapping changes in education governance. We aim to answer this call with a conceptualisation of *precision education governance* (PEG). PEG is an umbrella concept developed in the pilot project *Interrupting Future Trajectories of Precision Education Governance* (FuturEd) in Nordic, Continental European, Australasian partnership led by professor Kristiina Brunila. This conceptualisation enables scrutinising and analysing ongoing and future changes in education. PEG as an umbrella concept brings together fields of changing education governance in the economically driven ethos that have mostly been studied separately within different paradigms and research traditions (e.g. marketisation and psychologisation in education). In the project, we argue that PEG enables us to shed light on the increasing tensions in education and to new powerful and intensive partnership networks between global, national and local actors, scientific research bodies, for-profit industries, and edu-tech businesses searching for ways to influence and shape education more thoroughly than ever.

In this paper, we elaborate and further develop a conceptualisation of PEG by mapping how it emerges through three distinct 'lines': i) arrangement of education policy in globalised and localised networks including multiple stakeholders and agendas, ii) arrangement of edu-tech business combining digitalisation, datafication, privatisation and marketisation of education and iii) arrangement of behavioural and life sciences. Even though at first glance these three lines of precision education governance might look different in both scope and context, they share similar rationalities and aims, produce similar ideal subjectivities, and construct similar norms about the preferred and

hoped future of education.

In the following section, we start by drawing three overlapping and emerging lines of changing education governance based on previous research related to sociological research on education governance: i) globalisation of education assemblages, ii) digitalisation, marketisation and privatisation of education assemblages, and iii) emergence of behavioural and life sciences in education assemblages. After that we explore the emergence of precision education and finally by bringing all these overlapping changes together we conceptualise them as a form of precision education governance. Finally, we explore some of its implications to the future of education, and the subjectivities and rationalities.

Drawing the Line(s) of Changing Education Governance towards Precision Education Governance

The emergence of global, national and local education assemblages

The changing education governance takes place through assemblages formed by global and local actors and their interests and agendas. As previous research has shown, intergovernmental Organisations (IGO), such as the Organisation of Economic Cooperation and Development (OECD), United Nations (UN), World Bank, International Labour Organisation (ILO) and the European Union (EU) practice so called 'soft governing' or 'soft policy-making', that skips over the parliamentary decision-making traditionally attached to politics (Alexiadou et al., 2010; Cone and Brøgger, 2020). They do this by defining norms standards, and rules, and thus they hold major power in providing information, ideas, and legitimacy for certain actions (Fergusson and Yeates, 2014: 440). Although the IGOs do not have 'direct' power over nation states, the influence of international assessments, benchmarking and best

practices in education shows even in a nation-state's policy making (Rautalin et al., 2019).

For example, the OECD is becoming an increasingly influential 'node' in global education governance assemblages. Consequently, it claims to have a powerful ability to translate and disseminate concepts such as wellbeing, teaching, education, and citizenship into measurable and calculatable indicators (Sellar and Lingard, 2013; Williamson and Piattoeva, 2019). Similar governing mechanisms can be found in the EU's governance of education—most of the EU's education policy relies on recommendations and dissemination of 'best practices' (Brunila et al. 2020; Mertanen, Pashby, and Brunila 2020; Mertanen et al., *forthcoming*; Cone and Brøgger 2020). However, this 'soft' regulation is not 'overriding' or negating education's regulation as sovereign nation-states responsibility.

The governance in these global assemblages work through legitimising certain ideas as 'rational', and others as 'unrealistic' or 'impossible' (see Ball and Junemann, 2012). When taking a closer look for the knowledge deemed as 'policy-relevant' for education policy in the organisations like the OECD and the EU, the germane discourses circulated in the global and local networks relate to 'knowledge-based economy', 'future investment', and 'evidence-based policy-making'(Rinne et al., 2004; Sellar and Lingard, 2013). These self-evident 'truths' have a surprisingly large impact on local policy-making, local future visions for education, and for the local governance of education (see also Martens and Wolf, 2009; Rinne et al., 2004; Williamson and Piattoeva, 2019).

Digital platforms, EdTech and new markets in education assemblages

The second central line of changing education governance is the shift towards arranging education not only in traditional classroom-settings, but also on various digital platforms, both online and offline. Privatisation, marketisation, digitalisation and datafication of education impose fundamental changes upon the ways we understand what it means to educate, to know, or to be a teacher or a student.

In education, these shifts are visible in the ways in which both the EU and the OECD are continuing to call for the promotion of more individualised and 'precise' education (European Commission, 2021; OECD, 2019). In the EU, measures for promoting education for young people from various backgrounds, such as the Youth Employment Initiative, specifies personalised guidance, education and counselling as a prerequisite for funding (Brunila et al., 2018; COM, 2016; Mertanen, 2020). Also, the EU has promoted the development and usage of digital platforms assessing and comparing the quality of education, and delivering it into easily-read graphs and visualisations to raise the overall status and comparability of education in global markets (Decuypere and Landri, 2021).

These highly personalised and individualised forms of education can be presented as autonomous, fair, equal and rational. Accordingly, education in these platforms is declared as autonomous and evidence-based, flexible, and able to cater every need. However, by presenting education by and through technology as autonomous and disconnected from human agency, the ideological and political norms are concealed. As with all human conduct, there is a strong moral and political imperative with technology, AI, and their relation to education. 'Personalised' education fostered through AI and machine learning de-personalises students and teachers, since it only works through disconnecting learned 'knowledge' from their culture, circumstances, and

communities (Houlden and Veletsianos, 2020; Ideland et al., 2020). Rather than being neutral platforms for learning new information, adaptive or personalised learning works as a way to collect behavioural and personal data from students later to be sold to advertisers (Houlden and Veletsianos, 2020; Saltman, 2020).

Not surprisingly, the digitalisation of education opens up new ways for privatisation and marketisation of education by introducing fresh and untouched markets to private EdTech companies (Ideland et al., 2020; Player-Koro et al., 2018; Williamson et al., 2020). When private corporations enter 'the pedagogy markets', they tend to cultivate citizenship and human subject preferable towards their interests - to become efficient employees and consuming citizens (Saltman, 2020). Consequently, this line of changing governance is inherently linked and connected to the privatisation, marketisation and commercialisation of education (see Ideland, 2020). In addition to its appeal to calls for ‘evidence based’ education, digitalised education opens up highly profitable new markets for not only education providers, but also to technology, artificial intelligence (AI), virtual reality (VR), and data management companies (Houlden and Veletsianos, 2020; Valkonen et al., n.d.; Williamson, 2019). According to some estimates, the EdTech industry is one of the most rapidly growing industries across the globe with promises of great profits (Global EdTech market to reach $404B by 2025 - 16.3% CAGR. – HolonIQ, 2020; Williamson et al., 2020).

By declaring digital platforms in the context of education as impartial, neutral and value-free, and thus referring to policies based upon data collected through platforms as 'evidence-based' or 'rational', it is possible to silence alternative models, and present one set of instrumentalised values and self-evidence. One of these silences relate to the worry of how big tech companies are eagerly offering platforms for education (either overtly or covertly through philanthro-capitalistic foundations). Tech companies such as

Google, Microsoft and Facebook are not only offering precise tools to enhance education and learning, but are also mining their users' personal information to further sell to advertisers, and by utilising big data and algorithms both to guide and predict people's behaviour with the help of the behavioural and life sciences (see eg. O'Neil, 2017; Zuboff, 2019).

The emergence of behavioural and life sciences in education assemblages

Changing education governance's central promise is enabling education to become more calculable, predictable, efficient, and individualised than before. The promise of behavioural and life sciences is that they enable recognition of the central role of behavioural, psychic, emotional, neurological, and affective responses such as learning or behaviour difficulties to be overcome. This way the behavioural and life sciences take part in governing through aspects of behaviour that have previously been seen as insignificant, hard to reach or unknowable (Whitehead et al 2018; Brunila, forthcoming).

The powerful and far-reaching shift from teaching and education to learning refers to the processes in which education becomes decontextualised and detached commodity, and where teachers become service providers, students become customers, and learning is a product that can be sold and bought (Knox et al., 2020: 22–23). This shift also makes it possible to regard education as an objective, measurable, quantified and behavioural product, in which learning is regarded as an outcome of carefully and meticulously designed environmental inputs and 'nudges' in the 'right' direction (Knox et al., 2020; Whitehead et al., 2018). Earlier research has also shown how this new 'science of learning' relies mainly on measurable psycho- and biometrical data and individualised, tech-assisted learning paths (see Kuhl et al., 2019). This 'new science of

learning' can be seen as a condensed and politicised form of neuroscience, genetics, psy-knowlegde and behaviourism (Williamson, 2019).

Another example of governance is the increasing role of neurosciences as a part of emerging life sciences in education. The previously mentioned "new science of learning" is based on the idea about learning as neutral, transferrable processing of information that happens in the brain (De Vos, 2015; Kuhl et al., 2019; Rose, 2014). The modulations of learning, like recording electrical activity in the brain during a learning process, is seen to provide insight information about the cognitive processes and mental stages that occur during learning (Huang et al., 2020). In this sense, the new science of learning translates learning into measurable processes that make measurable changes in an individual's brain while turning education into measurements and comparisons as best practices between different techniques (Whitehead et al., 2018; Williamson and Piattoeva, 2019).

Recently, the measurable efficiency does not only concentrate on the learning process itself, but also on different emotional, behavioural and psychological factors that are assumed to have an effect on learning processes and thus contribute to certain outcomes in behaviour and learning (Brunila, 2020; Ecclestone, 2017; Whitehead et al., 2018). Concepts, such as social and emotional learning (SEL), provide scientific evidence on how different personality traits based on ideological underpinnings, are rapidly expanding across contemporary education policies and practices all over the world. SEL consists of a 'psycho-economic' combination of psychometrics with economic analysis aiming to collect statistical data about the individual actor: feelings, personality traits, mindset, and other psycho-emotional behaviour-determinants that are expected to contribute economic growth (Williamson, 2021b).

For example, the OECD Study on Social and Emotional Skills, a large-scale computer-assessment, makes students' emotions and personality the focus of policy intervention and 'human capital' formation. The core focus of the study is to trace individual personality factors that contribute better socio-economic outcomes (Kankaraš, 2017). SEL is one powerful example of how emotions, well-being and behaviour of learning subjects are translated into 'objective and measurable' formation, and how measurement of humans' psychological attributes is seen as integral to economic forecasting and political management of populations (Davies, 2018; Williamson, 2021b).

Future-Proofing Education - The emergence of precision education governance

> *The future is omnipresent in the praxis and theory of school education: it is articulated as both an open future, in terms of the potential of people and societies to develop, but also as a closing and conditional future; something that is expected to happen as a consequence of our present actions. In this way, representations of the future may partially function as self-realizing fictions, as they enact futures that are predicted.* (Säntti et al., 2021: 1)

Although future rhetoric is ubiquitous in every branch of policy, in education policy the future holds a special place, as Säntti, Hansen and Saari (2021) illustrate in their research about future visions in education policies in the quote above. The duality concerning the future in education is palpable – although in theory surprises and contingencies are possible, the governance of education is striving to limit uncertainties.

The "future(s)" of education is closely attached to the lines of education governance. The global sustainability, changing labour markets, and the rise of automatisation and digitalisation are taking the central stage in future visions for education (Macgilchrist et

al., 2020; Saari, 2021; Watters, 2015). In common with future predictions is a vision, that to manage the uncertain future, the future must become known, measured and controlled. In this way, future strategies and predictions become the 'self-realising fictions' shaping the governance of the future of education. In the next sections, we will explore how the 'lines' of changing governance of education can be understood in relation to future predictions and hopes for education: precision education. We will then draw all abovementioned lines of thought together in our formulation of the concept of precision education governance.

The rise of precision education

The three 'lines' of changing education governance—global governance of education; privatisation, marketisation, and digitalisation of education, and behavioural and life sciences in education—are in our interpretation parts of so-called 'future-proofing' education in response to predicted future(s). The management of the future calls for education that realises every individual's potential in the changing world. The future-making of education promising this realisation of individuals' potential can be characterised as *precision education* (Hart, 2016; Kuhl et al., 2019). Precision education is a rapidly emerging form of education, one in which education equals more efficient individually tailored and personalised behavioural management, optimisation, teaching and learning (Brunila et al., 2020; Saari, 2021; Saltman, 2020; Williamson, 2019). By promising evidence-based, scientific, tailored, and individualised learning, precision education can be seen as a universal solution to the perceived detriments and problems of 'traditional' schooling and education (Ideland et al., 2020; Williamson, 2019).

Precision education takes its inspiration from the key principles for precision medicine, in which the ambition is to find individualised treatment for illnesses tailored for

patients' behavioural, emotional, neurological, biological and genetic fabric (Hart, 2016). Thus, precision education can be defined by modifying the definition of precision medicine by Ferryman and Pitcan (in Williamson, 2019: 6) as an effort to collect, integrate, and analyse multiple sources of genetic and nongenetic data, harnessing methods of big data analysis and machine learning, to develop insights about education, teaching and learning that are tailored to the individual. Precision education thus answers calls for measurable and evidence-based education from IGOs such as the OECD, UNESCO, the ILO, the World Bank and the EU (see Dahler-Larsen, 2017; Lingard, 2013).

A good example of enabling and supporting precision education is the alliance of globally growing EdTech industry and behavioural and life sciences (Saltman, 2020; Williamson, 2020). Policies and practices derived from behavioural and life sciences have helped to legitimise scientific, behavioural, psychological, neurological and personalised management of children, young people and adults (see Brunila, 2020; De Vos, 2015; Ecclestone and Brunila, 2015; Lanas and Brunila, 2019). Knowledge formations based on the behavioural and life sciences provide the power to engineer individual traits, strengths, and vulnerabilities scientifically from birth, which is inherently congruent with the promise of hyper-individualisation promised by precision education (eg. Gillies et al., 2017; Plomin, 2019).

From precision education to precision education governance

The three lines combined with precision education form a starting point from which we are developing our conceptualisation of precision education governance (PEG). We suggest, that these changes are not only a way of arranging education and individual behaviour, nor simply a way to 'future-proof' education. Rather, we see that the rise of precision education is connected to the lines of changing education governance. We see

PEG as a new way for conceptualising *both* the ongoing changes in education governance, and the future predictions, aspirations and hopes for education promoted by actors in global and local level. As a form of governance, PEG refers simultaneously to the arrangement of governing in education policy and policy enactments, and to the rationalities, discourses and values circulating within these arrangements. Hence, PEG encapsulates the emerging dynamics between policy, practices, knowledge, agency, and citizenship defining and exploring the options for the management in education (see also Brunila et al., 2018: 117–118).

PEG operates and articulates in global and local situations and this calls for understanding of assemblages defining new material, collective and discursive encounters and relationships (eg. Ong and Collier, 2008). Consisting of global, national and local network of educational institutions, governing bodies, private and public stakeholders, edu-tech-bio-companies, NGOs, programmes, initiatives, and projects, PEG both shapes and enables education assemblages (on assemblages see Baker and McGuirk, 2017; McGimpsey, 2018; Savage, 2020; Youdell and McGimpsey, 2015).

The changes in both policy and knowledge production in education governance are connected to the careful and meticulous disseminating of behavioural and personalised governance throughout these international, national and local assemblages (see Savage, 2020; Toiviainen and Brunila, 2021; Williamson, 2016). For example, in our two on-going research projects' results we have shown how the knowledge concerning young people's education is circulated through various organisations and IGO's, and how that knowledge becomes self-evident 'truths' in both national policy-making and every day practises in youth education, counselling and guidance (Brunila et al., 2018; Mertanen et al., forthcoming; Mertanen, Mäkelä, et al., 2020; Mertanen, Pashby, et al., 2020).

This knowledge and 'best practises' for youth education are circulated within these global assemblages, and they mainly derive from the fields of behavioural and life sciences. Knowledge especially from psychology and psychiatry has become the common denominator in education targeting young people, where the stress is on individualised guidance, promoting good self-esteem and nurturing a healthy and happy mindset (Brunila, 2020; Brunila et al., 2021; Mäkelä et al., 2021). Also, the prevalence and calls for precise recognition of individual young people is evident in both policies and practices of youth education (Mertanen, 2020; Mertanen, Pashby, et al., 2020). In addition to policy-actors, various private and third sector organisations are entering the 'markets' for youth education in Finland by building various automated systems to detect young people in need for education, provide services for youth education, and evaluate the effectiveness of education (Andersson et al., 2019). These developments are not unique to Finland, but they follow larger global trends where young people's education is becoming more individualised, privatised, behaviourised, and datafied that ever (Bloomfield et al., 2020; De St Croix et al., 2019; Prieur et al., 2019; Youdell and McGimpsey, 2015).

As illustrated in our previous results concerning youth education, the promise in PEG is an enhancement of the efficiency of education through individualisation and 'precision' through which it becomes possible to assess, control and calculate individuals' learning, and thus shape human subjectivity as its outcome (Brunila et al., 2018; Williamson, 2019). PEG promises a seemingly neutral framework and tools for comparing and analysing the effectiveness of education, in which issues surrounding the various contexts can be resolved through developing better measurement tools and standardisations. In other words, PEG promotes a very particular understanding of policy-relevant and evidence-based knowledge, in which knowledge produced in

randomised controlled trials is deemed as scientific, and other forms of knowledge are deemed as either subjective or too contextual.

Thus, power in PEG is formed in the interactions between the parts of the assembled arrangements, in which some discourses as constitutive and normative forms of language (see Bacchi and Bonham, 2014) gain the position of being 'right' and 'sensible', and some as 'impossible' or 'unrealistic'. The aim of mapping the 'lines' of policy assemblage is to show not only prevalent discourses and/or power relations, but also to look at voids and discontinuities. In other words, following the 'lines' that run through assemblages enables us to see the processes de- and reassembling the assemblage without reducing the assemblage to a simple list of its parts (see also Youdell and McGimpsey, 2015)

Summary: subjectivities, rationalities, and norms in precision education governance

In this paper, we have introduced new ambitious conceptual work for changing education governance as precision education governance. We have done it to grasp more thoroughly what is going on and by bringing three central lines of changing governance and some of their outcomes together. We understand PEG as a wide umbrella concept, which enables looking multiple lines of changing education governance together. Although the wide scope of the concept poses a danger of stretching it ‘too thin’ and thus losing its explanatory qualities, we recognise the need for a conceptualisation that enables scrutinising the ongoing changes together.

Managing the future of education calls for ‘objective’ and ‘evidence-based’ knowledge in policy-making. This development is part of a wider phenomenon of combining the ideals of ‘evidence-based’ policy making to ‘future-proof’ complex societal institution,

such as education as we have shown in this paper. The requirement for objectivity in scientific policy-making requires as Williamson and Piattoneva (2019) illustrate, continuous maintenance, choices, standardisation and quantification of complex phenomenon to become 'objective'. The similar dynamic, as we showed earlier, is in the way in which objective' and 'evidence-based' policy rests on the perception that each individual acts in a way that can be tracked, calculated and predicted through using statistics and mathematical models (see also Davies, 2018).

Upon these premises we argue, that to manage the future, one of the main goals of PEG becomes managing future workforce and future populations (see also Knox et al., 2020; Teräs et al., 2020). For this type of future-proofing education to be justified, or to even make sense, very particular infrastructure of data analysis, algorithms and artificial intelligence (AI) must be in place. This emerging education infrastructure functions according to the data imaginary of being agile, flexible, and fast, and at the same time, gives a framework for understanding and legitimising data analysis as evidence-based 'knowledge production' about education (see Beer, 2018; Williamson et al., 2020). Consequently, on the digital platforms, education is focusing more and more on the individual, and teaching on facilitating learning or even completely disappearing

Thus, in common with all the lines of precision education governance are the shared ideals about ideal learning subjectivity void of cultural and societal connections, more efficiently shaped, optimised and individualised, in the name of freedom to choose between individualised and tailored learning options. In addition, the lines of PEG strive towards reducing the evident uncertainties in the future. In the global education assemblages, as we showed earlier, structures both shaping and enabling education work as networks forming stronger alliances. Ideal learning subjects shaped in these networks are future-oriented citizens in the making, with self-responsibility of the future

of nation states, labour markets and future economy. Also, they are the targets of several policy initiatives that need to be moulded towards future citizenship (see Mertanen, 2020)

The promise of individualised personalised learning offered by PEG is not too far from the hyper-individualised, and future-oriented ideal subject produced in global education assemblages. An argument can be made that despite the promises, personalised learning is not *personal,* but rather it is based on pre-set exercises allocated to students based on their presumed history, grades and so on. For personalised learning to become marketable (and thus profitable), it requires standardisation of learning, and it turns the promised student-centred approach into a platform-centred learning. On digital learning platforms, knowledge and schooling are detached from the political realm and presented as 'neutral' and 'objective' (see Kohn, 2015). The efforts to predict and measure every aspect of education as ‘learning’ is presented as a win-win situation for everyone—individual learners gain skills and employability, nation-states and IGOs gain more and more detailed information about their populations, and private businesses gain data and access to develop and increase their market shares and profits even more.

The ideal learning subject becomes a sum of measurable values, which can be calculated, enhanced, predicted, and manipulated. This control of the future-proof subject in education results from knowledge produced on digital platforms, combined with data from behavioural and life sciences focusing on an individual's behaviour. This brings knowledge from fields such as neurology, psychiatry, behavioural modification, and genetics to the centre of PEG (see Brunila et al., 2020; Cabanas and Illouz, 2019; see McGimpsey, 2018). In the governance based on psychodata, the ideal learning subjectivity is not merely an economically constructed, rational, and self-serving independent actor. Rather, human subjectivity becomes a malleable actor with sub-

conscious and automated behaviours and affects, which can be 'nudged' and 'improved' (see Williamson 2021b, psychodata).

Based on this rationalisation, the purpose of education becomes to release its targets from emotional and behavioural burdens and guide the means for how the life and the self should be actualised and obtained in order to optimise the potentials of life (see Brunila, 2013). Moreover, education can be dressed up as neutral and objective techniques that are supposed to enable the psychological growth towards the ideal set of existence, which can be summarised as flexible and resilient self-governing subjectivity.

In relation to PEG, global education assemblages welcome this new suitably vulnerable and malleable subjectivity through the rationality of early intervention and social investment (see Gillies et al., 2017; McGimpsey, 2017). The value and purpose of education is not in the making of democratic citizens per se, but in the future profits and in terms of human capital. Thus, education is seen as an investment in both future markets and society, with promises of returns of investment and profit (see De St Croix et al., 2019; McGimpsey, 2017, 2018)

The human subject produced in the digitalisation, privatisation, marketisation and behaviourism of education shows how the ‘precision’ in PEG is introduced. When looking at the ways in which education is seen as a lucrative business opportunity for big tech companies and EdTech businesses, it is obvious that both students and teachers are seen as a resource, and the information collected on them is at the centre of the focus. Education is not only a new, promising market segment, but with a sleight of hand dressed in philanthropy, it also become the source of data as raw material and governable future clients and customers.

Meanwhile, the depolitisation and decontextualisation of education and reformulating

education as an investment with the promise of future returns, turns the subject produced in education into a future potential. In PEG, public realm, political debate and democratic citizenship are not seen as a part of everyday life—but participation in labour markets, self-enhancement and 'becoming the best possible self' through education and training is.

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