From Didactics to Datafication: A Critical Reflection on Virtual Learning Environments and the Production of Space

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Abstract

When writing about transformation in higher education (HE) in South Africa, it is quite popular to mention the fall of apartheid, and perhaps also 1994, as a starting point for significant change. I, myself, have made this mistake (see Bernard, 2015). However, the recent #FeesMustFall protests highlighted that many approaches to transformation have been superficial at best, and extremely problematic at worst (Luckett & Naicker, 2019; Luckett, 2019). This is because they have done little to acknowledge the legacies that colonial modes of thinking have had, and continue to have, on the everyday lived experiences of students in spaces that still feel alienating to them. In April 2020, when the doors of South African universities closed to all, and during a swift and mass migration away from university campuses to Virtual Learning Environments (VLEs), I was presented with the opportunity to critically reflect on the impact that increased use of VLEs can have on the transformation agenda in the HE sector. My approach takes up Tumubweinee and Luescher's (2019, p. 2) argument that many initiatives aimed at transformation in HE have failed, because they do not pay sufficient attention to the where of transformation. Thus, like Tumubweinee and Luescher, I locate my reflection on VLEs in the postmodern, sociopolitical understandings of 'space' evident in the work of Lefebvre (1991), but more specifically his notions of conceived and abstract space. In doing so, issues of identity and coloniality are brought to the fore. My approach is critical in that it "implies possibilities, and possibilities as yet unfulfilled" (Lefebvre, 2002, pp. 18-19).

Keywords

datafication; higher education; postcolonialism; space; Virtual Learning Environments

Introduction: Extended Degree Programmes as Peripheral, Colonial Spaces

I am a white, female academic who has worked in an Extended Curriculum Programme (ECP) for a little over a decade. My reflections here relate, in part, to the work I do with students on this programme, students who, in line with government policies, are not only identified according to race and socio-economic categories, but who are also frequently described in contrast to "the mainstream" (i.e. "the norm") and through deficit discourses and in deficit terms such as "disadvantaged", "underprepared", "needy" or "in need of

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support". Since my reflections also relate to VLEs and eLearning, it is also important to mention here that, given the selection criteria for many ECP programmes across the country (which include attention to socio-economic status factors), it is likely that many students on ECPs would typically not be considered digital natives, and would have experienced the data – and digital – divide before and during the pandemic. I return to this point in the following section.

ECPs, which exist in some form in 24 universities across South Africa, are considered to be a type of intervention that aims to increase access and success rates to the category of student outlined above. This is often done by *segregating* these students in different ways, and *extending* the time of enrolment, typically by an additional academic year, in order to include additional support modules. These support modules aim to *develop* numeracy, literacy and other skills in order to make the discourses of the disciplines more explicit – thus to grant 'epistemological access' to disciplinary knowledge. However, in a powerful contribution towards understanding ECPs and the impact they have on the experiences of students, Luckett (2019) offered a postcolonial critique of these programmes. This means that, rather than adopting the normalised developmental and modernist paradigm which portray ECPs "as a liberal anti-apartheid project motivated by a concern for equity and social justice" Luckett (2019, p. 41) reframes them "as a modernising project within a developmentalist paradigm". Through this lens, ECPs can be likened to the type of education endeavour offered by the colonial powers which sought to civilise "the natives" in order to make them fit for modernity (Luckett, 2019, p. 41). In offering this critique, Luckett urges us to question whether separate remedial programmes such as ECPs are tenable, given that, in their current form, students "speak from subject positions that still feel colonized" (Luckett, 2019, p. 38) when it is "particularly urgent that black students feel 'at home' in their universities, they must have their sense of agency restored and come to recognise themselves as sources of meaning-making" (Luckett, 2019, p. 54).

The motif of 'home', the metaphor of 'the university as home' and it's relation to 'space', the embodiment of space, and the impact that 'space' has on the identities of students at South African universities is an important topic, one that has been taken up by many scholars in various forms (see Bangeni & Kapp, 2005). Tumubweinee and Luescher (2019), for example, analysed the ways in which 'space' is discursively constructed in South African policy documents, arguing that many initiatives aimed at transformation in HE have failed because they do not pay sufficient attention to the *where* of transformation. During their analysis the authors found that 'space' "is almost consistently conceived only as an *object* in transformation" rather than "a socio-political *actor* in transformation" (Tumubweinee & Luescher, 2019, p. 10). This is an important distinction because:

> We interact in this space and our interactions are limited or encouraged by this space. The way space is perceived, conceived and eventually experienced has a profound impact on students' experience of higher education.
>
> (Tumubweinee & Luescher, 2019, p. 10)

Such an agentive understanding of space developed within a postmodern paradigm and with thinkers such as Lefebvre who wanted to understand the role of representation and power in the production of space. Tumubweinee and Luescher (2019)'s emphasis on space as *perceived*, *conceived* and experienced or *lived* in the quote above is a triad at the heart of Lefebvre's understanding of space, who was primarily concerned with how space is produced, the way in which space is abstractly conceived and the phenomenological spaces of lived experience (Wilson, 2013, p. 367). It is also important to note that Lefebvre's understanding of space developed as a reaction against capitalism and the technological tools of capitalism. In fact, Lefebvre argued that capitalism is not just about the production of things in space but, perhaps even more importantly, capitalism is about the production of space (Prey, 2015, p. 1). The relevance of this understanding of space to the internet (as cyber*space*) is discussed below.

E-Learning, Learning Analytics, VLEs and Datafication

Since the development and increased use of the internet, the realm of cyberspace has not been excluded from the type of postmodern understandings of 'space' highlighted above (see, for example, Cohen, 2007). Most postmodern thinkers view cyberspace as an extension of everyday social practice rather than separate from it, since it is also experienced spatially, mediated by embodied human cognition and mediated through language and metaphors that reflect this embodied experience (i.e. "*home*page", "web*site*", "back", "forward"). In this regard the emergence of the internet can be conceptualised as the contemporary, "virtual", manifestation of the "explosion of spaces" which Lefebvre saw as capitalism's most transformative feature (Prey, 2015, p. 2).

As with many social institutions across the globe, corporate or otherwise, HE institutions have expanded into cyberspace for a variety of reasons − as a natural social progression in a digital society, for one, but also as an effort to participate in the Fourth Industrial Revolution, to create "smart campuses" and facilitate in the formation of "smart students" (Prinsloo, 2020). As a result, many social practices located in cyberspace are now part of university life. For example, electronic learning or "eLearning", which refers to the delivery of education and training through digital resources such as VLEs, as well as the practice of tracking students and/or collecting, measuring and analysing electronic educational data (known as "Learning analytics [LA]") for the purposes of understanding and potentially optimising eLearning. Today, Modular Object-Oriented Dynamic Learning Environment (Moodle) is "the world's most popular" VLE (https://moodle.org/). There are 168 000 Moodle sites that are currently active, in 243 countries, with South Africa accounting for 1 692 of those sites − many belonging to HE institutions (https://stats.moodle.org/sites/index.php?country=ZA). There is no doubt that VLEs like Moodle are transforming how education is being distributed and consumed.

Much of the literature on Moodle focuses on its value a VLE and an LA tool. As a VLE, Moodle has been conceptualised according to a social constructivist view of education, and "facilitates a mix of learning approaches, integrating readings, lecture videos, online reflections, quizzes and group discussion forums, utilising both asynchronous and real-

time interaction" (Spiegel et al., 2017, pp. 277-278). When considering its value as a VLE, Mpungose (2020, p. 102) claims that Moodle facilitates the decolonisation of the university curriculum because of functions that enable facilitators to "encourage the changing of mind-set and sharing of lived experiences during the teaching and learning process". As an LA tool, Moodle is applauded because it gathers a variety of data: personal data, usage data (time spent, number of downloads, login frequency, log reports and number of views), learning data (participation for a particular activity, for example, grades, comments and feedback), allowing facilitators, researchers and other decision-makers to seek out the variables that contribute most to student learning in order to make predictions and improve performance (Mwalumbwe & Mtebe, 2017). This literature mostly resonates with the grander utopian, and "mythological" (Boyd & Crawford, 2012, p. 667) story that digital data, especially mass amounts of divergent digital data produced at an incredible speed (i.e. "Big Data") offers the potential of new knowledge, insights and higher forms of intelligence that can be used to address various societal ills. This utopian story is also rooted in the idea that quantitative data is objective and the mathematical and statistical models used to analyse this data are more efficient, reliable, accurate and effective (Boyd & Crawford, 2012, pp. 663-664), an ideology which van Dijck (2014, p. 198) refers to as "dataism". It is also proclaimed that digital data, particularly Big Data, leads to greater transparency by linking disparate sources of information, and that it can democratise decision-making by rendering "social processes and social relations more knowable and more controllable" (Selwyn, 2015, p. 66). One recent example is offered by Renick (2020), who reports on a project at Georgia State University to address "achievement gaps" (Renick, 2020, p. 119) at the University, where "graduation rates were 22% for Latinos, 29% for African Americans, and 18% for African American males. Low-income students completed degrees at only a 24% rate". The author presents a utopian narrative of the "high tech" processes used to track, monitor and contact students frequently ("high touch"): "Today, *thanks* [emphasis added] to a campus-wide commitment to student success and more than a dozen data-based programmes implemented over the past several years, Georgia State's achievement gaps are gone" (Renick, 2020, p. 119).

However, not all scholars are as optimistic as Renick (2020) about the impact of technology, digital data and student tracking on the student experience. Boyd and Crawford (2012, p. 667) emphasise that, far from being objective, "working with Big Data is still a subjective, interpretative act". In focusing on technology and data, Renick (2020) seems to have overlooked important criticisms that have been directed towards the conceptual metaphor of "achievement gaps" and its links to a deficit discourse of individuals and communities – the same deficit discourse used to describe students on ECPs. This discourse is problematic because it masks the social and institutional histories and prejudices that led to and sustains these "gaps". The research thus perpetuates the idea that "closing an 'achievement gap', and equalising or levelling the school system, will lead to greater equality across society (Macgilchrist, 2019, p. 80). This means that, while Georgia State University could be commended for moving away from highly selective admissions processes to improve retention rates, critical questions need to be asked about their "commitment to the systematic use of data" that has been segmented according to "racial, ethnic, and economic

groups". Questions should be asked about whether universities should "become far more proactive in tracking students *daily* [emphasis added]" to identify "when they go off path" (Renick, 2020, pp. 119-120). Which implies, of course, that there is only one path to follow.

VLEs like Moodle have not been analysed in terms of their ability to *produce* space, and the impact that this process can have on the transformation agenda within HE institutions across the globe. This is an important focus area because, to return to Tumubweinee and Luescher's (2019, p. 10) quote "the way space is perceived, conceived and eventually experienced has a profound impact on students' experience of higher education". To consider VLEs as producers of space is to consider how stakeholders involved in producing VLE platforms abstractly conceive of space, why they do so, and how these *conceived* spaces have, or could have, an impact on *lived* experiences (Wilson, 2013, p. 367). In keeping in line with the ideological underpinnings of Lefebvre's work, to consider VLEs as a *producer of space* is to also consider their role within *material* or *social space*, which was in Lefebvre's time – and is increasingly so – dominated by the capitalist logic of accumulation. Zuboff (2015, p. 77) defines this logic as:

> …the taken-for-granted context of any business model. It defines objectives, successes, failures and problems. It determines what is measured, what is passed over; how resources and people are allocated and organized; who is valued in what roles; what activities are undertaken – and to what purpose. The logic of accumulation produces its own social relations and with that its conceptions and use of authority and power.

In contrast to *social space*, Lefebvre (1991, p. 38) conceptualised *conceived space* as "the space of scientists, planners, urbanists, technocratic subdividers and social engineers". In the digital age, *conceived space* is the space of a select group of new specialists: coders, programmers and engineers, data brokers, and in the context of higher education, "online platform/programme providers, as well as individual, institutional and organizational researchers" (Prinsloo, 2020, p. 368). *Conceived space* for Lefebvre was also *abstract space*, since it is "the location and source of abstractions". *Abstract space* is a result of capitalist social relations, of technocratic rationality, where diversity and richness of social life is reduced to homogeneity, to divisibility and interchangeability through the emphasis on *quantification* and Cartesian notions of time and space as "homogenous, continuous and emptied of all natural and social content" (Wilson, 2013, p. 368).

Lefebvre's understandings of *conceived* and *abstract space* offers interesting insights into VLEs as tools that are contributing to the datafication of HE, to a process "by which objects, behaviors, actions, motions, communications and spaces are converted into machine-readable data flows" (Smith, 2016, p. 114). During this process, individuals are turned into data representations, which have also been termed "dividuals" (Deleuze, 1995) or "data doubles", representations which are quite different from the "fleshy bodies" from which the representations developed (Lupton, 2014, p. 82) but are nevertheless analysed, classified, evaluated ("surveilled") and targeted for different reasons. These mechanisms of extraction, analysis, and ultimately also control, are often illegible to, or hidden from, the sources of the data, thus effectively exiling people from their own behaviour (Zuboff, 2015, p. 75).

Thus, *conceived* and *abstract space* is also the realm of alienation, it is the realm of "human action stripped of their living substance' (Trebitsch in Wilson, 2013, p. 366). In understanding *abstract space* as the spatial dimension of representation, of quantification and alienation, it is easy to understand why scholars have understood Big Data and datafication as "data colonialism" (Beer 2019, Prinsloo 2020), as an "extension of a global process of extraction that started under colonialism and continues through industrial capitalism" (Couldry and Mejias in Prinsloo 2020, p. 367). Only now, instead of raw material and labour, what is being appropriated is a new type of raw material produced by technological tools through our day-to-day social practices, often in ways that is beyond the control of the person to whom the data relates and in ways that remain unknown to them (Couldry and Mejias in Prinsloo 2020, p. 367). The point is that the underlying algorithms, the ways in which data are produced and used and the role of software companies and educational technology providers, amongst other things, are hardly understood, and very little is understood about the ethical implications of these tools (Boyd & Crawford, 2012, p. 673, Jarke & Breiter, 2019, p. 1, Selwyn, 2015, pp. 566-567, Jones & McCoy, 2019, pp. 58-59).

Conclusion

The #FeesMustFall protests and associated movements urged us to recognise that many approaches to transformation, including the formation of ECPs, have done little to acknowledge the legacies that colonial modes of thinking have had, and continue to have, on the everyday lived experiences of students in spaces that still feel alienating to them. Similarly, Luckett's (2019) postcolonial critique of ECPs highlights that, despite best efforts aimed at diversity and inclusivity, these programmes not only segregate students into separate, remedial spaces, but result in the discursive construction of ECP students in a way that is in opposition to "the norm" (or "the mainstream") and through deficit discourses and in deficit terms such as "disadvantaged" or "underprepared". When viewed through a postcolonial lens, ECPs can also be likened to the type of education endeavour offered by the colonial powers who sought to civilise "the natives" in order to make them fit for modernity (Luckett, 2019, p. 41).

When the Covid pandemic prompted a swift and mass migration to VLEs such a Moodle, I was presented with the opportunity to critically reflect on the impact that increased use of VLEs could have on the decolonisation agenda in HE and on ECP students in particular. I located my reflection within postmodern understandings of space (Lefebvre, 1991) and did not contemplate the problems that arise when students do not have access to technology or the internet but rather focused on the trail of data that each student leaves behind when using VLEs, whether they know that this data is being collected, whether they know what data is being collected, how it is being collected and analysed, by whom, and to what ends. Outside of HE, many critical theorists have urged us to consider similar processes as a form of surveillance by those with agency and power, as "Big Brother" or "Big Other" (Zuboff, 2015, p. 77), an Orwellian nightmare. Comparisons have also been made to Franz Kafka's *The Trial* in which the protagonist, Josef K., wakes up to a world of "bureaucratic indifference, arbitrary errors, and dehumanisation, a world where people feel powerless and vulnerable, without any form of participation in the collection and use of

their information" (Solove 2001, p. 1398). One can imagine a similar scenario in HE if the nature of the data, the manner in which it is collected, collated, analysed and used remains illegible to, or hidden from students, the sources of the data, at the same time at which the data impacts on their lived experience in significant ways.

Furthermore, proponents of LA in HE usually view the collection and analysis of student data in optimistic terms, as a mechanism to enhance learning. However, these discussions usually take place outside of an overt acknowledgement of the "neoliberalisation" of the university, and the way in which this space is increasingly being dominated by the logic of profit and accumulation – a logic with its own power dynamic that determines how people are organised and how much they are valued, a logic not dissimilar to colonialist logic (Zuboff, 2015; Beer, 2019; Bernard, 2020; Prinsloo 2020). Thus, when considering VLEs, such considerations should not take place outside of the ideologies that shape the datafication of HE, as they could ultimately thwart our efforts to transform HE spaces into spaces where a diverse group of students can participate equally, and where all students feel at ease and at home.

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