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De-coding or de-colonising the technocratic university? Rural students' digital transitions to South African higher education

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Abstract

Despite wide-ranging policies and practices intended to address historical inequalities in South African higher education, and calls for decolonisation to include more local relevance, little attention has been paid to the experiences of rural students, especially their digital participation once at university. Previous research has highlighted limitations in technological access in rural areas and the importance of mobile phones for transitions. Whilst universities offer wide-ranging digital support, there remains a tendency towards universalist mechanisms. Drawing on a longitudinal study across three universities, and employing Holland's theory of figured worlds, we highlight rural students' experiences of digital transitions across different cultural worlds, prior to university and once they arrive, including the bewildering technocratic systems and practices and resulting conflicts and positionings encountered. We show how students improvise to decode the digital university and figure out new practices. Decolonisation of universities involves rethinking the 'technocratic consciousness' (both colonialist and neoliberal) and its apparatus including digital systems and structures. For rural students to become successful digital practitioners in higher education, universities should acknowledge prior digital experience and forms of knowledge and focus on expanding individual and collective agency in supporting transitions, as mechanisms for shaping a decolonised digital education.

Keywords: decolonisation, digital literacies, inequalities, identities, agency

Introduction

South Africa is one of the most urbanised and industrialised countries in Africa (Todes and Turok 2018). Yet, with a Gini Inequality Index indicator[1] of 63 in 2015 (highest in the world), a 2018 World Bank report concluded, it is one of the most unequal countries worldwide, where rural areas have the highest poverty concentration (Sulla and Zikhali 2018). Higher education (HE) in South Africa is a key driver of equity, social justice and democracy (Department of Science and Technology 2007). Yet, despite massive investment and numerous initiatives, there continues to be a significant lack of academic achievement of students from historically under-represented backgrounds, particularly the majority black population which has the lowest participation rates (Cooper 2015; Leibowitz and Bozalek 2014). Frustration with lack of change was demonstrated in 2015 - 16 by large-scale student unrest, targeting traditional and formerly 'white' universities in particular (Luescher, Loader, and Mugume 2017). Students demanded an end to the colonialist grip and eurocentrism of higher education in South Africa (Chinguno et al. 2017; Hodes 2017). Their demands intensified calls for universities to address decolonisation across institutions, including more relevant Africa-centric curricula (Mbembe 2016; Oyedemi 2018).

In this paper, we focus specifically on rural students' digital transitions to HE, paying attention to social, spatial, historical and cultural complexities. Universities across South Africa are seeking to respond to the changing demographics, yet rural students have attracted limited attention, even though due to the displacement effects of apartheid, they remain one of the most marginalized groups (Mgqwashu 2016). We understand rural as 'space which sustains human existence and development outside the

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[1] Zero represents perfect equality while 100 is a proxy for total inequality.

jurisdiction of metropolitan/city/town authority' (Masinire and Maringe 2014, 148). We acknowledge that students from urban townships also experience challenges in accessing and participating in HE, with mobility between urban and rural areas through schooling or family movements, but we argue that rural students also face unique, intersecting complexities, including with digital transitions.

A multiplicity of factors have been found to affect transitions from rural areas, including geography, financial resources, schooling, and language (B. Jones et al. 2008). Rural students are more likely to have experienced the double disadvantage of poverty and poor schooling. Most will have attended lower quintile[2] schools, which predominate in rural provinces (van der Berg et al. 2017) and national testing results continue to show rural schools at a disadvantage, including final examination rates (Leibowitz and Bozalek 2014; Mdepa and Tshiwula 2012). All of which explains why student representation in universities is highly unequal in terms of demographics and geography, with deep rural areas particularly under-represented (Czerniewicz and Brown 2014). Whilst acknowledging these challenges, there is a tendency to consider rural communities in comparison to urban counterparts in deficit terms. A contrasting, generative and dynamic understanding of rurality values the contributions of actors and lived experiences in transforming contexts (Balfour, de Lange, and Khau 2012) This recognises how cultural practices and a deep sense of collective responsibility tend to nurture greater community cohesion and identity (Masinire and Maringe 2014; Odora-Hoppers 2004).

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[2] South African schools are divided into categories (Quintiles 1 to 5) according to the socio-economic status of the community in which the school is situated. Quintile 1 schools are the poorest.

Jones et al (2008) suggest, however, that it is not simply that students from rural contexts are disadvantaged, but that institutions are not prepared to support their needs. This includes understanding the limitations of technological infrastructure in rural areas and prior experience of digital literacies. Brown (2012) suggests that universities need to recognise technologies as part of the problem related to students' learning difficulties and not necessarily the solution. Unfortunately, institutional inertia and/or belief in deterministic and individualised approaches to technology in South African universities continues (Ng'ambi and Bozalek 2016).

In this paper, we explore students' contextualised digital practices before, during and after entering university. We draw on a longitudinal study of rural students' negotiations of transitions to and through HE in South Africa called [name removed]3. The paper argues that students from rural communities face considerable challenges, when encountering technological systems, requirements and practices that, in the main, they have little or no prior experience of. Digital education systems and practices form part of a wider technocratic system which takes limited account of prior experience and context in favour of globalised modernity, a form of continuing coloniality (Mbembe 2016).

Next, we discuss technocracy and modernity in relation to understanding rural students' digital transitions and literacy practices. We explore debates surrounding rural students' use of digital technologies before and after entering higher education in South Africa. Conceptualising transitions using Holland's work on figured worlds (Holland et al 1998), we then introduce the study and methodology. Key findings and their relevance are discussed and implications for rethinking a 'technocratic consciousness'

(Fischer 1990) in institutions, in favour of 'post colonial' digital education and student agency are suggested.

Technocracy

Modernity, Giddens (1998) argues, denotes a society characterised by living in the future rather than the past and yet Mignolo (2011) refers to coloniality as the darker side of western modernity. Whilst decolonisation has been underway in South Africa since democracy in 1994, colonial power has never gone away. 'Coloniality occurs in the previously colonized spaces and in spaces not historically colonized but have been subdued by [the] allure of Eurocentrism' (Oyedemi 2018, 2). Thus, coloniality is found within new spheres, including those associated with modernity, globalisation and technology.

Technocracy, 'a system of governance in which technically trained experts rule by virtue of their specialized knowledge and position in dominant political and economic institutions' (Fischer 1990, 17) plays a role in sustaining the dominance of certain forms of knowledge, including in universities. For Danforth (2016) the concept is useful in thinking about technology in relation to social justice and inequalities in education because in a technocracy, technical training and specialised knowledges are privileged over social meanings derived from experience or cultural practices. Technocracy is often portrayed as neutral or apolitical, even though technical knowledge and innovation have the capacity to change institutions and human endeavours (Williamson 2018). As such, technocracy can be argued to underpin modernity, the colonial power apparatus and hegemony within HE institutions.

This suggests students entering HE from rural backgrounds in South Africa are not just facing on-going coloniality and pedagogic injustices (Leibowitz 2017) but a university system imbued with a technocratic 'consciousness' (Fischer 1990, 41) and a

commodified view of students (Oyedemi 2018). Mbembe (2016) argues that decolonisation of universities must include addressing access, management, assessment systems and marketisation; in fact the whole system must change. The notion of a 'digital university' tends towards universalist policies that treat all students as homogeneous with access to and prior knowledge of proscribed digital technologies (C. Jones 2013) and echoes a wider point about the tendency of universities towards seeing students as 'decontextualised learners' (Boughey and McKenna 2016). For Mbembe (2016, 31), 'to decolonize implies breaking *the cycle that tends to turn students into customers and consumers*' (original emphasis) which he argues is linked to a relentless tide of bureaucratization and control.

For Fischer (1990, 41) a 'technocratic consciousness' strips lived experience of its aesthetic and ethical features, thereby rendering a clearly calculated picture of 'how the world works, a conception of how it should work, and a set of tactics for changing it'. This suggests that when students apply for or enter HE, the cultural practices and prior knowledge associated with rural backgrounds might be ignored or devalued by a technocratic mind set which privileges one way of viewing the world and the requirements of transitioning from one world to another.

Digital Transitions

To situate the discussion on the influence of technocracy on digital transitions, we now outline some key literature on access, institutional challenges and digital literacies before focusing specifically on students from rural contexts in South Africa.

Digital access

Czerniewicz and Brown argue that students who lack digital experience and opportunities, specifically those using a computer for fewer than 4 years; and without

direct access off campus can be seen as 'digital strangers' (Czerniewicz and Brown 2013). They distinguish between computer use and cell phone use, as even 'digital strangers' were mainly found to own or have access to a mobile (cell) phone. However, for rural students, owning a phone does not necessarily equate to Internet access. In rural areas, Internet access is far more limited than in metropolitan and urban areas. Statistics South Africa's 2017 General Household survey (Stats SA 2018) found that whilst 61.8% of South African households had at least one member who had access to, or used the Internet either at home, work, place of study or Internet cafés, only one-tenth of South African households have access to the Internet at home and in the predominantly rural regions of Limpopo, Eastern Cape, and North West, this was less than one per cent of households. Furthermore, the high cost of data, only available through limited outlets and limited places with Wi-Fi access in rural areas increases the difficulties for communities, including students applying to and engaging in higher education (Chothia 2017). Patterns of digital access are therefore highly differentiated and unequal and those living in rural areas of South Africa are likely to be the most disadvantaged and constrained. This affects those trying to apply to university, and those at university, for communications and when returning home, trying to study in an environment where Internet access is likely to be limited at best.

Institutional practices with technology

The South African National Plan on HE (Department of Education 2001) like many similar national frameworks planned for technological solutionism, suggests that universities should make use of digital communication networks to improve pedagogy. However, in a recent review of the last twenty years, Ng'ambi and colleagues highlight that 'the differently positioned historically advantaged and disadvantaged institutions, which have been inherited from the apartheid era, have produced different visions on

how technology could be used'(Ng'ambi et al. 2016, 845). Implicit in this, is that these different positionings have resulted in unequal levels of resources, impacting on how students are supported and technological systems and associated pedagogical strategies are managed. Furthermore, findings from around the world suggest that those experiencing social disadvantage are much more likely to be excluded from digital technologies than the socially advantaged and those living in rural areas are particularly highlighted (Helsper 2008). Therefore it is not just a question of how technology is deployed in universities but how this is adopted, perceived and experienced by students coming from different backgrounds and how the technocratic 'mind-set' of universities shapes that experience.

Digital literacies

The gap between university students' own digital literacy practices using mobile phones and institutional requirements and expectations for use of institutional computer literacies has been previously highlighted in South African studies (for example Thinyane 2010; Magunje 2013; Kajee and Balfour 2011). An in-depth report on digital access and use in South African universities (Czerniewicz 2012) emphasised the importance of taking account of the wide range of literacies that students engage in and the innovative ways they exploit technologies. The importance of the cell (mobile) phone as a form of objectified cultural capital which can enable agency and also disrupt institutional rules and norms (Czerniewicz and Brown 2012) also challenges binary notions of literacy and illiteracy and what is meant by 'skills' or literacies.

Furthermore, digital literacy practices are spatial and related to identities and mobilities. Students transitioning to university have to reconcile the conflicting transitional spaces of their home and university identities (Kapp and Bangeni 2011).

Kajee and Balfour (2011) found digital divides operating in the university environment where students were often 'caught between' the technologicised and non technologicised worlds. Whilst some found ways to work around this, others continued to feel marginalised by the discourses of digital literacies dominant in university environments.

Whilst there has been considerable research on digital literacies in HE both internationally and in South Africa, students from rural backgrounds in South Africa have only received limited attention. A recent study in a rural university highlighted the particular challenges of coming from a rural background, including under-resourced schools without libraries, and very limited or no access to technology in communities and schools (Chinyamurindi et al. 2017). Previously Mentz et al (2012) reported similar constraints with regard to internet access, lack of technical support and resources and infrastructure. Czerniewicz and Brown (2014) explored challenges students from rural backgrounds faced at university with basic computer literacy courses, learning management systems, typing and submitting assignments online. As highlighted previously, rural areas in South Africa are particularly poorly served for internet access and basic infrastructure so that experience of digital technologies in the home are likely to be very constrained (Chothia 2017). Whilst urban students may experience some similar problems, the scale and depth of the infrastructure, resourcing and spatial challenges for rural students is considerably greater. As such, students are entering a digitalised university system that is completely alien to life in a rural community, frequently without access to computers, the Internet or in some cases, electricity.

In order to understand how we can conceptualise digital transitions from a rural world to the digitalised world of university and the interplay of structure and agency, we

now turn to our theoretical framing of figured worlds (Holland et al 1998) before

introducing the study, its methodology and selected findings.

Identity and agency in figured worlds

Moving from one context to another and negotiating transitions is a matter of becoming,

changing identities and subjectivities. Transition can be understood as a means of

'identity making' through changing understanding of self, in relation to individuals and

social structures (Ecclestone, Biesta, and Hughes 2010). We employ Holland's theory

of *figured worlds* (Holland et al. 1998, 52) to interrogate how students negotiate the

transitions from one world to another and the relationship between agency and changing

identities as people move between different worlds. This hybrid interpretation of

identity, drawing on constructs from Bourdieu, Vygotsky and Bakhtin incorporates

reflexivity and agency, whilst nonetheless acknowledging the societal structuring and

positioning that shape our future selves. Figured worlds are social encounters in which

the positions of those taking part matter. They are socially organised and located at

particular times and places and where our histories shape how we participate. It is

through these social encounters that our identities in new worlds are formed (ibid). A

rural community, an online network or a university can be considered as figured worlds.

How we act when encountering new figured worlds gives rise to and shapes our

changing identities and subjectivities through an interplay of positional and figurative

identities (ibid).

The interaction of these identities enables us to move beyond the social

positioning and structures that reproduce inequalities and develop a new or reformed

identity within a community, principally through improvisation. Improvisations are the

mechanisms for employing our agency through actions designed to resist or overcome

the cultural and historical constraints that powerful structures and positions embody

(ibid). Practices are understood as ''embodied, materially mediated arrays of human activity centrally organized around shared practical understanding' (Schatzki 2005, 11). Indeed, cultural artefacts can act as 'pivots' into figured worlds, where they can shift the positioning and the frame of the activity (Holland et al. 1998, 63). Thus embodied, material and cultural artefacts are central to how we make meaning and form part of our practices. These constructs allow us to explore the influences of rural figured worlds upon the new world of university including positionings and power structures, the role of digital literacy practices, cultural artefacts and improvisations students make.

In the following section we introduce the study and its methodology before discussing key findings related to the argument of this paper.

Methodology

The SARiHE (Southern African Rurality in Higher Education) study investigated how students from rural backgrounds in South Africa negotiate the transition to HE and their trajectories through university once they are there. This included the contribution, constraints and challenges of digital technologies, the internet and social media both in rural communities and when entering HE from a rural background.

We employed a participatory methodology, as a 'decolonizing' mode (Bozalek and Biersteker 2010), as it attempts to avoid a deficit positioning of under–represented students. This enabled student co-researchers to research their own learning lives and to contribute to shaping the research (Timmis and Williams 2013; Timmis et al. 2016). Second year undergraduates from rural backgrounds were recruited as co-researchers from three institutions. Students were studying STEM or Humanities programmes, 72 began and 64 continued throughout. Fieldwork was conducted at all three universities: 'Urban', a 'comprehensive' university with a balanced focus on research, teaching and

technology, 'Town', a rural, research-led and 'previously advantaged' university, and 'Local', a rural, teaching-led, 'previously disadvantaged' university.[4]

Student co-researchers participated in seven face-to-face workshops, involving group discussions, drawing, mapping and focus groups. They created personal accounts and representations of everyday practices in their rural, academic and social lives to form digital documentaries using an iPad and App called Evernote (or in some cases Google Docs). These included diary entries, audio recordings, drawings, photographs and other artefacts, chosen by co-researchers to represent their lives. Multimodal methods are helpful in reducing reliance on writing and language, especially in a second language (Rohleder and Thesen 2012).

Co-researchers played a central role in the research, emphasizing their voices, experiences, and control over their own data. Yet, it is important to acknowledge that participatory research operates on a continuum. Whilst we involved co-researchers as much as possible, there were practical limitations on involvement in data analysis, including time constraints and ethical issues. Furthermore, we do not dismiss the power differentials that continue to play out in funded research of this nature and acknowledge the limitations for co-researchers in shaping all aspects of the research. However, verbal and written feedback demonstrated individual benefits, and for the communities from which they come.

The qualitative data set includes over 72 discussion workshop transcripts, digital documentaries (collections of artefacts) and composite narratives created by student co-researchers[5]. Data analysis was conducted inductively, multimodally and theoretically.

[4] These names are pseudonyms

[5] The study has also conducted interviews and focus groups with academic staff and senior leaders but these are not discussed in this paper.

A rigorous, systematic thematic and multimodal analysis of all data types was first conducted (Ritchie and Spencer 1994; Pink 2013)[6]. From 60 themes, eight concerned digital practices/transitions: access, significant places, admissions, resources, literacies, university learning and values. Thematic analyses were further interrogated collaboratively through whole team sessions including one with student co-researchers. This allowed for deeper, theoretically informed, multi-layered interpretations (Pink 2013). Themes were extrapolated into three stages of transitions:- access, getting in and participation. The following sections discuss the three stages in relation to digital access and literacies in rural areas, getting into university and participation in the digital world of university.

Digital access and literacies in rural areas

Through mapping the stated home locations, we found that co-researchers all came from the previously designated homeland areas of South Africa[7]. Most of these are what can be referred to as 'deep rural' or tribal areas and are therefore amongst the most remote and disadvantaged parts of the country. Digital documentaries and discussion group conversations showed the impact of living in a deep rural area on access to technologies and the Internet. This meant frequent trips to Internet cafes and libraries, all considerable distance away, requiring taxi rides and significant costs:

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[6] Quotes and examples of data in this paper are representative of relevant themes.

[7] Under Apartheid, homelands were areas designated (and required) for black communities to live in, in order to systematically remove them from urban areas. They were (and still are) situated in the most rural and impoverished parts the country.

> Didn't have access to Internet, had to go to town and often didn't have money.
> There is only one Internet café in town serving 32 neighbouring rural villages.
> (Discussion group, TOWN, 25 March 2017).

Nevertheless, Internet cafes were important lifelines for opening up new worlds:

> 'I also include the Internet café, which is like in my case, cause it was where I got
> exposed to like technology for the first time and like opened like the world of
> Google and social media.' (Discussion group, TOWN, 1 April 2017).

Radio (and television to some extent) was frequently mentioned as another important means of opening up new worlds:

> '… I used to listen to the radio and at night they talked about work and education,
> so I was encouraged and all that and I got some information from the radio…'
> (Discussion group, LOCAL, 1 June 2017)

However, in line with previous research (Chinyamurindi et al. 2017; Mentz et al. 2012), many co-researchers highlighted the absence of digital technologies altogether, stolen computers or lack of teachers and/or expertise to support technology use in rural schools, which in turn reflected a more limited curriculum overall. Figure 1 shows an Evernote documentary entry and a discussion group quote.

Figure 1 here

Figure 1: Evernote digital documentary

> 'We had one computer lab but it was not useful because we don't have a computer
> teacher … I didn't even know the power button of it … until grade 9 …'
> (Discussion group, TOWN, 1 April 2017).

The Church was highlighted for its aspirational role and practical steps including access to computers and the Internet. Internet cafes were sometimes viewed with ambivalence because of the need to interact with strangers:

'I had no phone and I didn't even know Internet and Google, even a computer. I saw one when I went to apply [to university] ... when you get to the Internet café, you ask strangers to assist you.' (Discussion group, TOWN, 22 July 2017).

This is particularly significant for students coming from rural areas because in a rural community, there are no strangers; everyone works together with people they have known throughout their lives. Therefore asking a 'stranger' for help is much harder than it might appear. Many student responses suggested they felt powerless and very anxious:

'I didn't know anything about computer, I remember the first time pressing a computer it was a horror movie. I don't know how to explain it, I was in an Internet café, I have to pay money … in fifteen minutes my R50 just gone. I didn't even know where can I start, what can I do?' (Discussion group, TOWN, 22 July 2017).

Furthermore, many co-researchers referred to themselves as 'computer illiterate' - seeing this as a binary state (literate v. illiterate). This positioning suggests students felt there were different expectations of digital literacy that they could not meet and that a phone was not necessarily a cultural pivot into new worlds, as shown in the quote below:

'…for me technologies and internet … they never worked for me, they only started working now because I had no internet connection. I had no phone, I was computer illiterate and even when I had a phone … as you know, when you are from rural areas, you don't know what data is even if you buy airtime, it's just for calling, so you see technology for me didn't play a huge role…' (Discussion group, TOWN, 2 May 2017).

In summary, there were many challenges for the students in our study trying to access technologies in their rural communities, these included finances, distances, schooling and resources. Whilst access to radio was commonplace, negotiating access to digital technologies and the Internet was less straightforward, moving between the different

worlds of Internet cafes, libraries or other schools. Nonetheless, these places acted as cultural pivots into imagined figured world of university, which helped to reframe positionings and possibilities (Holland et al. 1998, 63). Yet, many co-researchers were bewildered by digital technologies and felt positioned in deficit. They encountered conflicting spaces (Kapp & Bangeni 2013) leading to uncomfortable positionings and alienation in new worlds (Holland et al, 1998). This powerlessness and loss of agency was particularly critical coming from rural areas because rural life is often governed by a strong sense of collective responsibility (and therefore agency) from an early age (Odora-Hoppers 2004; Moletsane 2012).

Getting into university

Finding out about and applying for university make engagement in online environments almost a necessity. Friends, family members, teachers and church leaders frequently encouraged co-researchers to consider applying and helped in deciphering the requirements of online applications. There were many examples where co-researchers highlighted the importance of the Internet for finding out and applying to university:

> 'I think technology played like a huge role in actually coming here because I don't
> think anyone would have applied and gotten like the right information to get here,
> so like laptops and getting information from internet cafes … But I think the
> internet it's like the biggest resource that we used.' (Discussion group, TOWN, 22
> July 2017)

In referring to a picture of his former teacher, this student commented:

> 'She was the reason for me to be at URBAN in the first place she helped me apply
> using her device and her money to buy airtime for data' (Evernote entry, URBAN,
> 3 August 2017)

Whilst most did use technologies in some way to apply, this was not always straightforward in contexts without electricity or Internet connectivity:

> 'it was so difficult everything was just so electronic, to the point that my Dean had to enrol me.' (Discussion group, TOWN, 25 March 2017).

Seeking help locally from extended family members, teachers or church leaders and going to libraries and Internet cafes mediated these challenges:

> 'I applied through the internet: I used the computer at my nearby library, that's how I eventually chose URBAN.' (Discussion group, URBAN, 17 August 2017)

Whilst there were examples of universities going out to rural schools to promote their courses and universities, co-researchers did not include discussion of help from the universities in supporting students from rural areas with their applications. This suggests a system that does not recognize the challenges of applying online in rural areas, although, at *Local*, they do not (yet) require all students to apply online and are more flexible on fee payments. The different universities all offer helplines and applicants can phone for help but when applying using a phone, as many students reported they did, then it is impossible to manage the dual processing on one device.

Our findings suggest that when applying to university from a rural community, there were numerous technological and technocratic barriers, particularly through the admissions processes. These technocratic systems required specialised knowledges and rationalistic processes that reinforced marginalisation and inequalities (Danforth 2016; Fataar 2018). However co-researchers highlighted how they used their own agency, working with key local actors to overcome these positionings through improvisations.

Entering the digital world of university

Firstly, we review the institutional contexts in relation to digital education, based on

personal communications, website and policy documents[8] before presenting related findings. Whilst all three universities offer induction sessions for first years, these are approached differently. *Local* screens all first year students through an initial digital literacy test. Students, who do not meet the standard, must take a computer literacy course run over three weeks. At *Town,* there is a specific focus on foundation programmes, where most students are from rural schools. A dedicated digital literacy course is provided for all students. *Urban* has invested heavily in digital technologies and infrastructure. A brief initial induction session for all students covers basics like single sign on and the learning management system, followed by subject based tailor-made courses and a centralised drop in help service. *Urban* requires all students to have a mobile device, which is widely used in classrooms. Tablets are provided for the poorest 3000. The use of mobile devices for learning is encouraged at *Local* and at T*own* but not supported centrally. Although both have central helplines and at *Town*, networking officers are assigned to student residence halls. All three universities operate a centrally run learning management system, including for assessments and offer support for staff to introduce pedagogical innovations using technologies. At *Town* some staff have introduced social media to encourage participation outside of class and at *Local* there are initiatives in one faculty to support high school students with digital transitions. This brief review shows that whilst there are differences in approach, all three universities offer fairly similar services, although *Urban* has invested more heavily and is positioning itself as a technology leader. Nonetheless, the findings from our research show similarities across all three universities in terms of students' practices and problematic technological encounters, suggesting that there are other factors to

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[8] These are not cited in the text to protect anonymity.

consider.

A large number of co-researchers from all three universities reported anxieties in relation to university systems and procedures. For example, in relation to assessment requirements:

> 'Now that I'm at varsity I had to start a new life and it was very difficult and challenging for my first year because then I was supposed to do my assignment using laptops. I didn't know what [they were] and how to open [them]' (discussion group, LOCAL, 27 July 2017)

This demonstrates the on-going bewilderment with digital devices, adding to the stress of early assignments and as shown below, including losing work.

> 'the first day I wrote an assignment and I didn't see it and I didn't know there was a backup in the computer and I was busy writing as I was getting to the end, the assignment disappeared and I saw that it was over and somebody helped me and my tutor even said, "no, I will teach you computer. When you have a problem, you must come to me…"' (Discussion group, TOWN, 2 May 2017).

This example also shows how some students overcame these difficulties through the mediation of tutors and peers and sometimes family or church members. The social positioning of students was also evident in the disciplinary choices and specialised knowledges associated with Computer Science courses and relates to wider issues concerning expectations and assumptions of prior knowledge:

> '…you know what the Dean said to some people at the beginning of the year when you wanna take CompSci? "You people will like not try to take CompSci … you don't even know how to switch on the computer" … You get there, they say "design your own game"…' (Discussion group, TOWN, 1 April 2017).

Students set up informal academic spaces on social media to collaborate with peers on topics they might be afraid to ask of tutors or when face to face in class as found in

other studies of under-represented students (Author1 et al 2016). Figure 2 is an example of the very commonly cited use of WhatsApp:

Figure 2 here

Figure 2 – WhatsApp group conversation - Evernote documentary

There were however, inconsistencies in how students felt they were being positioned in relation to technologies. There were frequent reports during group discussions of how technology represented the future and the values of a modern university, leading to identity conflicts:

> "…it was a barrier to me because lack of technology and then as a result we are living in a century whereby technology is the most phenomenal thing...'
> (Discussion group, URBAN, 20 April 2017)

> Ok myself personally I value tradition a lot, and as one of my sisters has said that what is valued in university are skill development and technology (Discussion group, LOCAL, 2 March 2017)

Such contradictions also emerged in relation to peers, when describing themselves as lacking or 'slow' in comparison to urban counterparts, indicating how some rural students felt positioned as 'inadequate' through the technological expectations of the university.

> Like using a laptop was difficult for me because I was too slow. And when I look at others those who grew up in urban areas it was too much easy for them to use laptops... (Discussion group, LOCAL, 1 June 2017)

> …..here everything is submitted online, we do an essay online, we do everything online, so computer illiteracy also was a barrier… (Discussion group, TOWN, 22 July 2017)

This was particularly fuelled by institutional practices such as testing digital literacies and skills on entry, universal use and expectations of digital devices and the increasingly online nature of all transactions. However, co-researchers tended to see themselves in deficit rather than criticising the institutions for not adapting to their particular needs. A constant theme in reports about schooling referred to lack of technology, teachers qualified to teach it and the limited infrastructure in rural areas. Although all three universities have adopted universal support mechanisms, these didn't appear to mitigate the particular challenges of working and learning in a digitalised university when coming from a rural background.

At all three stages of transition, through schooling and in rural communities, finding out about university and once arrived, students were entering new figured worlds with different discourses, practices and cultural codes (Holland et al. 1998). Many co-researchers experienced marginalisation and powerlessness through limited technological infrastructure, travelling long distances and incurring costs for access and then had to negotiate the technocratic world of university which downplayed prior experience and existing literacies in favour of specialised knowledges (Danforth 2016). Yet, co-researchers also showed how they negotiated the new spaces and practices surrounding the technologies, assessments, online systems they encountered. They worked with local or ad hoc sources of help (e.g. peers, tutors, teachers, internet café staff) to overcome these challenges, and expand their digital and social capital, reconciling some of the conflicts of transitioning from rural to university spaces (Kapp and Bangeni 2011; Czerniewicz and Brown 2014). Holland suggests that it is through improvisations, the interplay of agency and habitus and how we act in new figured worlds to overcome the power positionings, that historically determined identities are challenged, new subjectivities emerge and cultural change takes place (Holland and

Lachicotte 2007) . Furthermore, 'such improvisations are the openings by which change comes about from generation to generation' (Holland et al. 1998, 17–18).

Discussion

Many of the conflicts arising from modernity in a post-apartheid South Africa still in the grip of colonialism (Mignolo 2011) have been shown in the findings above. The alienation reported by other authors (Mbembe 2016; Fataar 2018) when students come into institutions that do not reflect their experience, was also shown here in co-researchers' accounts of digital transitions and technocracy. The backgrounds and prior experiences of co-researchers appeared to be largely unacknowledged by institutions, leading them to view themselves negatively in relation to urban students or those from 'better' schools whom they regarded as more digitally literate. The hyperbolised social status associated with 'modern' technology also contributed to identity conflicts, reinforcing the barriers of working with peers and understanding the digital tools and practices they required. In a technocractic environment technical training, specialised knowledges and individual skills are valued and emphasised over culturally situated practices (Danforth 2016). In our study, students found the fact that so many systems including assessments were online required specialised practices they were unaware of. Fataar asserts that academic development programmes in South Africa focus on student deficits, thus contributing to students' experiences of marginalisation (Fataar 2018, 3).Czerniewicz has argued:

> 'By redefining the concept of digital skills to extend beyond digital haves or digital have-nots, many more students would be able to be more accurately positioned in relation to their *actual* digitally-mediated experiences' (Czerniewicz 2012, 13 our emphasis).

Starting from actual experiences, for example, by using cell (mobile) phones, students would have existing expertise acknowledged and be able to expand digital literacies from a position of strength. Fataar (2018) whilst not addressing rural students in particular, argues that students from the Black majority in South Africa who are transitioning to higher education must be seen as active agents of change engaged in journeys across lived spaces. He suggests they are focusing on what is possible and strategically negotiating a challenging and deficient colonialist landscape of HE, which has ignored local knowledges and practices. In our study, we found that in rural areas, students required considerable agency in daily life, working remotely, and solving problems and managing lack of resources and natural hazards. They were used to exercising agency, initiative and being resourceful(Masinire and Maringe 2014; Odora-Hoppers 2004). However when they arrived at university, the negotiation of digital spaces and new practices was far from straightforward. Holland suggests that figured worlds are what gives us form as our lives intersect them and that discourses and practices are 'tools that build the self in contexts of power' (Holland et al. 1998, 27). Through these struggles with digital and institutional systems, rules and practices and exercising agency to overcome them, the students formed hybrid identities:- emerging socio academic identities whilst also maintaining their rural subjectivities. This suggests that it is institutions and not just students who must change.

Increasingly urgent calls for decolonising universities (for example Mbembe 2016; Luescher, Loader, and Mugume 2017) also stress the need for wide-scale curriculum and system change, which should include digital education support and infrastructure, not generally considered as representations of coloniality. Whilst we are not suggesting that digital education within South African universities is wholly wedded to top down uniformity, and digital technologies undoubtedly offer considerable

possibilities for reimagining the future university, they are likely to still be drawn to the same hype and exaggerations as universities worldwide, in relation to digital education and the representation of technology as the solution to everything (Selwyn 2014). Furthermore, whilst universities want to portray a progressive, future facing image, competition and globalization have led to the rise of technocratic institutions that remain imbued with coloniality and can lead to a commodified, rationalistic view of students (Oyedemi 2018; Mbembe 2016). Therefore, there needs to be a balanced perspective on digital higher education, which recognizes the needs of under-represented groups and avoids over generalizing and homogenizing those coming in as 'the students'(Selwyn 2014, 15).

Conclusions

Despite differences in institutional approaches to digital education and support for new students in our study, wide-spread similarities in the challenges of digital transitions across the 3 universities suggest that current support is not sufficiently targeted. Despite the supports in place and their own agency and improvisations, students frequently felt positioned in deficit and alienated by the technocracy they encountered and it was left to them to decode the digital education systems and practice for themselves. Institutions should therefore develop more critical awareness of the effects of a technocratic culture and involve students themselves in the process of change. Students from rural backgrounds have much to contribute in developing deeper and more localised understandings of both the digital challenges in rural communities and how to support other students applying to and becoming part of the university world, including its technologised spaces and practices. Our findings suggest that universities could reach out more to rural communities and schools and support them with digital transitions to higher education, find out where incoming students are from

and what previous experience they have with technologies of any kind, and work with existing rural students on alternative induction and application modes. Universities may then begin to acknowledge prior digital experience and focus on expanding individual and collective agency in supporting transitions, as mechanisms for shaping a decolonised digital education.

Biographies

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References

Balfour, R, N de Lange, and M Khau. 2012. 'Editorial. Rural Education and Rural
  Realities: The Politics and Possibilities of Rural Research in Southern Africa'.
  Perspectives in Education 30 (1): i–ix.

Boughey, C, and S McKenna. 2016. 'Academic Literacy and the Decontextualised
  Learner'. *Critical Studies in Teaching and Learning* 4 (2): 1–9.
  doi:10.14426/cristal.v4i2.80.

Bozalek, V, and L Biersteker. 2010. 'Exploring Power and Privilege Using Participatory
  Learning and Action Techniques.' *Social Work Education* 29 (5): 551–72.

Brown, C. 2012. 'University Students as Digital Migrants'. *Language and Literacy* 14
  (2): 41–61. https://doi.org/10.20360/G2359J.

Chinguno, C, M Kgoroba, S Mashibini, B. N Masilela, B Maubane, N Moyo, A
  Mthombeni, and H Ndlovu. 2017. 'Rioting and Writing: Diaries of the Wits
  Fallists.' *Published by the Authors in Collaboration with SWOP, University of the
  Witwatersrand*. Johannesburg.
  https://docs.wixstatic.com/ugd/de7bea_8ff05c74ed634e1fbf3d179284f74cd6.pdf.

Chinyamurindi, W.T, B Mahembe, E Rungani, and T Chimucheka. 2017. 'Factors
  Influencing Student Usage of an Online Learning Community: The Case of a Rural
  South African University'. *International Journal of Education Economics and
  Development* 8 (2/3): 116. doi:10.1504/IJEED.2017.10007369.

Chothia, A. 2017. 'For SA's Rural Residents the Data Struggle Is Real'. *IOL News*.
  January 13. https://www.iol.co.za/news/south-africa/for-sas-rural-residents-the-
  data-struggle-is-real-7399832.

Cooper, D. 2015. 'Social Justice and South African University Student Enrolment Data

by "Race", 1998-2012: From "Skewed Revolution" to "Stalled Revolution"'. *Higher Education Quarterly* 69 (3): 237–62.

Czerniewicz, L. 2012. *ICT Access-User-Use Relationships in Teaching / Learning in Higher Education in South Africa:Final Project Report*. Cape Town: Centre for Educational Technology, University of Cape Town. https://idl-bnc-idrc.dspacedirect.org/bitstream/handle/10625/50286/IDL-50286.pdf.

Czerniewicz, L, and C Brown. 2012. 'Objectified Cultural Capital and the Tale of Two Students'. In *Exploring the Theory, Pedagogy and Practice of Networked Learning*, edited by L Dirckinck-Holmfeld, V Hodgson, and D McConnell, 209–19. New York: Springer.

Czerniewicz, L, and C Brown. 2013. 'The Habitus of Digital "Strangers" in Higher Education. , 44(1), 44-53.' *British Journal of Educational Technology* 44 (1): 44–53.

Czerniewicz, L, and C Brown. 2014. 'The Habitus and Technological Practices of Rural Students: A Case Study'. *South African Journal of Education* 34 (1): 1–14. doi:10.15700/201412120933.

Danforth, S. 2016. 'Social Justice and Technocracy: Tracing the Narratives of Inclusive Education in the USA'. *Discourse: Studies in the Cultural Politics of Education* 37 (4): 582–99.

Department of Education. 2001. *National Plan for Higher Education*. Pretoria: Department of Education.

Department of Science and Technology. 2007. 'Innovation towards a Knowledge Based Economy: Ten Year Plan for Africa 2008-18'. www.esastap.org.za/download/sa_ten_year_innovation_plan.pdf.

Ecclestone, K, G Biesta, and M Hughes. 2010. *Transitions and Learning through the Lifecourse*. Abingdon, Oxfordshire: Routledge.

Fataar, A. 2018. 'From the Shadows to the University's Epistemic Centre: Engaging the (Mis)Recognition Struggles of Students at the Postapartheid University'. In *Higher Education Close Up 2018*. Cape Town, South Africa: University of Cape Town. hhttp://www.hecu9.co.za/images/Aslam_Fataar_ThinkPiece.pdf.

Fischer, F. 1990. *Technocracy and the Politics of Expertise*. Thousand Oaks.C.A: Sage.

Giddens, A. 1998. *Conversations with Anthony Giddens: Making Sense of Modernity*. Stanford, California: Stanford University Press.

Helsper, E. 2008. 'Digital Inclusion: An Analysis of Social Disadvantage and the Information Society'. London. http://eprints.lse.ac.uk/26938/.

Hodes, R. 2017. 'Questioning "Fees Must Fall"'. *African Affairs* 116 (462): 140–50. doi:10.1093/afraf/adw072.

Holland, D, and W Lachicotte. 2007. 'Vygotsky, Mead, and the New Sociocultural Studies of Identity.' In *The Cambridge Companion to Vygotsky*, edited by H Daniels, M Cole, and J V Wertsch, 101–135. Cambridge, U.K: Cambridge University Press.

Holland, D, W Lachicotte, D Skinner, and C Cain. 1998. *Identity and Agency in Cultural Worlds*. Cambridge, Massachusetts: Harvard University Press.

Jones, B, G Coetzee, T Bailey, and S Wickham. 2008. 'Factors That Facilitate Success for Disadvantaged Higher Education Students: An Investigation into Approaches Used by REAP, NSFAS and Selected Higher Education Institutions.' *Rural Education Access Programme:* http://www.reap.org.za/pieces/reports/pdf/tracking_reports/2008_June_factors_that

_facilitate_success.pdf.

Jones, C. 2013. 'The Digital University: A Concept in Need of Definition'. In *Literacy in the Digital University: Critical Perspectives on Learning, Scholarship, and Technology*, edited by R Goodfellow and M Lea, 162–72. Abingdon, Oxfordshire: Routledge.

Kajee, L, and R Balfour. 2011. 'Students' Access to Digital Literacy at a South African University: Privilege and Marginalisation'. *Southern African Linguistics and Applied Language Studies* 29 (2): 187–96. doi:10.2989/16073614.2011.633365.

Kapp, R, and B Bangeni. 2011. 'A Longitudinal Study of Students' Negotiation of Language, Literacy and Identity'. *Southern African Linguistics and Applied Language Studies* 29 (2): 197–208. doi:10.2989/16073614.2011.633366.

Leibowitz, B. 2017. 'Power, Knowledge and Learning: Dehegomonising Colonial Knowledge.' *Alternation* 24 (2): 99–119.

Leibowitz, B, and V Bozalek. 2014. 'Access to Higher Education in South Africa'. *Widening Participation and Lifelong Learning* 16 (1): 91–109. doi:10.5456/WPLL.16.1.91.

Luescher, T, L Loader, and T Mugume. 2017. '#FeesMustFall: An Internet-Age Student Movement in South Africa and the Case of the University of the Free State'. *Politikon* 44 (2): 231–45. doi:10.1080/02589346.2016.1238644.

Magunje, C. 2013. 'Using Mobile Phones to Support Learning: A Case of UCT First Year Female Science Students in the Academic Development Programme. Unpublished Masters' Dissertation'. University of Cape Town.

Masinire, A, and F Maringe. 2014. 'Education for Rural Development: Embedding Rural Dimensions in Initial Teacher Preparation'. *Perspectives in Education*, no.

323: 146–59.

Mbembe, A. J. 2016. 'Decolonizing the University: New Directions'. *Arts and Humanities in Higher Education* 15 (1): 29–45. doi:10.1177/1474022215618513.

Mdepa, W, and L Tshiwula. 2012. 'Student Diversity in South African Higher Education'. *Widening Participation and Lifelong Learning* 13 (1): 19–34. doi:10.5456/WPLL.13.S.19.

Mentz, E, R Bailey, M Havenga, B Breed, D Govender, I Govender, F Dignum, and V Dignum. 2012. 'The Diverse Educational Needs and Challenges of Information Technology Teachers in Two Black Rural Schools'. *Perspectives in Education* 30 (1): 70–78. https://www.ingentaconnect.com/content/sabinet/persed/2012/00000030/00000001/art00009.

Mgqwashu, E. 2016. 'Education Can't Be for the "Public Good" If Universities Ignore Rural Life.' *The Conversation*. https://theconversation.com/education-cant-be-for-the-public-good-if-universities-ignore-rural-life-56214.

Mignolo, W. 2011. *The Darker Side of Western Modernity: Global Futures, Decolonial Options*. Durham, NC: Duke University Press.

Moletsane, R. 2012. 'Repositioning Educational Research on Rurality and Rural Education in South Africa: Beyond Deficit Paradigms.' *Perspectives in Education* 30: 1–8.

Ng'ambi, D, and V Bozalek. 2016. 'Learning with Technologies in Resource-constrained Environments'. In *The Wiley Handbook of Learning Technology 1*, edited by N Rushby and D. W Surry, 200–220. Chichester, UK: Wiley-Blackwell.

Ng'ambi, D, C Brown, V Bozalek, D Gachago, and D Wood. 2016. 'Technology

Enhanced Teaching and Learning in South African Higher Education – A Rearview of a 20 Year Journey'. *British Journal of Educational Technology* 47 (5): 854–58. doi:10.1111/bjet.12485.

Odora-Hoppers, C.A. 2004. 'The Cause, the Object, the Citizen: Rural School Learners in the Void of Intersecting Policies and Traditions of Thought'. *Quarterly of Education and Training in South Africa* 11 (3): 17–22.

Oyedemi, T. 2018. '(De)Coloniality and South African Academe'. *Critical Studies in Education* Published. Routledge: 1–18. doi:10.1080/17508487.2018.1481123.

Pink, S. 2013. *Doing Visual Ethnography*. 3rd ed. London: Sage Publications.

Ritchie, J, and L Spencer. 1994. 'Qualitative Data Analysis for Applied Policy Research'. In *Analyzing Qualitative Data*, edited by R Burgess. Vol. 173–194. London: Sage.

Rohleder, P, and L Thesen. 2012. 'Interpreting Drawings: Reading the Racialised Politics of Space'. In *Community, Self and Identity: Educating South African University Students for Citizenship*, edited by B Leibowitz, L. Swartz, V Bozalek, R Carolissen, L Nicholls, and P Rohleder, 87–96. Cape Town, South Africa: HRC Press.

Schatzki, T. 2005. 'Introduction'. In *The Practice Turn to Contemporary Theory*, edited by T Schatzki, K Knorr Cetina, and C von Savigny, Second, 1–14. London: Routledge.

Selwyn, N. 2014. *Digital Technology and the Contemporary University: Degrees of Digitization*. Abingdon, Oxfordshire: Routledge.

Stats SA. 2018. 'General Household Survey 2017'. Pretoria. http://www.statssa.gov.za/publications/P03182/P031822017.pdf.

Sulla, V, and P Zikhali. 2018. *Overcoming Poverty and Inequality in South Africa : An Assessment of Drivers, Constraints and Opportunities*. Washington, D.C.: World Bank. http://documents.worldbank.org/curated/en/530481521735906534/Overcoming-Poverty-and-Inequality-in-South-Africa-An-Assessment-of-Drivers-Constraints-and-Opportunities.

Thinyane, H. 2010. 'Are Digital Natives a World-Wide Phenomenon? An Investigation into South African First Year Students' Use and Experience with Technology'. *Computers and Education* 55 (1): 406–14. doi:10.1016/j.compedu.2010.02.005.

Timmis, S, W Yee, and E Bent. 2016. Digital Diversity and Belonging in Higher Education: A Social Justice Proposition. In E.L. Brown, A.Krasteva, M. Ranieri, (Eds) *International Advances in Education: Global Initiatives for Equity and Social Justice, Volume 10. E-learning & Social Media: Education and Citizenship for the Digital 21st Century,* 297 - 320. Information Age Publishing, Charlotte.

Timmis, S and J Williams. 2013. Students as Co-researchers: A Collaborative, Community-based Approach to the Research and Practice of Technology Enhanced Learning. In E. Dunne & D. Owen (Eds.), *The Student Engagement Handbook, Practice in Higher Education*, 509 –525. Bingley, UK: Emerald.

Todes, A, and I Turok. 2018. 'Progress in Planning Spatial Inequalities and Policies in South Africa : Place-Based or People-Centred?' *Progress in Planning* 123 (2018): 1–31. doi:10.1016/j.progress.2017.03.001.

van der Berg, S, C Burger, R Burger, M de Vos, G du Rand, M Gustafsson, E Moses, et al. 2017. 'Low Quality Education as a Poverty Trap'. 25. *Stellenbosch Economic Working Papers*. 11. Stellebosch, South Africa. doi:10.2139/ssrn.2973766.

Williamson, B. 2018. 'Silicon Startup Schools: Technocracy, Algorithmic Imaginaries and Venture Philanthropy in Corporate Education Reform'. *Critical Studies in Education* 59 (2): 218–36. doi:10.1080/17508487.2016.1186710.