Born into the Digital Age in the south of Africa: the reconfiguration of the "digital citizen"

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Abstract

Our previous research amongst South African university students showed opportunities in a divided and unequal context for digital democracy in the form of a mobile society. While computer divides are manifest amongst South African university students, cell phone access is ubiquitous. In the light of this, we explored students' digital practices, especially in relation to learning.

This paper adopts a qualitative approach to two cases - a mobile-centric and a computer-centric student respectively - and uses Bourdieu's notions of objectified and embodied cultural capital as a theoretical frame to explore their differences and similarities, their convergences over time and their disparate histories. We describe the different types of objectified cultural capital available to each student and examine the processes of appropriation of embodied cultural capital respectively. We then explore the relationship between these different types of capital and their shaping of the students' attitudes to and choices about using ICTs for learning. In particular we note the role that one type of objectified capital – the cell phone - has played in this relationship. The case studies surface complexities which need unravelling, and point to the research questions to be explored when grappling with participation in higher education in a digital age.

Keywords

Habitus, growing up digital, South Africa, objectified capital, embodied capital, cultural capital, cell phone, digital native, digital stranger, digital citizen

Introduction

Background

Interrogating the concept of the digital native previously (Brown and Czerniewicz 2009), we have argued that there is no evidence to support the notion of a homogenous generation of digital students. Rather, evidence from the South African setting showed that the term could only be applied to a small and elite group of students. We found that a larger group of the millennial generation showed a serious lack of experience and opportunity using Information and Communication Technologies (ICTs); this group at the opposite end of the digital divide, we suggested are "digital strangers".

Prensky (2001a, 2001b) was the first to posit the notion of a digital native, one which is generational. He argued that all born into the current millennial generation have grown up familiar with digital technology, and will have learnt this knowledge informally - either teaching themselves or through social networks such as family and friends - rather than needing to be taught. Based on this premise, he says that higher education institutions need to change to accommodate this new type of digitally literate student.

We examined the relevance of this concept by looking at students who had more than 10 years experience using ICTs; had grown up with access to ICTs; indicated they had learnt to use a computer by teaching themselves or through social networks of family and friends; and were able to solve ICT problems themselves. We found in the South African context that being a "digital native" was not about age but about experience and also that it did not apply to a generation but an elite.

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In addition, we identified students completely off Prensky's map. These were neither native (immersed in ICTs) nor immigrants (new to ICTs) but strangers who had not had access to computers before coming to university, had fewer than two years experience using computers and relied most often on formal channels to acquire ICT competencies.

It became apparent that notions of "digital" in the discussions about the digital native connoted computers quite specifically. We found that while the group of "digital strangers" in our research were indeed strangers to computer-based technology, they were not strangers to all digital technology. Importantly, they all had access to and experience of cell phones.

We realised that all students live in digitally mediated worlds and have digital identities, and that in the South African context this is facilitated by cell phone technologies. As mobile technologies level the playing field, we proposed that the cell phone could enable digital democracy in a country where both social and digital exclusion are central concerns.

Aim

This paper aims to extend the broad conclusions reached through quantitative work, by considering individual cases. We purposefully selected two students, one of whom would have been classified as part of the digital elite (a "digital native") and one of whom would have been classified as a "digital stranger". Our intention was to use these two cases to illustrate the issues which arose out of our quantitative exploration of this phenomenon (Ryan & Bernard, 2000) and to let the cases tell the story in order to provide a more real and personal account of contrasting technological experiences of two South African students (Stake, 2000). Given our suppositions about cell phones as levellers, we were interested to know about the role of cell phones in their lives, and in their experiences as students navigating their respective learning pathways. In doing this we begin to explore the data using Bourdieu's notion of cultural capital as a theoretical framework to explain the role that cell phones and computers respectively played in the development of students' digital literacies. We consider how the different cultural capitals of the respective students mediate their attitudes to ICTs and the choices they make using them. We examine the role of the cell phone as a leveller to transcend life circumstances and enable a digital democracy as we anticipated it could.

The project

The overall study

This research is based on a research project that has been ongoing since 2003. The project, which has comprised three phases to date, investigates various aspects of students' access to and use of ICTs for learning at university. Phase 1 involved a survey of 6577 students across 6 universities in the western cape region of South Africa (Czerniewicz & Brown, 2009), phase 2 - a survey of 3533 students in 6 different universities located in other regions of South Africa (Brown & Czerniewicz, 2008), and Phase 3 (currently underway) is qualitative and adopts a nested case study approach (Lieberman, 2005) involving a brief survey of 513 students across 4 universities[1] as background to 100 first-level telephone interviews, 38 second-level interviews, and culminating in 6 focus groups. We have found this mixed methods approach useful in moving from the general to the specific (Creswell, 1994).

The case studies

The research reported on here draws on data from Phase 3 research, in particular, two case studies of students who participated in all three levels of our research. We selected these as they represented the two extremes of digital literacy that we had encountered in the earlier phases (Brown and Czerniewicz 2009.These two cases provide examples of how students exposed to different technologies at different stages of their lives used cell phones and computer for learning. The students (Sipho and Nhlanhla[2]) are both similar (they are young black males, live away from home and attend different universities within the same province) and different (one grew up in a rural context and the other in an urban context). Sipho attends a medium-sized previously disadvantaged comprehensive university, whilst Nhlanhla attends a small traditional previously advantaged university. Neither speak English as a first language with isiXhosa being Sipho's home language and isiZulu,

[1] Distributed to students across institutions at computer literacy training, library courses and in areas courses where ICTs were a professional component eg computer science, information systems etc

[2] Not their real names

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Nhlanhla's. Sipho's interviews were conducted in both English and isiXhosa and the focus group in which he participated was largely conducted in isiXhosa. Nhlanhla's interviews and focus group were all conducted in English.

Theoretical orientation
At the centre of digital divide is the issue of access or non- access to technology. At the same time access is required to other forms of resources, all of which intersect (Czerniewicz & Brown, 2005). In this paper, we draw on Bourdieu's concepts of cultural capital, specifically objective and embodied capital (Bourdieu, 1986) to describe the two students and their use of technology; we then reflect on which issues are raised through the data drawing on a Bourdieuian lens to help us understand them.

Objectified Cultural Capital

Objectified capital refers to goods, texts, material objects and media physically transmissible to others (Bourdieu, 1986); it often play a gate-keeping role. Certainly this is the case in South Africa where growing up digital applies to a small proportion of the population; only 14.8% of households have a personal computer (compared to 75% in the United Kingdom and 70% in the United States) (Household Internet and computer access 2007 Source: ITU*).* There is also a marked connectivity divide between provinces in the country with only the Western Cape and Gauteng having a positive ratio in terms of the proportion of Internet users in a province as compared with proportion of population (Goldstuck, 2008, p119). This finding is also supported by a case study of KwaZulu Natal which undertook a spatial analysis of the rural / urban divide and concluded that ICT access correlates with higher incomes and urban investment (Odendaal, Duminy, & Saunders, 2008).

In terms of our case studies, Nhlanhla arrived at university a "digital native" having 'grown up digital' with his first digital experience through the family computer at age the age of seven. He had access to a multiple range of ICTs and was a frequent user of technology socially.

When Sipho arrived at university he was a "digital stranger" having only just been exposed to computers for the first time in his final year of school, not having had access to ICTs whilst he was growing up.

However, access to capital shifts in different conditions, and at university, the two students use a range of technologies across a range of locations to facilitate their learning activities.On campus, Sipho's choices are the general university labs which require booking and have a time limit and his department labs which "*we have to share them with the first years, second years, all those guys*." He lives away from campus and has an old desktop computer for university that he describes as "*not that good, the thing is old. It has Windows 2000. So it lacks some things, anything that requires javascript it can't accommodate*". His father and brother do use a computer at work and when he goes back home he takes his computer with him and "*we only use it to play music and fun and games, that kind of thing, so nothing serious that we do*" and he also has a cellphone with WAP s well as a flashdrive.

Nhlanhla lives in residence and uses one of three university laboratories on campus one of which is open 24 hours a day. He has access to "*pretty much all the things that any post-teen /young adult has access to… cell phone, the walkman the iPod, laptop, computer and the internet*." He has a smart phone, not even a year old, and has internet access and wifi so if he can find a hotspot he can use his phone for downloads. He would prefer to have internet on his laptop but his "*mother complained about the bill so she disconnected it*".

In previous studies, we found that on-campus access was the key mechanism for ensuring equality of access for all students, given that off-campus access has been so varied and unequal (Czerniewicz & Brown, 2009). Certainly that is still true here as both students do have and use on campus access. Yet, off campus, despite obvious differences in background, there are important similarities between these two students, with the central leveller being the cell phone.

It was through his cell phone that Sipho had his first exposure to ICTs and the Internet. Indeed, this is how he was able to teach himself how to use a computer and it is through the cellphone that he has the majority of his ICT-mediated social engagement. For Nhlanhla, although the cell phone came later in his overall ICT experience and is part of a myriad of technological devices, it is his first preference in terms of internet access; if he could buy any new technology in the next six months it would be a cell phone with more highly developed capabilities.

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These observations echo the larger picture - 67% of the SA population owns a cell phone (AMPS, 2008), and the number of unique South African users accessing the mobile internet using WAP is already just about double the size of the number of users accessing the fixed internet (Rick Joubert, head of Mobile Advertising at Vodacom bizcommunity.com). Amongst the students we surveyed previously cell phone ownership was ubiquitous (98.5% in 2007) and not socially differentiated. In addition, cell phones were the main means of access to the Internet off campus by students from low socio-economic groups (Brown and Czerniewicz 2009).

This diversity of experiences in terms of mobile internet is becoming increasingly common in South Africa. Donner and Gitau (2009) have suggested that "mobile-centric internet use" can occur in many different ways and is not exclusive to one group in particular. They categorised the people in their research into mobile only internet users and mobile primary internet users (with two sub categories those who had used a PC prior to mobile internet and those that hadn't). This range in the degree to which people use the mobile internet suggests that it goes beyond a matter of equality but enables people to use mobile internet in the way that best suits their access and their preferences thereby offering "something for everyone"(Donner & Gitau, 2009).

Embodied Cultural capital

Embodied cultural capital refers to the sets of "skills, dispositions, practices, knowledge "embodied" in an individual" (Carrington & Luke, 1997, p102). The process of embodiment (or acquisition of capital) is not instantaneous (Bourdieu, 1986). It involves time which must be invested personally by the individual. The embodied cultural capital of the two students differs, both in terms of the age at which the "work of transmission and accumulation of embodied capital" began and the manner in which occurred (Bourdieu, 1986).

For Sipho the cell phone was his first introduction to ICTs, in particular the Internet whilst for Nhlanhla computers dominated his formative ICT experience. Sipho's digital experiences developed first through his cell phone which his parents bought him in his final year of school. Although he was also introduced to computers around this time, his first experience of the Internet was through his phone. He taught himself how to use the cell phone via the manual and how to use a computer by downloading computer tutorials through the Internet on his cellphone, then working through them on his desktop. He did not take a computer literacy course when he started university because he was confident using ICTs but he has had training through his degree program as he is studying computer science.

Nhlanhla remembers first starting to use the family computer at age seven. He acquired his first cell phone when 12 years old. He was motivated to start using technology by interest "*since my father was also into it, and we enjoy doing the same things, we both got into it*". As he was growing up he "*would read about technology in magazines, etc*". Nhlanhla is extremely confident using technology saying he finds pretty much everything easy because "*I've grown up with computers so i can do all the basics and quite alot of the advanced stuff*".

Another difference that is evident amongst these students is their attitude towards technology.
Sipho is very passionate about knowledge saying " *Yes, you must always search so that you remain up to date—so that you avoid being outdated. In other words in order to be up dated you must subscribe to those development sites, so that you often get news letters—so that you know what is happening currently—what is happening just around*." He continues to teach himself new skills " *I was learning about creating html pages, and we don't do that in school. And also the linux stuff, how to work on the linux 08*".

Nhlanhla is extremely confident using technology saying he finds pretty much everything easy because "*I've grown up with computers so i can do all the basics and quite a lot of the advanced stuff*". His interest is less self-driven than Sipho's: "*I do information systems and I'd love to go into the programming section of my work. Right now we're doing databases and word documentation and we haven't got to the programming part yet*."

Discussion

These accounts sketch the different way that two students have converted their embodied capital into an integral part of their person ie their habitus. We understand habitus, a concept which has been expropriated and adapted quite widely (Reay, 2004), to refer to "ways of acting, feeling, thinking and being. It captures how we carry within us our history, how we bring this history into our present circumstances, and how we then make choices to act in certain ways and then not others" (Maton, 2008, p5).

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In this paper we have described the process of how two students have appropriated a specific type of objectified cultural capital , how they acquired the economic capital to appropriate the material object and how they attained the embodied cultural capital to use it so that their cultural capital in terms of 'the digital' is recognised or represented as symbolic capital ie recognised as knowledge.

However, although both students have acquired the symbolic capital of digital literacy, they have not done so the same way nor have they had the same choices. This is not unexpected, as the process of choice is influenced by an individual's cultural and social capital, and material constraints (Ball, Davis, M, & Reay, 2002).

Nhlanhla still has a wider range of options in terms of access to technology and as a result he makes his choices about his technology practices in order of preference. He uses his phone to access the internet as his first preference "*At the beginning of the month yes a lot because that's when my contract has just been recharged so I can afford to but towards the end of the month my contract is nearly exhausted so I use the computers on campus*." Once he runs out of cell time if" *I don't feel like walking out at night so I ask my friend if I can use their internet" and "If I need to use the internet desperately and my friends are busy I would primarily go to the jet labs or the union labs*". In terms of importance of technology he says its between a cell phone and a laptop but "*Right now it's the cell phone, sometimes it's hard to lug around a laptop everywhere so I'd say a cell phone is important, with internet access. My cell phone has wifi so if there's a wifi spot I can use my phone to download something*."

Whilst Sipho's access to technology is more limited in terms of what technology he can use off campus and it appears that his choices are more strategic and driven by specific activities. When Sipho is at university he uses the "school" computers but these have limitations because "*they are some things you seem to be unable to be done on the internet for instance because the administration and all that kind of stuff because ... there are so many restrictions*". He uses his home computer for studying and storing things. He finds "*doing assignments and such things more easy on the computer because the computer has the keyboard and mouse and when it comes to a cell phone it would be difficult to do it.*" He uses his cell based internet to solve problems "*When I am studying at home or when there something that I think of doing, maybe I come across that particular topic that I am not good at, I then use internet-in other words its' some bit of research."* But he is conscious of the limitations of mobile internet "*because in most times a cell phone produces different results from those of a computer—it's a bit limited, so if I want to do a thorough research I then use a computer or when I realize that its something that I must go deeper into it –but if I just want to it to introduce something for me, then I use it (a cell phone), --I think it assists me but if I want to understand something that is difficult or if I am also looking for the other sites because the other sites are not compatible with my cell phone, so then a computer accommodate those*".

He says whilst computers are important to his studies he cannot live without his cell phone.

This resonates with other interpretations of Bourdieu's conceptualisation of the differences between people's choices as "the opposition between the tastes of luxury (or freedom) and the tastes for necessity (Bourdieu 1986 pp 177-178)" (Ball et al., 2002, p 54). Nhlanhla can make choices around what he prefers whereas Sipho' are more limited by necessity.

Whilst cultural capital can be acquired, Bourdieu notes that it always remains "marked by its earliest conditions of acquisition" (Bourdieu 1986). This appears to be evident in our case studies. The process through which our students appropriated the objectified cultural capital and the time resources they were able to draw on, have had a marked influence on their attitudes. As a "digital native" Nhlanhla is comfortable with what he knows and feels confident that the opportunity to learn will present itself. Having grown up in a family endowed with strong cultural capital, he has always had the opportunity to accumulate and extend his embodied capital. He continues to assume that when he needs to acquire new digital skills he will be able to do so. He has no reason to suspect that the opportunity will not present itself and therefore no need to ensure that he must take the chance whenever it presents itself.

On the other hand, Sipho having started off as a "digital stranger" has had to acquire his embodied capital in a much shorter time frame. He shows immense personal agency and motivation in learning new things and advancing his digital literacy. Sipho's demonstration of agency is not unique, we have examined the " inventive capacity" students show to "circumvent the constraints imposed by structures" in earlier research (Czerniewicz, Williams, & Brown, 2008). However what is relevant in this discussion is that the cell phone has been integral

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in enabling Sipho's agency and that his story provides evidence that the structures of habitus are not "set" or "fixed" , "but evolve - they are durable and transposable but not immutable" (Maton, 2008, p6).

When Bourdieu writes that "the precondition for the fast easy accumulation of every kind of useful cultural capital, starts at the outset, without delay, without wasted time only for the offspring of families endowed with strong cultural capital" (1986), it almost seems deterministic, impossible to change. However, Sipho's habitus has been reconfigured by access to embodied capital in the form a ubiquitous technology. He reshaped his "life history" as a "digital stranger" when he entered university – he is certainly a digital citizen, if not part of the "digital elite".

Conclusion

The student stories we have described here further demonstrate the complex and multifaceted concept of access to information and communication technologies. Technology as objectified capital means nothing on its own – it is only through embodied cultural capital or social capital that the technology can be appropriated and used in accordance with its specific purpose. We believe that this paper demonstrates the capacity of one particular material object (the cellphone) - economically accessible to a wide range of South African students - to facilitate the expedient acquisition of embodied capital necessary to make meaningful use of ICTs for the purpose of learning.

The questions that arise are numerous. Are other students are able to similarly appropriate the objectified cultural capital in the same way as Sipho? Do Sipho's experiences imply or demonstrate a transferability in terms of cell phone and computer based literacies? Is there a group technological habitus of which cell phones are an integral part? In our project we are continuing to analyse these issues and our data through the lens of Bourdieu's theoretical construct of habitus.

What does seem to be the case is while all is not the same in terms of the capital available to different students, the cell phone has provided a kind of universal suffrage. Students may not vote in the same way, and that vote may not equate with full equality, but for the first time there is the potential for a shared technological basis for participation.

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