

A socially just pedagogy in the use of mobile devices in higher education? The case of Humanities first-year students at a South African university

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ABSTRACT

In a highly unequal society such as South Africa, higher education is seen as having a social justice mandate to widen participation, and using technology is one way to achieve this. One university in South Africa made mobile devices compulsory for all first-year students since 2014. This article, drawing on data collected from first-year Humanities students at this university, attempts to understand whether the use of mobile devices for learning met requirements for a socially just pedagogy. We used a sequential mixed methods research design, first surveying the first-year Humanities students in late 2015, and then followed up with focus group discussions in 2016 and early 2017. We utilise Nancy Fraser's idea of 'participatory parity' to unpack a socially just pedagogy, and specifically focus on the component of access to resources. We found that most students had functional access to devices and on-campus data. The manner in which these were accessed was affirmative, rather than transformative. By extending the notion of access beyond just opportunity (functional access as owning or having access to a device and data), to also knowing how to use the opportunity (digital access through digital literacies and fluencies), we found that our case study fell short of being socially just pedagogy. We urge that lecturers take up a central role in enabling students to use their devices for transformative learning.

Introduction

Higher education in South Africa is seen by the government as having a social justice mandate (Kilfoil 2015:1) through, amongst other things, increasing access for previously disadvantaged individuals. This widening access is envisioned to also occur through a diverse range of provisioning supported by technology (DHET 2013). One technology that has featured prominently is mobile devices. Mobile devices include smartphones and tablets, and as laptops became light-weight, these became included as mobile devices. These “devices are making a profound impact in university settings worldwide – both inside and outside of the classroom” (Brown & Pallitt 2015:1-2). This is evident in, for example, the fact that the New Media Consortium *Horizon Report* (Johnson, Adams Becker, Estrada & Freeman 2015) has identified Bring Your Own Device programs and flipped classrooms as amongst the major digital and teaching strategies adopted by universities worldwide. In terms of effect, research shows that the interactive use of mobile devices leads to deeper learning¹. Amory (2015:8) argues that “knowledge *production with* technology is more important than information *consumption from* technology. Student engagement with complex learning activities increases time-on-task, which fosters deeper learning”. And Brown and Pallitt (2015:2) argue that rather than viewing mobile devices as distractions in the classroom, they “can be used to enhance learning”; they argue for “designing course activities and assignments that use mobile devices to deepen students’ engagement with the learning process”.

Various studies have looked at students’ perceptions about the use of mobile devices for learning in a higher education context. The majority of these find positive perceptions; for example, mobile devices were embraced by students for their portability (Al-Fahad 2009), flexibility (Cavus & Ibrahim 2009), usefulness (Cavus & Uzunboylu 2009), convenience (Clarke, Keing, Lam & McNaught 2008), ease of use (Guenter Winkler, Ilgner, & Herczeg 2008; Hsu, Wanga & Comac 2008), collaboration (Alrasheedi & Capretz 2013), and enjoyability (Rogers, Connelly, Hazlewood & Tedesco 2010; Shih Chuang & Hwang 2010). The literature also reveals various challenges faced by students when using mobile devices for learning in higher education – from technical matters on how to use the mobile devices, to pedagogical ones, to challenges of an institutional nature (Chen & Denoyelles 2013; Drenoyianni, Stergioulas & Dagiene 2008; Wong, Milrad & Specht 2015).

In South Africa, laptop and tablet initiatives are relatively novel in universities (Brown & Pallitt 2015:2). While the role of educational technologies to facilitate learning is recognised, “in a resource-constrained environment access to information and communication technologies (ICTs) cannot be assumed” (Brown & Pallitt 2015:4). Furthermore, instead of South African universities being solely responsible for providing educational ICT hard- and software, there is a shift towards “a higher reliance on low-cost, mobile, flexible, ubiquitous technology solutions that are often initiated and provided by academics and students” (Bozalek & Ng’ambi 2015:5). In this context a South African university decided that from 2014 all first-year students would be required to own a handheld device (which initially was defined as laptops and tablets, with increasing recognition of smartphones as students’ first-choice mobile device for learning activities while on campus) to use as an integral part of learning

¹ This is partly because “the more students are engaged in their course work, the more learning will occur” (Ebben, Murphy & Wilson 2011:1).

activities. With this initiative the university became the first university in South Africa to make these devices compulsory for all first-year students (Brown & Pallitt 2015:4).

How do we know whether the use of mobile devices in this specific case, and in general, occurs in a socially just manner? We draw on Nancy Fraser's (2005; 2008; 2009) idea of "participatory parity" being crucial to fulfil social justice, to explicate from our data whether access to and use of mobile devices was socially just in this case. Whilst Fraser identifies three dimensions of participatory parity for this article we focus only on one dimension, namely the access to and distribution of resources. Further, we ask whether the pedagogical arrangements made regarding access to and use of mobile devices are done in a manner that considers their transformative power rather than just being affirmative, i.e. improving outcomes without changing the structural causes. In the process we expand the idea of digital access to be more than just functional access to digital resources (such as devices, data and Wi-Fi), to include developing digital skills in the use of the digital resources for learning. This leads us to find that in our case, whilst the university's compulsory mobile device project enhanced access to material resources, by not enhancing digital skills, it did not enhance participatory parity, and is then not socially just teaching. In the next section we start by examining Nancy Fraser's idea of 'participatory parity' and how it can foster teaching in a socially just manner.

Participatory parity as indicator of a socially just pedagogy

According to Leibowitz, Naidoo and Mayet (2017:81), "a socially just pedagogy is one that both teaches *in* a socially just manner, and that teaches *for* social justice". In this article we focus on the first – teaching in a manner that is socially just (i.e. the provision of equitable learning activities for academic success), and leave aside for now pedagogy for social justice (which is about teaching for social justice, i.e. a learning outcome requiring students to act in a socially just manner) (Leibowitz & Bozalek 2015:8). We draw on the work of Nancy Fraser (2005; 2008; 2009) regarding social justice to investigate teaching in a socially just manner.

Fraser's idea of 'participatory parity' refers to the ability of a person or group of people to participate on an equal footing in social interactions. For Fraser (2005:73), "justice requires social arrangements that permit all to participate as peers in social life". Fraser identifies three dimensions to social justice:

- Distribution of and access to material resources;
- Recognition of social status and identity; and
- Voice and framing (representation).

In terms of distribution of resources, Fraser (2005:73) indicates that "people can be impeded from full participation by economic structures that deny them the resources they need in order to interact with others as peers" (i.e. maldistribution). Or they can be impeded "by institutionalised hierarchies of cultural value that deny them the requisite standing" (i.e. misrecognition) (Fraser 2005:73). And even if people have economic and cultural parity, they can be misrepresented in terms of politics and decision-making (Fraser 2008). These three dimensions are seen as intertwined, but none is reducible to the others (Fraser 2008:282).

Fraser (2003; 2008) further argues that a lack in any of these dimensions (i.e. maldistribution of resources, misrecognition, and/or misrepresentation) can be resolved through affirmative or transformative actions. Affirmative actions improve a situation without changes to the underlying

structures that led to the social inequities (Fraser 2003). Garraway (2017:113) illustrates how students' beliefs and values might be affirmed in a classroom, without the underlying social conditions that are responsible for misrecognition of cultural otherness being disturbed. Transformative approaches will tackle the root causes of the social injustice, and in the case of cultural valuing will deconstruct hierarchical binaries between valued and devalued groups (Bozalek 2017:100).

Fraser's use of 'participatory parity' is about participation in society in general, and is not specific to higher education (Garraway 2017:109). Others though have used Fraser's framing to explore various issues in higher education (Blackmore 2016; Burke 2013; Morrison 2015), and a few authors have applied 'participatory parity' to higher education in South Africa (Bozalek 2017; Bozalek & Boughey 2012; Clowes, Shefer & Ngabaza 2017; Schreiber 2014; Shay & Peseta 2016). In unpacking the three dimensions in higher education, Bozalek and Leibowitz (2012) provide examples of each dimension: access to computers, textbooks and finances indicate attention to matters of distribution of resources; respect for one's gender, race, age, sexual orientation, language and prior learning in curriculum and class discussions indicate attention to matters of recognition; and being treated as a legitimate member in a classroom and being heard illustrate matters of voice and framing (representation).

Whilst we acknowledge that the three components of Fraser's participatory parity are all necessary for social justice and are also all intertwined, in this article we focus on the dimension of distribution of and access to resources. We expand the idea of access to resources to not only include material resources, but also crucial learning resources such as skills. The skills we are particularly interested in, in the context of the use of mobile devices for learning, are digital literacies and digital fluencies.

Chen and Denoyelles (2013) indicate one of the challenges regarding the use of mobile devices for learning as the gap between access to a mobile device and using it for learning. This challenge partly arises from the lack of digital literacies in both students and lecturers. Digital literacies is about "skills such as being able to access, manage and evaluate digital resources" (Drenoyianni *et al.* 2008). Brown and Mayisela (2015:16) define it as "those capabilities that fit an individual for living, learning and working in a digital society". For them digital literacies go beyond Drenoyianni and colleagues' definition, which they call information literacy. Digital literacies also "encompass communication, collaboration and teamwork, social awareness in the digital environment, understanding of e-safety [such as privacy and cyberbullying] and the creation of new information" (Brown & Mayisela 2015:16). The components of digital literacies then include computer literacy, media literacy, communication literacy, visual literacy and technology literacy – all of which are to be embedded in courses (Brown & Mayisela 2015:16).² Another related phrase is 'digital fluency'. Whilst digital literacy indicates that a person knows *how* and *what* to do with digital tools, digital fluency indicates that a person is comfortable with *when* and *why* to use a certain tool for a specific desired outcome (Briggs 2011).

Digital literacies and fluencies can be seen as the 'language' that enables learning with a digital device. However, in the same way that student success requires both physical access to university and

² A related term is that of 'transliteracy', with digital literacies seen as an important part of transliteracy (Thomas 2012). For Thomas (2012) transliteracy refers to "the ability to read, write and interact across a range of platforms, tools and media from signing and orality through handwriting, print, TV, radio and film, to digital social networks. It is the literacy of convergence, unifying literacies past and present across different platforms, media and cultures".

epistemological access, digital access and success in learning is not only about having access to a device, but also knowing how to use the device for learning. Both these components are part of fulfilling the one dimension of participatory parity to ensure a socially just manner of teaching. In the next section we introduce the research methodology we followed to unpack whether the use of mobile devices by Humanities first-year students at a specific university can be seen as an instance of teaching in a socially just manner, using this notion of digital access.

Methodology

This research was initially requested by the Teaching and Learning Committee of the Faculty of Humanities of the case study university, in order to understand how their students experienced the university requirement that all first-year students have mobile devices. The key research question was: what are the perceptions and experiences of first-year Humanities students about the use of mobile devices for learning? In this paper, we look at the data we collected through a social justice lens, as explained above.

In our research we used a sequential mixed methods research design to collect and analyse data from first-year Humanities students. We chose a sequential mixed methods approach because neither method is sufficient by itself and the mix “allow[s] for a more robust analysis” (Ivankova, Creswell & Stick 2006:3). In our sequential mixed methods project, quantitative data was collected and analysed to provide a broad picture of the situation, followed by a qualitative phase to explore the picture in-depth, and clarify issues. We thus had two phases of data collection and analysis.

Phase 1: Survey

The fieldwork for the first phase of the study was conducted between October and December 2015. The target population was the approximately 1 200 first-year Humanities students registered in 2015 at our case study university. We developed a questionnaire based on the ECAR *Study of students and information technology* (Bischel & Dahlstrom 2014), but adapted it to our specific context. The questionnaire was loaded online, making use of Google Forms, and all first-year Humanities students were invited to complete it via a targeted announcement on Blackboard (the university’s learning management system), six posters across campus, and two bulk SMS messages. In addition, a QR code was handed out to first-year Humanities students outside a large exam venue during the November exam period. To encourage participation in the survey we also raffled a tablet as a prize for those completing the questionnaire.

We downloaded the responses from Google Forms into Microsoft Excel. This spreadsheet was then imported into STATA for descriptive analysis. After filtering out students who were not first-year or Humanities students, we had 229 valid responses in our data set. This means that just under 20% percent of the total first-year Humanities students of 2015 completed the questionnaire. Sixty-seven percent of the participants were 20 years or younger at the time of the survey; 60% were women, and 89% black African,³ broadly reflecting the demographics of first-year Humanities students at this university.

³ If including Indian and Coloured students with black African, 96% of the respondents were black.

Phase 2: Focus groups

The second phase of the research took place between November 2016 and March 2017. We contacted students who completed the questionnaire in Phase 1, and who indicated their willingness to participate in focus group discussions with between six and eight participants. Despite indicating their willingness and contacting students numerous times through both emails and phone calls, we struggled to get students to take part in the focus group discussions. In the end we were able to conduct three focus group discussions, one was with a group of students who in 2015 did not own nor have access to a mobile device, and one with students who only had a smartphone or a tablet. What was to be a third focus group turned into an interview when only one student arrived for the group discussion.

The focus groups started with an ice-breaker activity to introduce participants to one another and to the facilitator. There was no remuneration for participation in the focus groups, although refreshments were provided. After receiving written consent, we recorded the discussions and transcribed them. We then identified themes in the transcribed data through a process of pre-identified themes (based on our literature review) and an iterative process of emerging themes and sub-themes. Whilst we could not conduct as many focus groups as we planned, the ones we did conduct served to deepen our understanding of the data from the survey.

Research ethics

Our research proposal was approved by the university's Humanities Ethics Committee in 2015. For the first part of the research, the online questionnaire started with a list of questions that served as informed consent and voluntary participation. This included that only students older than 18 years could take part in our research. For the second phase of our research, the aim and process of the focus groups were explained to participants and they were then asked to sign a consent form indicating their voluntary participation in the focus group discussions. In both phases of the research we guaranteed that our participants would remain anonymous in the written/published findings of the research.

A case study of first-year Humanities students at a South African university⁴

We conducted our research at a comprehensive university established in South Africa in 2005, with over 50 000 students and more than 1 200 permanent academic staff. The university is composed of seven faculties and a College of Business and Economics, stretched across four campuses. The 41 000 undergraduate students broadly reflect the population composition of South Africa, with 92% of the students black and 52% female. When we started with our fieldwork in late 2015, the Faculty of Humanities had around 1 200 first-year students enrolled in subjects offered by fourteen departments. An overwhelming majority of these students were on the main campus of the university, with a few hundred on a second campus.

⁴ This section draws on a research report about blended learning and #feesmustfall at this university (Van Rooyen, de Wet, Frahm-Arp & Joshi 2017).

This university has an explicit teaching and learning philosophy of “learning to be” (Amory, Gravett & Van der Westhuizen 2008), and in 2015/2016 formally adopted blended learning as the mode of delivery. This blended learning approach allows for flexible and varied mixing of face-to-face on-site and online learning designs. It entails various learning modalities and a diversity of learning interactions from class, tutorials, laboratories, and work-integrated and service learning, to online learning in a variety of spaces. This is complemented by a Teaching and Learning Strategy that is guided by the following principles: commitment to excellence, independent learning, reflective and supported teaching, evidence-informed teaching, context-relevant teaching, access (wider participation and epistemological success and throughput), diversity, and appropriate physical and virtual learning environments (CAT 2014:4).

The university’s 2025 Strategic Plan aims to educate students “as African world citizens for life, work, and leadership in the dynamic and complex world of the 21st century, and as knowledge practitioners in professional domains” through excellence in teaching by providing intellectually rigorous curricula and programmes, and stimulating and effective learning environments, that include ubiquitous access to digital facilities (CAT 2014:4). The digital infrastructure includes:

- campus-wide Wi-Fi connectivity on all campuses of up to 20GB per student per month, and free usage between 07h00 and 19h00.
- a total of 4 000 seats available to students in computer labs across campuses, and library spaces such as learning commons on each campus that provide access to computers, unlimited internet use, as well as access to a wide range of digital content such as online journals, e-books, other publications, and theses.
- Blackboard Learn as a learning management system since 2009,⁵ with 85% of undergraduate modules being present on it in 2017, and close to seven million individual logins that year. Blackboard Predict, a learning analytics tool that provides a real-time early warning system for students in need of additional academic and social support, was being piloted in 2017 and 2018.
- access to various software packages (e.g. iThenticate, SPSS, ATLAS.ti, AMOS, STATA, Respondus, Acrobat Professional, and Mathematica).
- learning design and technology support and training for staff, a helpdesk for students (via phone, SMS, email, and walk-in), and online self-paced training in Blackboard and Microsoft by the Centre for Academic Technologies (CAT).
- R18 million worth of free prescribed e-textbooks for first-year students since 2015.
- a requirement for all first-year students to own or have access to a handheld device.

Findings and discussion

The discussion of our findings on access as a dimension of participatory parity in the use of mobile devices for learning focuses, firstly, on access to mobile devices, and access to the internet on these devices via data and Wi-Fi, and secondly, on access to digital literacies and fluencies to use these devices for learning.

⁵ This university first started using an online learning management system in 1998, which was then called WebCT. When WebCT was bought by Blackboard in 2006, the university continued with the Campus Edition of Blackboard, under the name Edulink. In 2009 the university upgraded to Blackboard Learn, which is known within this university as Blackboard.

1. Access to devices and connecting to the internet

In this subsection we indicate how many of the first-year Humanities students had access to mobile devices in 2015, and how they funded these. We then look at how students connected to the internet with these devices, both on- and off-campus, to use the devices in their learning.

Devices owned and borrowed

In our survey we asked questions about both ownership and borrowing of devices – access then included owning a device or being able to borrow a device for use from family or friends when one did not own one. We found that 65% of the first-year Humanities students owned a handheld device (which at the time was defined by university policy as a laptop or a tablet), and 81% owned a mobile device (which included a laptop, tablet or smartphone), with a further 11% of students borrowing a mobile device.⁶ In total 92% of students had access to a mobile device.

In terms of the type of mobile device owned, 61% owned a smartphone, 42% owned a tablet, and 41% owned a laptop. These statistics indicate ownership of multiple devices by numerous students. Despite more students owning a smartphone than a tablet or laptop in 2015, at the time the university's policy did not include smartphones in its conception of handheld devices to be used for learning; this has changed since then.

Student thinking seems to have been influenced by this; only 56% of first-year Humanities students indicated smartphones as important for their academic success, compared to 86% and 71% of students thinking laptops and tablets respectively were important for their academic success. This was echoed in focus group discussions where students indicated that laptops and tablets were far superior to smartphones for use in learning.

Device funding

We were interested in how those students who owned mobile devices were able to buy them, given that the average cost of funding⁷ a student at this university for a year (in 2017) was R85 000. Figure 1 shows the sources of funding of the devices owned by the students. The highest percentage of students (51%) had their device funded by parents or family, 31% by themselves, 11% through National Student Financial Aid Scheme (NSFAS) funding, five percent were paid by the university, and two percent by other means, including loans or bursaries. Overwhelmingly (over

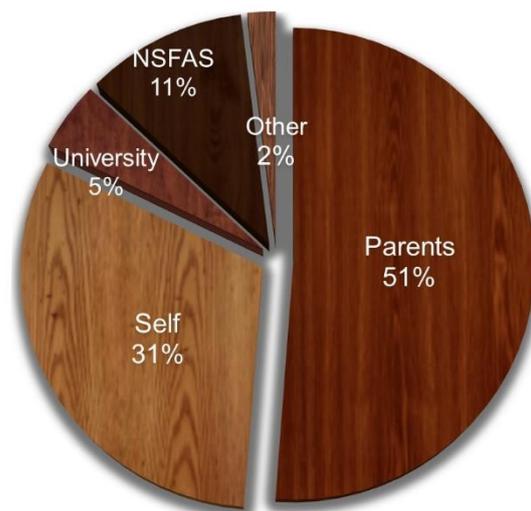


Figure 1: Funding sources of devices owned by Humanities first-year students (n=229)

⁶ The act of borrowing a mobile device for learning is in itself interesting to explore given that the transformative use of mobile devices for learning arises from the personalised nature of the devices, which is unlikely to be enabled to the same effect on a borrowed device.

⁷ This includes tuition, accommodation, books, transport and other living allowances.

80%), the cost of owning these devices fell on students and their families. This indicates an affirmative redistribution of resources, rather than a transformative one, as the underlying causes of the maldistribution are not changed.

When comparing how devices were funded versus how university fees were funded (see Table 1), it is noticeable that NSFAS funding of devices is much lower, and self-funding much higher. Of our survey respondents, 24% of students have their university fees paid by NSFAS,⁸ and all of these students were supposed to have access to handheld devices via NSFAS. Yet, only 11% of all students indicated that their devices were funded through NSFAS. One explanation for the much lower figure can be that the students indicated self-funded, even though they received funds from NSFAS. Also, the five percent of students who indicated university funding of their devices could have included some funded by NSFAS.

Table 1: Funding sources of devices versus funding sources for university fees (n=229)

	Funding of university fees	Funding of device
Parents	43%	51%
NSFAS	24%	11%
Loans	14%	2% (other)
Bursaries	13%	5% (university)
Self	3%	31%

Accessing the internet

Having access to a device – via ownership or borrowing – is one part of using the device for learning; another part is accessing the internet with the device. Here issues related to Wi-Fi access, bandwidth, and data access are relevant.

Most of the students in our survey connect on campus via Wi-Fi,⁹ irrespective of the device they use, whilst those connecting from home do so mainly with their smartphones. When students connect on campus (excluding university residences), 65% use a tablet, 59% a laptop, 59% a desktop in the computer labs, and 42% smartphones. The lower percentage connecting to the university Wi-Fi with smartphones correlates with the lower use of smartphones for learning. This can partly be explained by the reported (expressed in the focus groups) difficulties students experience when connecting to the university Wi-Fi with their smartphones:

This year Wi-Fi is a problem, especially for your phone. You can use iPad, laptops, but for phones. No. (Participant x, black, male, focus group of students who had a tablet or smart phone in first year)

⁸ Throughout the university around 18 000 students receive NSFAS loans, with the university itself funding a further 4 000 students through its “Missing Middle” initiative, for students who do not qualify for NSFAS loans.

⁹ In 2015, on-campus Wi-Fi connectivity allowed each student 4GB free data per month, with 65% of students indicating that they did not go over this amount ever, indicating relatively low use.

A few students spoke about their phones being blocked from using Wi-Fi connection, and one student indicated that his phone was too old. There is also the issue, in a handful of Humanities courses, where students reported lecturers banning the use of devices in the classroom, despite the university policy aiming to enhance their use.

Smartphones were valued for their ability to cheaply connect from anywhere. However, given that data is expensive, numerous students are faced with a conundrum: a laptop is seen as a superior academic tool, but is too data-heavy; a smartphone has limitations with a small screen making reading and writing very difficult, but it is cheaper. One focus group participant expressed the conundrum as such:

It is hard to use your phone to study. A laptop is better, but a laptop consumes more data. For example, when I buy 100MB of data on a smartphone, it can last me a week, but on a laptop not even an hour. (Participant y, male, black, focus group of students who did not have a device in first year)

An aspect regarding the social justice of connectivity for learning that deserves more attention is connectivity from 'home' while at university. In our case study, only around 7 000 students stay in 35 university-owned and managed residences, where they have access to university Wi-Fi. Over 16 000 students live in off-campus, accredited, privately owned accommodation spread across four campuses, with the rest of the students staying with family or in unaccredited private accommodation near campuses. Not only is the non-university accommodation generally expensive and often of poor quality, there is seldom free Wi-Fi provided. With data expensive in terms of income – most people are only able to afford 20MB of data per month¹⁰ (Czerniewicz 2015) – and other demands on money, students expressed not having sufficient data to access learning off-campus as readily as they want to.

2. Knowing how to use mobile devices for learning

Even though students might have access to a device and have access – at least on campus – to the internet, they have to know how to use these devices for learning, before the access component of participatory parity is met. In a similar way to Morrow (2009) arguing that 'epistemological access' (or knowledge access) is necessary to accompany expansion of access to university, we argue here that knowing how to use mobile devices for learning, and associated digital literacies and fluencies, have to accompany having access to devices and the internet. In this subsection we discuss how students reported their use of these devices for learning, their understanding of learning, and what this reveals about digital literacies and fluencies of both students and lecturers.

¹⁰ To be a connected user, two GB is considered necessary (Czerniewicz 2015).

How students used devices for learning

Despite greater ownership of smartphones the students indicated that laptops and tablets were used for academic purposes:¹¹ 82% indicated laptop-use, and 64% tablet-use, for academic purposes. While most students had smartphones (sometimes with other devices), smartphones were not seen as the optimal device for learning. All of the focus groups reported that laptops were the superior tool for learning because one could not only connect to the university Wi-Fi and download resources, but also read textbooks online and complete assignments.

Apart from the problem of connecting to the university Wi-Fi with smartphones, students identified another problem – lecturers not designing course materials with small-screen mobile devices in mind:

our smartphones are unable to generate and display some of the content ... so ja, it is also a disadvantage ... I think if lecturers can design the content that can be generated [for smartphones] that would be easier. 'Cause not everyone owns a laptop. (Participant z, male, black, focus group of students who had tablet or smartphone in first year)

Reading lecture slides and e-textbooks on smartphones were also highlighted as difficult. A participant in a focus group discussion said: “by March my printing money was already used, but my smartphone is too small to read from, and we can only use the computer labs for short periods, you can’t stay long to read” (Participant c, female, black, focus group of students who had a tablet or smartphone in the first year).

Students reported that they used their devices nearly every day for academic purposes: 56% of students claim to use their device daily in class for academic purposes, and a further 28% said they used them weekly for academic purposes. Seven percent of the first-year students indicated that they have never used a device in class for academic purposes. Students mostly use their devices for: accessing Blackboard (86%), the internet for their studies (81%) and email (72%); for completing coursework (61%), and for social media (61%).¹² Students used their devices to access information such as slides or class announcements (consumption), rather than creating content. This seems to be in line with how lecturers design learning experiences.

A lecturer survey conducted at the university since 2014 about the use of Blackboard and other technology tools shows that learning technologies are heavily used for administration, information sharing and communication, and hardly for collaboration (CAT 2017). Further, as Table 2 shows, the use of these are mainly in application and integration, and very little in creation (such as e-communities of practice). Application includes activities such as taking an online class attendance register, e-assessment (both formative and summative) in the form of quizzes (usually multiple choice) in especially large classes, submission of assignments (also via the use of Turnitin), and sometimes marking rubrics. Integration includes, for example, group discussion forums and group assignments (CAT 2016).

¹¹ Note that academic purpose indicates how students used mobile devices for things they considered to be academic, whilst academic success in the section above indicated whether students thought the use of a mobile device was crucial for them to succeed in their studies.

¹² It is noticeable that playing games, loading content, and watching videos daily was very low – although watching videos weekly and monthly was higher.

Table 2: Lecturers' use of Blackboard and other technology tools (%) (CAT 2017)

	Application					Integration					Creation				
	2014	2015	2016	2017	arrows	2014	2015	2016	2017	arrows	2014	2015	2016	2017	arrows
Administration	17	32	27	22		28	30	44	55		9	11	21	20	
Information	56	46	55	56		36	29	41	43		7	6	15	14	
Communication	73	73	91	82		20	14	29	34		14	12	19	36	
Collaboration	-	-	-	-		10	11	22	25		8	7	20	-	
Transformation	-	-	-	-		-	-	-	-		12	11	37	-	

Key: Yellow = slow increase; Blue = reasonable increase; Green = faster increase

A dash (-) indicates that no data was collected on collaboration and/or transformation in 2017, or that this is not conceptual in application or/and integration

This association between what students used their devices for, and how lecturers conceptualised using the devices, led us to wonder about/question students' understandings of learning, and learning with devices. We explored this in the focus group discussions.

Students' understanding of learning

Learning was described by students as acquiring something. It was mostly seen as knowledge that would give one an advantage over others who are not learning. One participant described learning as "getting to know things, getting to absorb. The better you understand something, the more it will work for you" (Participant k, female, black, focus group of students who did not have devices in first year). When probed more during conversation, students raised examples of learning that included skills (such as writing and blogging), and also attitudes (such as why xenophobia was bad, and the importance of tolerance for diverse ideas). Most often though, assessment would be raised when asking about learning. This meant that students associated learning with passing a course, rather than with gaining knowledge, developing abilities, or questioning the attitudes they hold.

Regarding the use of devices for learning, students had quite set ideas about 'proper' use. One participant in a focus group stated that only "20% of us [are] using their smart devices in the proper manner. The rest of us, we are watching videos, Facebooking, YouTubing". When probed about "proper manner", she responded:

When I get into the class, log into my uLink, get my slides, as the lecture is talking. I am reading my slides, taking down notes. I am able to scroll back without disturbing the whole class. Where I don't understand, I can quickly Google and get the definition, or whatever. (Participant m, female, black, focus group of students who did not have devices in first year)

This idea of the proper use of devices was confirmed by other participants, who described similar actions. The 'proper' use envisaged focuses on content consumption (i.e. a transmission model of teaching), rather than creation of content (a transformative model of learning). What was interesting was that the participants in the focus groups described using their smartphones to set up WhatsApp groups with fellow students, both to share information, and to 'collaborate' on assignments, but they did not consider this to be part of learning. Even watching videos and using social media was seen as non-academic, when it could, of course, be learning. Learning with their devices was thus only described as such when accessing and using information provided by lecturers, or for assignments.

Technical know-how versus digital literacies and fluencies

From our survey we learnt that 28% of the first-year Humanities students felt that they needed IT support to know how to use their device, with 42% indicating that they do not need IT help, and 30% being neutral to the statement that “I often need IT support to help with my device”. Despite this, not a single student rated their knowledge of technology as poor: five percent of the students thought it fair, and the rest rated it as good (25%), very good (47%) and excellent (23%). However, 95% of the students indicated the importance of training to use devices for learning. We deduce from this the important differentiation made by Bozalek and Ng’ambi (2015:3) between learning with technology and learning technology (or learning about technology): “Learning with technologies has a pedagogical focus, whereas learning technologies focuses more on the technology itself.” While numerous students are seemingly tech-savvy and have technical know-how about the devices, they are not necessarily digitally savvy with how to use their devices to attain authentic or transformative learning (Bozalek & Ng’ambi 2015:4; Johnson *et al.* 2015:34). This is where digital literacies and fluencies are crucial.

Digital literacies are about “skills such as being able to access, manage and evaluate digital resources” (Drenoyianni *et al.* 2008). With digital literacy the focus is on knowing how and what to do with digital tools, whilst digital fluency foregrounds knowing when and why to use a certain tool for a specific desired outcome (Briggs 2011). Despite the overwhelming majority of the first-year Humanities students indicating that they are comfortable with technology (i.e. technical literacy), not many know how to use their devices in collaborative, transformative learning. This indicates a lack of digital literacies (what and how) and fluencies (when and why) – not only amongst students, but also lecturers.

We asked students in the survey about their perception of lecturers’ use of technology in teaching. Whilst the majority of students thought lecturers used the right kind of technology, and used it effectively, most also thought, somewhat contradictorily, that lecturers did not have the skills to use technology in teaching, and indicated that as students they did not receive sufficient training and support to use their devices for learning. They simply followed what lecturers required of them. This alludes to the fact that students are not equipped to achieve transformative, independent learning, but are rather positioned as consumers of information.

Conclusion

The use of mobile devices for learning in higher education has rapidly increased in the last decade, and as scholars interested in a socially just pedagogy, how do we know whether (and then ensure that) mobile devices are used for learning in a socially just manner? In this article we report on our exploration of this question at a specific South African university through focusing on the perceptions and use of mobile devices for learning by first-year Humanities students at the university. We drew on Nancy Fraser’s (2005; 2008; 2009) idea of “participatory parity” being crucial to fulfil social justice, to explicate from our data whether access to and use of mobile devices was socially just and transformative. Whilst Fraser identifies three dimensions of participatory parity, for this article we focused only on one dimension, namely the distribution of resources and, consequently, we have not considered how the dimensions affect each other.

We found that at our case university there was reasonable access to a device – whether through ownership or borrowing – by the first-year Humanities students. The fact that in 2015/2016 (when we conducted our fieldwork) smartphones were not promoted for use in learning, despite being the device with highest ownership by the students, did detract somewhat from socially just use of mobile devices in learning. Functional access was further enhanced through campus-wide free Wi-Fi, though there were some challenges regarding bandwidth and difficulties to connect with smartphones. Off-campus, major challenges to connecting to the internet remained. Overall, functional access to devices and the internet were affirmative actions that in no way changed the underlying causes of maldistribution.

We also considered – as a component of access to a socially just pedagogy – whether students are taught and know how to use their devices for learning. Digital access is thus expanded to include more than just functional access to digital resources (such as devices, data and Wi-Fi), to include digital literacies and fluencies to use these devices for functional access to transformative learning. Having a device is not enough; knowing what to do with it and how to use it for transformative learning is crucial. We're thus interested in 'powerful digital access' that is used transformatively. We found that in our case study this second component of access in terms of participatory parity did not get much attention, and students were not sufficiently prepared or supported institutionally (either centrally or in individual courses) to use their devices for transformative learning. This speaks strongly to a need for a change in pedagogy.

Therefore, whilst the university's compulsory mobile device project enhanced access to material resources, by not enhancing digital literacies and fluencies, it does not enhance participatory parity, and thus falls short of the aims of socially just teaching. It is crucial that universities and lecturers depart from an understanding that technology (such as mobile devices) is a tool for learning, and that the use of technology (such as mobile devices) is not per se transformative (Ng'ambi *et al.* 2015). A socially just pedagogy must recognise both existing inequalities in access to technology, and in capabilities to use the technology. We concur with MacIntyre (cited in Brown, Czerniewicz, & Noakes 2016:142) that "with technology becoming more pervasive, the understanding of digital divides has shifted from those who 'have' or 'have not', to those who 'can' and 'cannot'".

The South African higher education sector is under pressure to increase enrolments and throughput of students, and the Department of Higher Education and Training has included technology as one strategy to address massification. One way that universities have responded to this pressure is to increase the use of technology and to use the affordances that ICTs and mobile technologies bring. However, South Africa has distinct socio-economic challenges which universities must pay attention to if they want to ensure a socially just use of technology, mobile devices, and their affordances. We have argued that universities should not only take into consideration access to devices and data, but also show students how these devices are to be used for learning in a creative, rather than a consumptive, manner through enhancing digital literacies and fluencies.

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