A Practice-Based Approach to Developing First-Year Higher Education Students' Digital Literacy:
A Case Study in a Developing Country

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ABSTRACT

This paper contributes to the conceptualisation of digital literacy as a social practice. While previous studies have focused on student digital skills and digital practices in well-resourced environments, there is a research gap concerning digital literacy as a social practice in resource constrained environments, such as South African universities. A qualitative approach is used to explore the acquisition of discipline-specific digital literacy practices by a purposive sample of three first-year students from two extended degree programme courses. The findings reveal that the discipline-specific learning and assessment activities instantiated students' digital literacy practices in the technical, cognitive, and social-emotional dimensions. Furthermore, the participants acquired digital literacies in the technical and cognitive dimension. The research findings provide insight to how other higher education educators in developing contexts could integrate digital literacies into course curricula as a means of building students' capacity on discipline-specific digital literacies.

KEYWORDS

Digital Literacies, Digital Literacy, Digital Literacy Practices, Discipline, First-Year Students, Higher Education, Learning and Assessment Activities

INTRODUCTION

With higher education institutions adopting technology-enhanced teaching and learning approaches, students are having to thrive in these digital learning spaces. The emergency remote teaching (ERT) mode during the COVID-19 global pandemic further called for innovative ways of not merely transferring content online but that of translating and transforming face-to-face teaching and assessment practices into online ones. Amidst these higher education tensions, first-year students, transitioning from the high school to university culture and practices, are also expected to swiftly accustom themselves to new course and discipline-specific digital literacies. This implies that these students need to acquire, not only digital skills, but digital literacy practices.

This paper contributes to the conceptualisation of digital literacy as a social practice, which is informed by the New Literacies Studies' theoretical approach. It further explores what this perspective means for first-year higher education students from resource constrained contexts, who enrol in

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courses that require them to engage in discipline-specific digital literacy practices. There are currently two perspectives of digital literacy: (1) the autonomous approach that focuses on the mastering of digital skills and (2) the ideological approach, which acknowledges that skills are embedded within a practice and underscores the context-dependability of digital literacy (Brown, Czerniewicz, Huang, & Mayisela, 2016). A limitation of the autonomous model of literacy is that it assumes that technical skills automatically have effects on social practices (Street, 2001). Street argues that the autonomous model "disguises the cultural and ideological assumptions that underpin [literacy] and that can then be presented as though they are neutral and universal" (Street, 2001, p.7). On the contrary, the ideological model of literacy posits that literacy is a social practice (Street, 1984; 2001). Lankshear and Knobel (2008) describe literacy as a "family of practices – literacies – that include … socially evolved and patterned activities" (2008, p.56). According to this perspective, one's recognition of being literate depends on the context and literacy practices of a particular community of practice.

Social practice ideology, as adopted in this article, holds that literacy is about being able to participate in social practices and thus, a student who is capable of carrying out his/her disciplinary digital literacies is considered as being digitally literate. Thus, higher education academic disciplines serve as contexts that determine the digital literacies - the discipline-specific digital literacy practices. That is, situated practices and activities perspective has implications for the course curriculum and how academics integrate digital literacies into the curriculum. This research studies students' (from resource constrained environments) development of digital literacy when disciplinary digital literacies are integrated into the curriculum through the use of learning and assessment activities (LAAs). While previous studies have focused on student digital skills and competencies, and digital practices in well-resourced environments, there is a research gap concerning digital literacy as a social practice in resource constrained environments such as South African schools and universities. Also, there is limited research on how adults acquire digital literacies (Frawley & Dyson, 2018). This paper aims to address this gap by describing the stories of three first-year university students who are from socio-economically disadvantaged backgrounds – two of whom are the first in their immediate families to attend university; their transition from high school into university; and how they acquired discipline-specific digital literacy practices and developed digital learning capabilities at university.

The paper provides a description of the conceptualisation of digital literacy as a social practice, a review of literature on how disciplines influence student digital literacy practices, and an overview of the empirical study, seminal findings in the form of narratives of three first-year students, a discussion, key conclusion and recommendations.

DIGITAL LITERACY AND DIGITAL LITERACY PRACTICE CONCEPTUAL FRAMEWORK

The concept of digital literacy was derived by Gilster (1997) during the internet revolution to denote the cognitive ability to understand and use multimodal information. This was an attempt to appreciate the nuanced nature of digital literacy which is broader than just technical skills or "mastering [computer] keystrokes" (Gilster 1997, p.1). Gilster (1997) loosely refers to digital literacy as "literacy in the digital age" (p.31) and describes it as "the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers" (ibid). Gilster's (1997) work, similar to that of the New Literacy Studies and New Literacies Studies is rooted in Scribner and Cole's (1981) notion of 'literacy as a set of socially organized practices'.

Digital literacy in this research is premised on the understanding of literacy as a social practice. The social practice perspective is based on the notion that:

1. Digital literacy involves not a set of universal abilities (skills) but aptness in social practices grounded in the digital domain.

2. Practices associated with digital literacy are not "fixed," nor do they occur in isolation; rather, they evolve in relation to the social, cultural, economic and political changes of a given context (Brown et al., 2016).

As such, digital literacy is about students' aptness in socially evolved ways of participating in discipline-specific digitally mediated practices – the discipline-specific digital literacies (Mayisela, Hodgkinson-Williams, & Brown, 2019). Researchers in the New Literacies Studies, such as Lankshear and Knobel argue that "digital literacy can usefully be understood as digital literacies – in the plural" (2008, p.2). They claim that "approaching digital literacy from the standpoint of digital literacies can open us up to making potentially illuminating connections between literacy, learning, meaning (semantic as well as existential), and experiences of agency, efficacy, and pleasure that we might not otherwise make" (Lankshear & Knobel, 2008, p.9). This implies that digital literacies "will take diverse forms according to the many and varied social practices out of which different individuals are enabled to understand and use information and communications" (Lankshear & Knobel, 2008, p.29). By the same token, Gee explains digital literacies as "different ways of using digital tools within different sorts of sociocultural practices" (2010, p.32). In the context of this research, this means that different disciplines may use the same digital tool for different sociocultural digital literacy practices. Therefore, to be digitally literate in this context means the mastering of discipline-specific digital literacies.

As far back as 2006, Lankshear and Knobel (2006) noted that the 'new' digital literacies are generally "characterised by both the new technical stuff of digitization and the new ethos stuff of the second mindset and more specifically, a Web 2.0 orientation" (p.93). The technical stuff includes the functional use of hardware, software and applications such as creating hyperlinks, using emoticons in email, online chat space or in instant messaging, animation, uploading images and videos from a digital phone to a computer or to the Internet, to mention a few. Whereas the new ethos stuff includes literacies that are often participatory and collaborative (Lankshear & Knobel, 2006), such as creating websites, blogging, microblogging, contributing to wikis and digital media production (Mills, 2010). It is along these lines that Ng describes digital literacy in the educational context as being "a broader term that embraces technical, cognitive and social-emotional perspectives of learning with digital technologies, both online and offline" (2012:1066).

Inspired by Ng's (2015) digital literacy framework, Mayisela (2019) developed a digital literacy practices framework with the three dimensions. The technical dimension encompasses practices such as accessing and using technological devices, the internet, productivity software and applications for learning. Cognitive practices include identifying the need for information; applying one's knowledge and understanding of copyright and Creative Commons licensing so as to legally and ethically use and re-use learning resources; evaluating information; and synthesising, using and communicating information. The social-emotional dimension involves enacting responsible ways of learning with others in digital learning spaces as well as safeguarding oneself and observing netiquette. At the intersection of the technical and cognitive dimensions are practices such as individually creating and reproducing digital resources, finding online resources for studies, curating and managing them, and making informed decisions when selecting appropriate digital technologies for carrying out the task at hand. The intersection of the cognitive and social-emotional dimensions is about the collaborative creation and reproduction of digital resources, where students may work on a share task in collaborative digital spaces.

The intersection of the technical and social-emotional dimensions involves using social networks for learning purposes (Figure 1).

With the literacy practice perspective, it is important to note that the dimensions are not progressive and that students can be more capable of carrying out practices in one dimension than another. By the same token, with respect to the situatedness of practices, students may have to acquire the digital literacies related to their disciplines. For instance, Toliver (2011) and Buzzard, Crittenden,

Figure 1. Digital literacy practices framework with examples of digital literacy practices
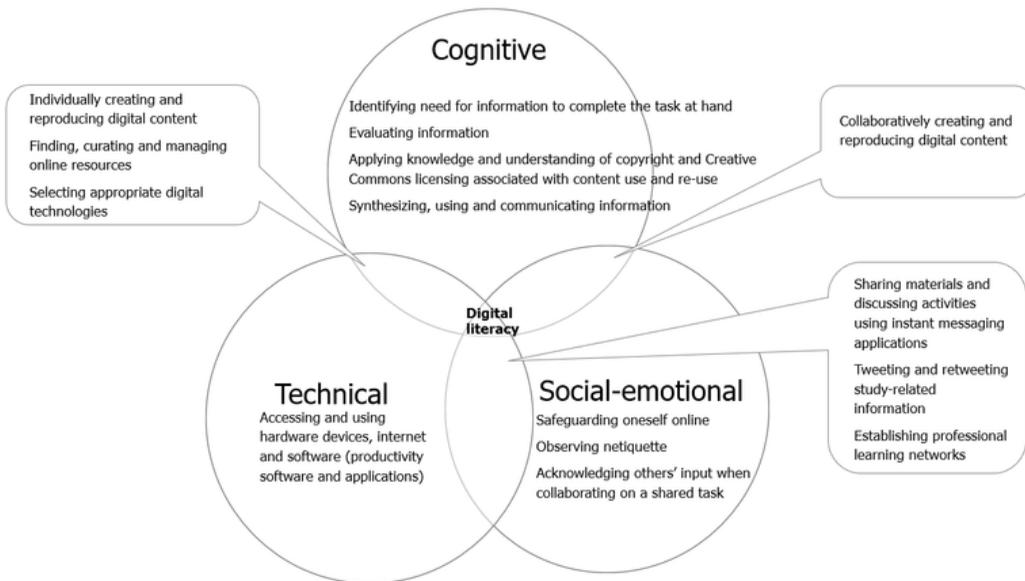
Crittenden and McCarty (2011) note how even the so called 'digital natives' acquire digital skills for learning in response to curriculum requirements. Some students go to the extent of requiring educators' support on how to use and learn with educational technologies (Buzzard et al., 2011).

In like manner Trowler (2014), one of the distinguished researchers on cultures of academic disciplines, describes how disciplines may influence students' practices:

Disciplines are reservoirs of ways of knowing which, in dynamic combination with other structural phenomena can condition behavioural practices, sets of discourses, ways of thinking, procedures, emotional responses and motivations. (2014, p.6-7)

In the same vein, a number of empirical studies have shown how disciplines may influence students' digital literacy practices. Brown and Czerniewicz (2008), who conducted research in six HEIs in South Africa, reported how the discipline-specific scaffolded learning activities and research-based e-learning activities in undergraduate and postgraduate studies respectively, influenced student use of web-based technologies (such as web searching and instant messaging). Likewise, a survey conducted with undergraduate students at UK universities revealed that disciplinary differences influenced the students' use of the internet (Selwyn, 2008), whilst a study of third year Social work and Engineering students in two UK universities showed how the nature of the disciplines influenced the way students engaged with information and communication technologies (ICTs) (Margaryan, Littlejohn and Vojt, 2011). Another study conducted by Kim, Sin and Tsai (2014) with undergraduate students in the US found that Engineering students were more likely to use Wikipedia for finding solutions when compared to Humanities students, while more Humanities students than Engineering students tended to use YouTube to get updates/news and other people's opinions.

DEVELOPING DISCIPLINE-SPECIFIC DIGITAL LITERACIES

Taking into account the evolution of digital literacy in relation to social, cultural, economic and political changes of a given context (Brown et al., 2016), we have to understand that digital literacy is not a once-off achievement or what Martin (2006, p.20) refers to as 'a threshold'.

He emphasises that:

The assertion of digital literacy for any person or group is always provisional. Digital literacy is an ongoing and dynamic process – it is not a threshold that, once achieved, guarantees familiarity with the digital for ever after. … It is dependent on the needs of the situation; when those needs change, what constitutes digital literacy for that situation may change (ibid).

Related to the above, Lankshear and Knobel (2008) note that digital literacy cannot be acquired: 1) in a linear way, and 2) in the same way by everyone. Gee's (1990; 2008) model of literacy and discourse acquisition is helpful in describing different ways in which students could acquire disciplinary digital literacies. Gee asserts that "acquisition of literacy requires exposure to models in natural, meaningful and functional setting" (2008:177). It is in this context that Ng (2012) concluded in her study that students tend to create digital content only when digital content creation activities are part of the curriculum and are assessed and graded by educators. Additionally, from a practice perspective, students were reported as having been better socialised into information literacy practices when information literacy was embedded into their first-year curriculum (Cooke, 2016). Multimedia Technology and Applications students at a community college in Hong Kong developed digital literacy skills, such as video production when digital storytelling activities were incorporated into this course's curriculum (Chan, Churchill, & Chiu, 2017).

As such, Gee suggests that acquisition of practices could take different forms:

Acquisition is a process of acquiring something subconsciously by exposure to models, a process of trial and error, and practice within social groups, without formal teaching. It happens in natural settings which are meaningful and functional in the sense that acquirers know that they need to acquire the thing they are exposed to in order to function and they in fact want to so function. (1990:169-170)

This notion of situated learning is based on Scribner and Cole who concluded in their groundbreaking 1981 study that "a type of literacy enhances quite specific skills that are practised in carrying out that literacy" (Gee, 1990:58). Chan et al. (2017) demonstrate how digital storytelling developed student engagement, reflection on deep learning, motivation, filming, video editing and story development skills. Although not in a formal education context, Frawley and Dyson (2018) also illuminate how a Community Mobile Storytelling project helped develop the adult participants' mobile literacy practices. In the context of this study, the situated learning approach suggests that courses within disciplines serve as 'natural settings' for the acquisition of digital literacies through the LAAs. In short, the LAAs foster the student development of digital literacy. The next section describes the study and methodology.

THE STUDY AND METHODOLOGY

This paper presents seminal findings in the form of narratives from three students (two from the Humanities faculty and one from the Commerce faculty) with respect to the digital literacies they developed, as well as how they developed these in response to curriculum requirements. Due to the nature of the disciplines, these two courses had different LAAs. For instance, the Commerce course's LAAs included the collaborative creation of a business concept document and an electronic business website, while the Humanities course activities required students to primarily write solely authored essays.

The Commerce activity required students to engage in technical operation of tools such as Google documents; techno-cognitive practices including making choices about the appropriate software for developing a sitemap; cognitive practices, such as researching and synthesising information; and cognitive and social-emotional practices, such as collaboratively creating content (contributing

and communicating information in a Google document). Whereas, for this particular year when the research was conducted, there were no collaborative activities that required students to implement social-emotional practices in the Humanities course. For the essay writing activities, students were required to engage in technical practices, such as typing in and formatting a Word document; techno-cognitive practices, such as using web tools to search for information; and cognitive practices such as researching, synthesising information, and assimilating and communicating information – paraphrasing, developing an argument and referencing.

This qualitative study used an interview to elicit data from a purposive sample of three first-year students from the two extended degree programme courses. Qualitative data is used to address the following research questions:

1. What digital literacies did students acquire through engaging in learning and assessment activities within their courses?
2. In what ways did students acquire digital literacies for their learning and assessment activities?

Before any data was collected, ethical clearance was sought from the faculty ethics committee and permission to access the students was subsequently granted by the university's Department of Student Affairs. The students were purposively selected because firstly, they were enrolled in courses with lecturers who aimed at developing their students' digital literacies through LAAs and secondly, they had differentiated technology access and digital competence prior to enrolling for university – as suggested by the questionnaire that was administered to students in the two courses at the beginning of the first semester in 2016. According to Maxwell (2008), deliberate selection of an appropriate setting or people is important as these "can provide information that cannot be gotten as well from other choices" (p.235).

The author implemented deductive and inductive analysis (Danermark et al., 2002). With respect to deductive analysis, the pre-set themes were technology access and digital literacy practices (use of technology for studies and use of technology for leisure) while in high school, as well as technology access at university and digital literacy practices within the two courses. Furthermore, the digital literacy practices framework was used to categorise the literacies that were acquired by the students, into dimensions. Inductive themes of the ways in which the participants acquired the digital literacies were subsequently generated.

The author uses narratives to tell the students' stories which draw together their high school and university digital literacy practices and how they have acquired the discipline-specific digital literacy practices. According to Esin, Fathi, and Squire (2014), narratives is "a tool to analyse participants' experiences of a wide range of social issues such as social inequalities, … the narratives themselves are, in such [constructionist] accounts, social phenomena" (2014:204). A strength of narrative analysis is that researchers can use the constructivist approach together with thematic narratives (Ensin et al., 2014), as it is done in this study.

FINDINGS

The findings are presented in the order of the three participants' level of technology access and use prior university.

Participant 1: Humanities Student

Thandeka is a female student who is between the ages of 19 and 22. She is originally from the Eastern Cape (one of the largely rural provinces in South Africa) but when she is in Cape Town, she lives with her brother who had relocated to Cape Town for work. Thandeka made very limited use of digital technology for her learning activities (as that was not a requirement at school) and leisure.

Technology Access and Digital Literacy Practices at High School

Thandeka is the first person in her immediate family to attend university and no-one in her household used a computer at home (only at work) whilst she was in high school. She neither owned nor used a computer before enrolling for university. At her high school, only the computer application technology (CAT) students were allowed to use the school computers. She first used a smartphone (which was supposedly, not hers) at the age of 15 and she used it to search for information on the Internet for her studies and share files with her friends using bluetooth technology.

Technology Access at University

During her first year of study at university, Thandeka relied on the university computers and wi-fi for her studies and only owned a smartphone, as she excitedly says, "I go to the lab for everything. I don't have a laptop. My parents saved money to buy me a smartphone so, I am starting to learn how to use WhatsApp, Facebook". Thandeka missed out on receiving a tablet[1] because, she did not have funds to travel from her brother's place to university on a daily basis before classes commenced and/or moving into the university residences. Tablets were issued to the faculty students who did not have personal mobile devices before classes commenced.

Digital Literacy Practices Within the Course

During the first semester of her first year, Thandeka realised that she had to acquire digital literacy skills and practices – in the technical and cognitive dimensions – which were essential for learning in her course. For instance, since she had never used a computer before, she had to acquire digital skills. She reported that she was taught by a senior student (who is a lab assistant at her residence) how to open and respond to e-mail attachments and format (such as inserting page numbers) a Word document specifically, for her essay writing, but also for learning, in general. Interestingly, Thandeka also identified a senior student, within the same programme in which she was enrolled, during the faculty induction sessions and asked him to mentor her. In terms of the cognitive dimension, this senior student took Thandeka through a scaffolded essay writing process:

Thandeka: I send mine for marking; it is marked by someone else. … I write my essay, … then I send it to a more matured student, who's doing 4ᵗʰ year … and then he would pick it up and help me. … He gives me instructions on the phone on how to download his feedback … "press this…save as Microsoft Word…" [she explains the whole process]

Thandeka was also excited that she had learnt to insert in-text citations and develop a reference list for her essays after she had been guided by the senior student on such:

Thandeka: I didn't know how to reference . . . I put in dots and all that stuff, and so the senior student marking on the other side, highlights the thing and says: "Reference using Harvard".
Researcher: Were you aware that you are supposed to use the Harvard referencing style?
Thandeka: Yes, I chose it instead of the others, . . . like APA.
Researcher: Ohh, you just didn't get the structure right?
Thandeka: Yes . . . I thought you just 'gooi' [Afrikaans word meaning 'throw'] everything in there.
Researcher: How did you know that you were supposed to reference using Harvard style?
Thandeka: I was told in class . . . I wrote everything and then the references . . . which is very, very wrong which is why my first essay was so bad . . . When returned by the lecturer, it was looking like a mess. I thought that you write everything, full stop, done, conclusion and then list the references.
Researcher: Ohh, you didn't use in-text citations?
Thandeka: Yes, that was the problem

The above illustrates that she acquired these practices in response to her LAA requirements. Furthermore, Thandeka never checked for the appropriateness of online information because she only used the resources in the course reader, and it is evident in the above excerpt that she was not yet confident with in-text citations and referencing. Also, in terms of synthesising information, she preferred using the summaries she had made in class, for her essays as she was not yet confident with circumventing plagiarism:

Thandeka: I heard about Google Scholar … there are articles, and they have references … In very rare occasions, I read articles on Google scholar…they are relevant
Researcher: Then you would cite and reference content from there?
Thandeka: I don't take any content from there… I rather play safe…I don't want to be accused of plagiarising.

Thandeka also had no knowledge of copyright and Creative Commons licensing. The above suggests that Thandeka still had to further develop digital literacies in the cognitive dimension.

Participant 2: Humanities Student

Mary is a female student from Cape Town who is between the ages of 19 and 22. Mary had basic technical skills by the time she enrolled for university.

Technology Access and Digital Literacy Practices at High School

Mary is the first person in her immediate family to attend university and no-one in her household used a computer either at home or work whilst she was in high school. However, she had access to a desktop computer at home, but there was no internet connectivity. Mary primarily used her computer to type her assignments on word processing software and would get assistance from her aunt who must have lived nearby:

I had a physical computer at home … and my aunt used to say: "If you want me to print anything, just type it on the computer and put it on a flash then I'll print it for you because I have a computer at home …"….I was just like, I prefer writing it …I prefer writing it … because I had one bad experience when in grade seven, we had an assignment and Miss [the teacher] made it compulsory that we type the 1600 words essay, for Business Studies.

Similar to Thandeka's high school, only CAT students were allowed to use the school computers and these CAT students paid a lab fee. While in matric (final year of high school), Mary lived with her aunt and when it was compulsory for her to e-mail her teachers an assignment, she would type the assignment on her aunt's computer and then her aunt would e-mail it for her as her aunt used a 3G/4G internet connection. However, Mary expressed that her aunt did not have the time to teach her how to e-mail:

I used to type on my aunt's computer and she used to say: "Leave it just like that, and I will do everything for you". … Yes, but hers got spoilt then I used mine, which was also a desktop. She used to say: "Just type and leave everything like that; I will e-mail it to myself". There wasn't time for her to teach me how to e-mail. So, I would just type and save it there. She used to bind it too.

Mary also owned a smartphone at the age of 13 and she used it for social networking such as sharing files with friends using bluetooth technology, forming groups on WhatsApp where she would share short messages, images, videos, etc., capturing and cropping images, and capturing and editing videos.

Technology Access at University

During her first year of study at university, Mary owned a laptop that she kept at home because she felt it was unsafe to travel with, as it was too big to fit into her bag, and a tablet that she used on campus, for her studies. She accessed the university's wi-fi on campus and at the residences, but when she went home during some weekends, she would use a 3G/4G internet connection.

Digital Literacy Practices Within the Course

When her tutor made it compulsory that their tutorial group sends him an essay draft before Monday, meaning that they could send the draft over the weekend, at the latest, Mary was forced to learn how to e-mail her tutor. She approached her peers and senior students:

Mary: Then when I came here, everything changed. I asked, "Am I the only one who doesn't know how to send an e-mail because everyone of you is using e-mail like it's nothing?" … And so, I started going to tutorial sessions.
Researcher: With the Tech Buddies or Digital literacy tutors?
Mary: Yes, and then my friends also started showing me what to do and how to do it. … I am excited because I can e-mail now
Researcher: You can also attach files?
Mary: Yes.

The above excerpt demonstrates that Mary acquired digital literacy practices in the technical dimension because the practices were required for learning in her courses. With respect to the cognitive dimension, Mary sometimes checked the appropriateness of the resources she used for her studies. She had some knowledge about copyright licensing but none on Creative Commons and was quite aware about plagiarism, which she always avoided. She was quite confident with paraphrasing and constructing arguments. An important aspect for her LAAs that she was still struggling with was referencing. She reported that she searched for information on Google, Wikipedia, YouTube, Social network (e.g., Twitter, Facebook, etc.), but had to forfeit it because she could not reference the resources from which she got the information. She opted to using only those that were provided in the course reader because the references were drawn up for them already.

Participant 3: Commerce Student

The Commerce student, Thando is a female student between the ages of 19 and 22. She is also from the Eastern Cape. Thando was digitally competent as compared to the other two students.

Technology Access and Digital Literacy Practices at High School

Thando is not the first person in her immediate family to attend university as both of her parents have done so. Someone in her household used a computer both at home and work whilst she was in high school. She indicated that she had access to a computer and internet connectivity both at home and school and had started using a computer at the age of seven, meaning that her family could have been sharing a computer or computers in their household. In terms of use of technology for her studies while in high school, Thando searched for information on the internet for her studies and submitted her assignments by e-mail. She started using a smartphone at the age of 13, which she used for social networking, such as sharing files with friends using bluetooth technology, forming groups on WhatsApp where she would share short messages, images, videos, etc., capturing and cropping images, capturing and editing videos and sharing applications with friends.

Technology Access at University

During her first year of study at university, Thando owned a laptop that she used for her studies as well as a smartphone. These devices connected to the university wi-fi on campus and at the residence, where she spent the largest part of the year, and at home she used 3G/4G connection.

Digital Literacy Practices Within the Course

When she was required to collaboratively develop a business concept document in her course, she self-taught herself technical skills through searching on Google 'how to do something'. For instance, she searched how to create a Google document, while one of her group members consulted a peer in the same course:

. . . I went onto the internet and just Googled how to use it, and then [Student A] asked his friend who is also in this course [Commerce] . . . and he told him how to create it.

Thando further reported that she Googled how to add a shape to a SmartArt graphic for her business site map. She said:

Thando: Hierarchy, yes, yes, yes. I didn't know how to use it; so, I had to go onto Google and then Google how to do it.
Researcher: Hmm
Thando: And then I was able. I didn't know how to add the different elements because the one that they give you [Word SmartArt], . . . is a standard one and then if you want to, you can add on, and then I didn't know how to find the place to add on and so I had to Google it and then I was able to add a shape.

These excerpts are an indication that some students find it easy to search Google for whatever technical skills (how to operate something) they need to acquire for a task at hand, instead of consulting other people. With respect to the cognitive dimension, Thando reported that she always checked the appropriateness of the information she found on Google, Wikipedia, YouTube, Social network (e.g. Twitter, Facebook, etc), and used for her studies. She had some knowledge about copyright licensing but none on Creative Commons. An important digital literacy practice for her LAA was collaboratively creating digital content (intersection of cognitive and social-emotional dimensions). This implies that she had to contribute meaningfully to the crowdsourced content, observe netiquette and acknowledge others' input as they collaborated on the shared task. Interestingly, her group also made use of a WhatsApp group to supplement the Google document. She said:

Thando: … but we still had a WhatsApp group that we created so everyone could still discuss what we gonna say for question 3
Researcher: Who formed the WhatsApp group?
I: I did
…
Researcher: Oh … what else did you share on WhatsApp?
Thando: Just basically times when we were going to meet and also discussing the different questions.

Her group members were comfortable with using WhatsApp and she reported that she had their mobile phone numbers.

Table 1 summarises the digital literacies that the students acquired and the ways in which these were acquired.

Table 1. Participants' acquisition of digital literacies

Participant	Digital literacies acquired	Ways in which digital literacies were acquired
Mary	Technical dimension: sending emails with attachments	Scaffolding from peers and senior students
Thandeka	Technical dimension: sending email; opening and responding to e-mail attachments and formatting word processing documents. Cognitive dimension: Synthesizing, using, and communicating information. Inserting in-text citations and developing a reference list for essays	Scaffolding from senior students
Thando	Technical dimension: Creating a Google document for collaborating; adding a shape to a SmartArt graphic for a business site map	Self-teaching

DISCUSSION

The three students made very limited or no use of digital technology for their learning activities whilst in high school. This implies that these first-year students had minimal or no experience of learning with technology when they enrolled at university. In fact, this is exacerbated by the limited availability of ICT infrastructure in schools and households (which is evident in these stories), which is a recognised contextual issue. In the South African context, students' differentiated technology access highlights the socio-economic inequalities that exist amongst them. For instance, according to the 2019 Statistics South Africa household survey, only 22,7% (from 21,4% in 2016) of the South African population owned one or more computers with these households being mostly in metropolitan and urban areas. And only over half of the South Africa population (57. 5 percent) has internet access (Internet World Stats, 2021). These inequalities were also foregrounded during ERT, where the medium and high-risk universities could not continue with teaching as most of their students did not have the essential ICT infrastructure for learning at home.

The findings reveal that students are most likely to engage in digital literacy practices in response to the LAAs in their course curricula. The influence of disciplines on student digital literacy practices was reported elsewhere (Brown & Czerniewicz, 2008; Margaryan et al., 2011; Kim et al., 2014). The findings demonstrate that there were a range of intertwined practices that mediated essay construction or writing for the Humanities students and collaborative creation of a business concept document for the Commerce students. The key finding is that LAAs drive the desire for students' acquisition of digital literacies. Two of the Humanities students acquired the skills and practices through scaffolding from senior students and peers, while the Commerce student preferred self-teaching. Although their research was not in a formal education context, Frawley and Dyson (2018) noted that literacies "may be informally learnt, self-taught and formed outside the classroom" (p.54).

Clearly, transition from high school into university affects some students more than others. On one hand, Thando appropriated her social networking skills (use of WhatsApp groups) for learning. It has been reported elsewhere (Mayisela, 2019) that students seem to intuitively transfer their digital literacy practices in the technical and social-emotional dimension, from their personal contexts to academic contexts. In the same vein, there has been a pivot in use of WhatsApp during ERT and subsequently, physically distanced learning and this has elevated in interest in theorising the use of WhatsApp for learning (for instance, see Nyembe & Howard, 2021). On the other hand, Thandeka who is a first-generation university student with no-one in her immediate family to help her with her university studies mobilises human resources and makes decisions about who could assist her

regarding her writing and technical needs. Her decision to approach a senior student in the same programme, who could apprentice her into the literacies and discourse of the programme substantiates the nuances of literacies and highlights the value of social learning of literacies as opposed to formal instruction. In short, when students are required to fulfil LAAs that are to be assessed and graded by educators, they acquire the essential skills and practices for the task at hand. That is, when LAAs which foster the acquisition of digital literacies are part of the curriculum, students can acquire the respective literacies in different ways, implying that there is no need for overt instruction on digital skills and practices as with this approach, these tend to be isolated from the context of practice. Street (1984) noted a similar challenge with the decontextualised literacy programmes that were offered by the so-called literate states to people who were considered non-literate in the UK, USA and Africa.

CONCLUSION

This paper foregrounds the conceptualisation of digital literacy as a social practice. The social practice notion holds that students develop digital literacy through participating in discipline-specific digital literacies. In this paper, the course is presented as fertile ground, with the LAAs fostering the development of student digital literacy. Moving from the premise that skills are embedded within a practice, it is clear in this study that students acquire digital literacy skills and practices in different ways. Some of these skills may be relevant for learning, in general. It is evident from this research and the ERT era that the notion of digital natives does not always hold in developing contexts such as South Africa. Hence, it would be appropriate for lecturers to have clear intentionality for developing student digital literacy. This research provides insight for lecturers in developing contexts on how they could integrate digital literacies into course curricula as a means of building students' capacity on discipline-specific digital literacies. This may be a daunting task for lecturers and so universities require a deliberate strategy for collaboration between the stakeholders who may be involved, such as library staff and writing centre staff in the integration of digital literacies for learning into the curriculum.

CONFLICT OF INTEREST

FUNDING INFORMATION

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ENDNOTES

[1] Students in this course were surveyed for mobile device ownership and those who did not have any devices were provided with tablets.

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