USING DIGITAL TECHNOLOGIES TO ENHANCE FIRST-YEAR STUDENTS’ LEARNING IN A COMMUNICATION AND ACADEMIC LITERACY SKILLS COURSE AT THE UNIVERSITY OF BOTSWANA

by

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Abstract

Advances in technology have influenced the ways in which students read, write, and communicate. The advent of the Internet and other digital technologies in the classroom has encouraged educators to supplement traditional pedagogies with those that integrate digital technologies in order to cater to students’ academic and professional needs—needs that include the ability to navigate large repositories of multimodal information on the Internet to locate, evaluate, organize, and use relevant information. Further, the emergence of new technologies demands that educators explore their potential for new ways of reading and writing as well as for fostering participatory and collaborative learning in classroom instruction.

This case study aimed to investigate University of Botswana first-year students’ use of digital technologies to enhance learning in the Communication and Academic Literacy Skills (COM) course. A qualitative approach—using a questionnaire, semi-structured interviews, observations, and document reviews—was taken to determine the technologies that were available for student use at the university, how the digital technologies were used to enhance student learning, whether the use of digital technologies contributed to the development of students’ academic literacies, and lecturer perceptions of students’ use of digital technologies to enhance their learning. Data from 63 students and two lecturers, purposively sampled, were analyzed for emergent themes, revealing generally that (a), although students were exposed to a variety of digital technologies the university provided, they did not use them to enhance their learning due to a lack of digital literacy skills and (b), although participants acknowledged the potential of using digital technologies for effective learning and teaching, resource challenges—such as a lack of working computers, unreliable
Internet connections, and a lack of digital skills—impacted the integration of technology into the COM course. With new and emerging technologies rapidly increasing, this study highlights (a) the need for exploration into the use of these new digital technologies for teaching and learning, (b) professional development for lecturers on the effective integration of these technologies into instruction, and (c) policy formation and implementation regarding the use of these technologies for the promotion of 21st-century skills.
Lay Summary

New technology has affected how students learn and how they should be taught. This research looks at first-year University of Botswana students and lecturers to find out what digital technologies students used, how they used these technologies, whether they valued how the digital technologies helped them in their learning, and what lecturers thought about how their students used technology for learning. Using a questionnaire, interviews, observations, and documents, I found that, although the University of Botswana had provided many technological resources for students and faculty, students did not use the tools mainly because they lacked the skills and adequate Internet connections, and lecturers did not use them to teach because they lacked training. I recommended that the university ensure that the Internet and computers were made available to help students learn technological skills and that the university also train staff to use technology in their teaching.
Preface

This dissertation is the intellectual property of its author, Brigid Goitse Conteh. The research project was reviewed and approved by the University of British Columbia’s Research Ethics Board (certificate H13-01695), under the original title of “Integrating Digital Literacies into the Year 1 Communications and Academic Literacy Course at the University of Botswana.”
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Dedication

In loving memory of my mother, Felicitas Selebetswe Matenge, and my father, Robert Tamorotsi Matenge. Thank you; my love for you both can never be quantified. To my beloved family and friends, your support, encouragement, and constant love have sustained me throughout my journey.
Chapter 1: Introduction

1.1 Introduction

The prevalence of the Internet and other digital technologies in students’ lives has influenced what it means to be literate. Literacy is no longer static; it is now viewed as a continuous process of change in the way students communicate and learn (Coiro, Knobel, Lankshear, & Leu, 2008). Although the current generation of students entering universities is perceived to have grown up with access to computers and the Internet from a young age and is generally viewed as “native speakers of digital language of computers, video games and the Internet” (Prensky, 2001), the constant changes to and emergence of new technologies demand that students be continually literate in the use of these new technologies.

With the emergence of new technologies such as search engines, webpages, e-mail, instant-messaging blogs, podcasts, e-books, wikis, Nings, and YouTube (International Reading Association, 2005)—and, more recently, Facebook, FaceTime, Hangouts, Skype, Google Drive, and WhatsApp—students’ educational needs are also changing, requiring that students acquire new literacies to successfully exploit the potentials of these new technologies, which are regarded as effective for facilitating learning in academic contexts. At the same time, university lecturers are required to rethink the curriculum, as well as pedagogies, that will meet students’ learning needs in these technology-enriched environments.

This chapter first introduces the context, background, rationale, and purpose of the study. Next, I present the theoretical frameworks used in the study, followed by the
significance of the study. The chapter concludes with an overview of the remaining thesis chapters.

1.2 Botswana Educational Context

The economy of Botswana has grown rapidly since its independence in 1966, largely due to the development of the mineral sector (e.g., diamonds and copper-nickel). The government invested heavily in education and training in the first three decades, resulting in an increase in the literacy rate from below 20% at independence to 88% in 2014 (Statistics Botswana, 2015). In Botswana, a 10-year basic education is offered to all learners leading to a junior secondary certificate. Depending on students’ performance, they are then admitted to senior secondary schools to complete their Botswana General Certificate of Secondary Education (BGCSE), which qualifies them for tertiary education. Initially, the University of Botswana was the only tertiary-education institution responsible for providing human resources development in the country, and a number of concerns were raised—among them, that the government was investing heavily in education, but there were low levels of access to tertiary education. Additionally, the quality and relevance of courses to the job market were also low, resulting in high levels of unemployment for graduates. Arguments were raised about the decline in the mineral sector, especially exports of diamonds that were the main source of income for Botswana; this necessitated the government’s investment in initiatives that would replace diamonds and other minerals with human skills and position the country as a knowledge-based economy. Therefore, investment in tertiary education was considered a sound initiative for diversifying the economy and a critical driver in developing an “educated and informed nation” (Presidential Task Group, 1997), one of the pillars which encapsulates the long-term (i.e., 50 years after independence) aspirations of the country.
Improvements to the relevance, quality, and access to education lie at the core of the vision for the future (International Bureau of Education, 2010).

A call for reforms in tertiary education started in the 1990s, leading to a number of policies, such as the Revised National Policy on Education (RNPE; Republic of Botswana, 1994), which was drafted to guide program activities of the Ministry of Education in terms of curriculum reforms and ongoing improvements in the education system. One of the key recommendations of the RNPE was to establish the Tertiary Education Council (TEC), which would then coordinate the development of tertiary education. The TEC was then launched in 2003 to provide direction for the transformation and restructuring of the tertiary-education sector and the institutional landscape (Molutsi, 2009; International Bureau of Education, 2010). Further, the TEC’s role was to ensure that, by 2026, more Botswanans aged 18-24 years would have access to a quality tertiary education that would be responsive to every element of their personal well-being, social progress, and economic development (Mpoeleng, 2016). Like most countries in Sub-Saharan Africa and around the world, the challenge for Botswana was how to reconcile pressures and changes related to increased post-secondary enrolments and limited funding support in a world of depleting natural resources, with quality education that is nationally and globally relevant (Molutsi, 2009; Tabulawa, 2007; Tabulawa, Polelo, & Silas, 2013). Jointly with the Ministry of Education, the TEC was expected to implement the TEC policy—“towards a knowledge society”—which was adopted in 2008 with the objectives to increase access to tertiary education, improve quality, and ensure the relevance of programs of study. More institutions of higher learning, both public and privately funded, were registered, resulting in an increase in the number of students enrolled in tertiary-education institutions. Enrolment increased from
31,129 in the 2007–2008 financial year to 60,583 in the 2014–2015 financial year, and, out of the 60,583 students enrolled in tertiary institutions, private institutions enrolled 42.6% of them (Human Resource Development Council, 2015).

1.2.1 ICT in Education in Botswana

ICT use in education is at a particularly dynamic stage in Africa, with new developments and announcements happening on a daily basis somewhere on the continent (Isaacs, 2007). In Botswana, the government has committed financial resources to the improvement of connectivity and the promotion of the educational use of ICTs in all levels of education. Through various policy frameworks (e.g., National ICT Policy in 2007 [a.k.a. Maitlamo; Republic of Botswana, 2007], RNPE in 1997 [Republic of Botswana, 1994], TEC in 2005 [Tertiary Education Council, 2005], Vision 2016 [Presidential Task Group, 1997]), the government has acknowledged the role of ICTs in education and has committed to the adoption of ICTs in order to develop learners that are self-reliant and marketable in Botswana and globally. For instance, the National ICT Policy makes a number of recommendations for educational programs and projects that would need to be carried out in order to successfully implement ICT across all levels of education in Botswana (Republic of Botswana, 2007). Successful implementation would involve ensuring that essential ICT infrastructure components—electricity, computers and network services, telecommunication services, Internet connectivity, and technical support, for example—are provided to educational institutions in the country. This is all in line with the fact that, in order for Botswana to achieve its goal of a “knowledge-based society,” as outlined in Vision 2016 (Presidential Task Group, 1997), students would need to be provided with greater access to
schoolroom computers in order to facilitate skills development and help prepare them for life and work in the digital economy.

Further, the TEC policy highlights the role that ICTs play in developing a strong tertiary-education sector that would produce skills that would become the basis for economic diversification and national development (Molutsi, 2009). Extending policies beyond 2016, the Government of Botswana recently adopted an Education and Training Sector Strategic Plan (ETSSP) 2015–2020, a five-year strategic plan that emphasizes an alignment of all education interventions with skills and labor-force needs. Together, these policies emphasize the use of ICTs in learning and teaching, which the Government of Botswana considers to be central in facilitating skills development and preparation (of students) for life and work in the digital economy.

While government efforts in developing policy frameworks that would encourage the integration of technologies in education were noticeable and appreciated, studies (e.g., International Reading Association, 2005; Mutula & Mutula, 2007) observed that the use of ICTs for learning and teaching in secondary schools was very low. These studies noted that challenges such as lack of adequate access to computers; lack of connectivity to the Internet; student-computer ratio; constant equipment malfunctions; inappropriate software; and teachers’ lack of skills, motivation, and confidence in the use of technologies were negatively affecting students’ preparation for work in a knowledge-based economy, especially those students admitted to tertiary institutions. It is interesting to note that the same challenges that researchers noted over a decade ago are reported in recent studies. For instance, Kgalemang, Leteane, Moakofhi, Pholele, and Phiri (2015)—who investigated the usage, challenges, and perceptions of ICT by teachers in junior secondary schools in Botswana—as well as a study
by the Botswana IFAP Committee—entitled *ICT Literacy Policy - Botswana* (2016)—revealed a lack of ICT integration in support of learning despite teachers’ understanding of the benefits of ICT in education, possession of basic ICT skills, and access to computers and computer laboratories in the schools. Further, the same challenges that were faced by teachers in schools—slow to non-existent Internet speeds, high student-computer ratios, obsolete computers in schools, un-serviced computers, teachers’ lack of confidence in the use of ICTs for learning and teaching, and the lack of technical support—still exist, discouraging teachers from using ICTs to support learning. These results suggest that students’ ill preparation in the use of digital technologies while at secondary schools may impact their use of digital technologies at university and, ultimately, their academic and professional performance.

1.2.2 Use of ICTs at the University of Botswana

The commitment by the University of Botswana to use ICTs for innovative teaching, learning, and support is articulated in the university’s strategic plan, *The University of Botswana Strategic Plan to 2016 and Beyond* (University of Botswana, 2008c), launched in 2008, which identified a vision for the university “to be a leading academic center of excellence in Africa and the world” (p. 5). The university realized that, to achieve this vision, learning and teaching would need to be anchored in the use of ICTs (University of Botswana, 2008c).

Given the demand for ICT use in higher education around the world, in 2001, the University of Botswana launched e-learning, with the aim, among others, to increase the quality of learning and the success rate of students; create and support new research opportunities; alleviate increasing administrative and teaching pressures on academic staff;
and support academic freedom and freedom of speech through free information flows, making teaching more rewarding and exciting for academics (Uys, Nleya, & Molelu, 2004). Further, an observation that a different kind of student was emerging (i.e., the iPod generation), with greater computer literacy and different kinds of expectations from the university experience (University of Botswana, 2008a), also necessitated the development of the university’s technological infrastructure to support the learning and teaching process—development such as the acquisition of learning management systems (e.g., Blackboard and Moodle), campus-wide wireless coverage, student open access, and teaching computer labs. In addition, the university’s Learning and Teaching Policy was drawn to emphasize the need for students to be exposed to flexible, technology-enhanced, and innovative learning and teaching strategies that would make their learning experience engaging and relevant. The Educational Technology Unit is, therefore, required to organize and facilitate professional workshops on online course design and assessment to support lecturers in the use of digital technologies. The recognition that the world is reshaped by scientific and technological innovations increases the expectation for university lecturers to emphasize the use of digital technologies for delivery and information resources in order to meet the needs of the students (University of Botswana, 2008c).

The perceptions of university lecturers are that all secondary schools in Botswana have fully equipped computer labs; therefore, students joining the university are assumed to have acquired ICT competencies sometime during their high-school career, enabling them to function fully at the university. According to Ogwu and Ogwu (2012), when students enter the university, they are expected to possess various computer skills for research, library searches, presentations, collaborative learning, interactions with supervisors, assignments,
and a host of other tasks. However, these expectations are problematic because a number of studies that examined ICT knowledge and skills proficiency among first-year undergraduate students at the University of Botswana (e.g., Eyitayo & Eyitayo, 2005; Lumande & Fidzani, 2008; Ogwu & Ogwu, 2012) revealed that the majority of first-year students lacked adequate skills required for academic success. Students had limited to no prior knowledge about the use of ICTs when entering the university. Furthermore, students’ confidence and proficiency levels in various ICT skills—computer operations, e-mail, Internet, Microsoft (MS) Word, MS Excel, and MS PowerPoint, for example—have remained relatively low, although some students displayed confidence in basic MS Word, basic computer operations, and e-mail, which are the basis for ICT knowledge and always in use at the university. These findings about first-year undergraduate university students corroborate findings from studies of ICT usage in secondary schools in Botswana that ICTs are not used in most subjects to support learning, suggesting that students entering the university do not have the required digital literacies to function adequately at the university (Mutula & Mutula, 2007). This research on secondary-school ICT usage may also indicate challenges that first-year university students might face in the usage of digital technologies for learning and teaching. It is critical for lecturers to understand that students have not been exposed to the use of ICTs in secondary school; hence, they must support students in the use of these technologies to ensure that students acquire literacies required for academic and professional success.

1.3 Rationale for the Present Study

As students transition from high schools in Botswana and adapt to the new university learning environment, the University of Botswana offers all first-year students the *Communication and Academic Literacy Skills* course, which aims to support students’
development of the academic literacies they need to effectively read, write, speak, and listen in various contexts within and across academic disciplines. In addition, with the proliferation of the Internet and other digital technologies in students’ lives and learning spaces, what they need to learn is constantly changing, hence the demand for the use of ICTs for learning and teaching in higher education globally. Recognizing the need for developing students who possess 21st-century skills that are relevant in the workplace, the University of Botswana encouraged lecturers to use technology-enhanced and innovative learning and teaching strategies that would make students’ learning experiences engaging and relevant (University of Botswana, 2008b). The university then put in place technological infrastructure, such as learning management systems, technology-enhanced classrooms, computer-teaching laboratories, and campus-wide wireless Internet access, that would support students in the learning process.

With all of these in place, all first-year students taking the Communication and Academic Literacy Skills course are expected to use digital technologies and tools that will enable them to access, use, interact with, and navigate digital texts (e.g., websites, hyperlinks, online databases, and e-books). These digital technologies are also viewed as important in providing students with new opportunities for developing multimodal literacies where multiple modes such as image, gesture, music, and spoken and written language are combined to make meaning; hence, it is essential for students to know how these multiple modes work together to convey information (The New London Group, 1996). Furthermore, unlike conventional online practices that emphasize individual publishing and consumption, new technologies, such as Facebook, blogs, discussion boards, and other social networking
sites, afford students spaces to actively participate and collaboratively engage in the production of knowledge (Lave & Wenger, 1991; Mills, 2010).

The changes in students’ learning spaces brought about by the use of new technologies challenge conventional literacy practices, demanding that lecturers rethink pedagogies that supplement the traditional literacies, with approaches that extend literacy pedagogies from one-dimensional, paper-text representations to multiliterate, multimodal representations that are crucial in equipping students with the relevant literacies necessary for participation in academic and professional contexts. These pedagogical approaches should also create learning and teaching contexts that afford students opportunities to access and use information from a variety of sources to create meaning (Cope & Kalantzis, 2009; The New London Group, 1996).

1.4 Purpose of the Present Study

In this study, I explored the use of digital technologies and texts in the teaching and learning in the Communication and Academic Literacy Skills course at the University of Botswana. The focus of the study was to establish whether—and, if so, how—the use of ICTs in the Year One Communication and Academic Literacy Skills course at the University of Botswana supports the development of students’ academic literacies. The following research questions guided the study:

1. What technologies are available to first-year students taking the Communication and Academic Literacy Skills course at the University of Botswana?
2. How do first-year students use the digital technologies available to them to enhance their academic literacies?
3. What are first-year students’ perceptions about their use of digital technologies in learning?
4. What contributions do digital technologies make to the development of students’ academic literacies?
5. What are lecturers’ perceptions about the use of digital technologies to enhance students’ academic literacies?

1.5 Theoretical Frameworks

This study was grounded in the New Literacy Studies (NLS) tradition which views literacy as social practice, a conception that has shifted from viewing literacy as the ability to read and write to an understanding that (a) contexts, learning environments, social interaction, cultural practices, and cultural tools inform and shape reading and writing (Gee, 1990; Street, 1995) and (b) includes a range of technical platforms, modalities, and symbol systems (Hull & Moje, 2012; The New London Group, 1996). Lankshear and Knobel (2007) added that literacy is not only a matter of knowing how to read and write a particular kind of script; rather, it is also a matter of applying this knowledge for specific purposes in specific contexts of use. Gee (2009) posited that “[p]eople do not just read and write in general. They read and write specific sorts of texts in specific ways. And these ways are determined by the values and practices of different social and cultural groups” (p. 3). He referred to this as “Discourse” with a capital “d.” Discourses (with a capital “d”) are more than just language; they are “ways of being in the world, or forms of life which integrate words, acts, values, beliefs, attitudes, social identities, as well as gestures, glances, body positions and clothes,” whereas “discourses” (with a small “d”) are “stretches of language that make sense,
like conversations, stories, reports, arguments, essays” (Gee, 1990, p. 142); “discourse” is part of “Discourse.”

Grounding my research within NLS acknowledged the view that literacy must be considered to be more than a neutral set of reading and writing skills, and that it varies with social contexts, cultural norms, and discourses (Gee, 1990; Street, 2003). Notions of literacy practices (Street, 1984, 2003) and literacy events and text (Heath, 1982) are central to literacy as social practice. Literacy practices include the construction of knowledge, values, attitudes, beliefs, and feelings associated with the reading and writing of particular texts within a given cultural domain (such as school, work, and community). Literacy practices are not fixed or stable sets of rules owned by individuals; they are better understood as existing in the relationship between people, within groups and communities (Barton & Hamilton, 2000), and within a given cultural domain. Consequently, there are multiple literacy practices. Literacy practices involve conceptualizations, social relationships, cultural beliefs, values, attitudes, and feelings that participants bring to a literacy event—literacy events being recurrent and routine activities that are observable occurrences where it is possible, for instance, to document actual uses of reading and/or writing in sociocultural contexts (Street, 2003). An example of a literacy event might be writing on someone’s Facebook wall about an event that happened and getting immediate feedback from friends and family; part of the composition process for a text draws on the meaning-maker’s experience of literacy practices (Pahl & Rowsell, 2005). Reading and writing in the context of literacy events involves more than decoding words or sentences; individuals must interpret and understand the text involved in the event.
Lastly, text—which is any kind of entity from which an individual makes meaning—is continuously changing as a result of the rapidly changing nature of literacy and new literacies (O’Brien & Scharber, 2008). Curricula, textbooks, tests, and classroom practices regulate and determine what counts as literacy and what kind of literacy practices are valued in society (Luke, 1997), which means that all uses of text are shaped in and by their social contexts. It is, therefore, important that teaching and learning take account of the variations in students’ literacy practices and give value to the different backgrounds and the different literacies they employ in their particular context.

Contemporary definitions of literacy are based on the understanding that “meanings of words and texts . . . cannot be separated from the cultural and social practices in which—and by which—they are constructed” (Knobel & Healy, 1998, p. 2); hence, literacy is always considered in the plural, “literacies” (Lankshear & Knobel, 2008), signifying a view of literacy as an engagement in a range of different social practices around texts in a specific context, emphasizing diversity of social and cultural practices. According to Kalantzis and Cope (2012), an ability to “work across literacies in the plural opens paths to social participation, ideally enabling learners from cultural, social, gender and socio-economic backgrounds to make meaning and succeed” (p. 7). Roswell and Walsh (2011) add:

Assigning plurality to literacy to privilege “literacies” opened up what traditionally has been seen as a standardized model of literacy education, to one that acknowledges differences based on situations, subjectivities, and multiple text genres. It also signals that there are many different literacies that shift with contexts, texts, and identities of people using literacy. Therefore, thinking about literacy as a
universalized, autonomous entity undermines its diversity and multiple uses and understandings. (p. 55)

1.5.1 Multiliteracies

The rapidly developing array of technological tools and resources that are used to create digital texts has also broadened the definition of literacy, highlighting the rapid and continuous process of change in the ways in which we read, write, view, listen, compose, and communicate information. Engagement in and interactions with texts are presented through a variety of modes, making it more accurate to talk about multimodality and *multiliteracies* (Coiro, Knobel, Lankshear, & Leu, 2008; The New London Group, 1996), the latter being a term that the New London Group introduced to describe the various abilities and skills needed to correspond with the wide range of communication channels with which we engage. The concept of multiliteracies first acknowledges that digital technologies have brought complex changes to meaning-making in a context of increased cultural and linguistic diversity. Secondly, given that the rapid increase in new digital technologies has made meaning-making increasingly multimodal, being literate in a digital world entails not just technological proficiency, but also a wide variety of ethical, social, and reflective practices that are embedded in work, learning, leisure, and daily life.

The complex changes to meaning-making brought about by digital technologies challenge conventional literacy practices, requiring these to be supplemented with learning to read and write multimodal texts (Cope & Kalantzis, 2009). Following these expanding concepts of literacy and learning literacy, The New London Group (1996) proposed a framework for a pedagogy of multiliteracies which promotes the extension of literacy pedagogy from one-dimensional, paper-based text representations to multiliteracies and
multimodal (e.g., written, oral, visual, audio, spatial, and tactile) representations. They argued that educators in the 21st century are designers of learners’ social futures; therefore, a shift in pedagogical practices is crucial to the equipping of students with the necessary skills to successfully participate as transformation agents in the design process (Iyer & Luke, 2009; Swenson, Young, McGrail, & Whitin, 2006). Kajder (2007) argued that:

new digital tools require and make possible new ways of constructing and communicating meaning, leading multiple forms of media (not just print text) to have authority for representation. Therefore, a multiliteracies or multimodal approach is one in which language and other modes of meaning are dynamic, open up what counts as valued communication within the classroom, and invite new voices into the classroom interpretive community. (p. 93)

The framework for a pedagogy of multiliteracies emphasizes the need for curriculum and pedagogy to be reconsidered in light of how students can be prepared to deal with the demands of the changes to literacy resulting from rapidly changing digital technologies. The focus on what it is students need to learn is articulated through the notion of design, which Cope and Kalantzis (2009) refer to as “something you do in the process of representing meanings either to oneself in sense-making processes such as reading, listening or viewing, or to the world in communicative processes such as writing, speaking or making pictures” (p. 175). Within this process, meaning-makers remake themselves, reconstructing and renegotiating their identities by drawing on the complex and interrelated modes of meaning-making. This notion has three interrelated elements—available designs, designing, redesign—that emphasize meaning-making as an active and dynamic process and draw
attention to how learners are both inheritors of patterns of conventions for making meaning and active designers of new meaning (Mills, 2010).

Available designs are all of the resources—from past and new experiences—that meaning-makers bring to a text to use in communication with others or in representation of the world to themselves or others through speaking, writing, reading, listening, and viewing. Designing is the process of shaping emergent meaning, which involves representation and recontextualisation. During this process, available designs are transformed to create new designs. The outcome of designing is redesign, where meaning-makers have created a new meaning-making resource (Mills, 2009). It is, therefore, pivotal within the multiliteracies framework that the notion of learners “designing their social futures” is the key outcome of the design process. The goals of the multiliteracies pedagogy are to create a learning context that (a) supports and motivates students to use a variety of media and technologies; (b) offers them opportunities to access, evaluate, sort, and read information from a variety of multimedia and multimodal sources; and (c) encourages them to collaborate and negotiate in real and virtual spaces for the purposes of producing and publishing multimedia and multimodal texts. Further, this framework helps students to understand how, when, and why they might draw on specific technologies to achieve specific goals (Borsheim, Merritt, & Reed, 2008; Cope & Kalantzis, 2009).

1.5.2 Digital Literacies

The term digital literacy was popularized by Gilster (1997), who defined digital literacy as “the ability to understand and use information in multiple formats from a wide variety of sources when it is presented via computers” (p. 1). With the rapid and continual
development of ICTs and other digital technologies, the definition has been contested and redefined. According to Eshet-Alkai and Amichai-Hamburger (2004), digital literacy is more than just the technical ability to operate digital devices properly; it comprises a variety of cognitive skills that are utilized in executing tasks in digital environments, such as surfing the Web, deciphering user interfaces, working with databases, and chatting in chat rooms. It has become a “survival skill” in the technological era—a key that helps users to work intuitively in executing complex digital tasks. (p. 421)

To others, digital literacy is a broad concept that integrates other literacies and skill sets, such as information literacy, ICT literacy, and media literacy (Bawden, 2008; Martin, 2006). In sum, the definition of digital literacy has evolved beyond individual skills and competencies for accessing and using computers to include aspects of meaning-making, effective communication and collaboration, and new textual formats for reading and writing.

With the expansion of the concept of literacy, digital literacy has also come to be viewed in the plural. Martin (2006) described digital literacies as the awareness, attitude and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyze and synthesize digital resources, construct new knowledge, create media expressions, and communicate with others, in the context of specific life situations, in order to enable constructive social action; and to reflect on this process. (p. 135)

Likewise, Gillen and Barton (2010) defined digital literacies as “the constantly changing practices through which people make traceable meanings using digital technologies” (p. 9). Both of these definitions adopt the social-practice perspective that views digital literacy not
as unitary but as a myriad of *literacies*, with the plurality acknowledging the multiple social and cultural practices and conceptions within the digital environments that vary according to how people “identify” themselves, the values that they have, the social groups that they relate to, the affinities they invest in and attach themselves to, the purposes they see themselves pursuing, and the kinds of images they seek to project (Lankshear & Knobel, 2007, 2008). Further, it emphasizes these diversities within the digital, where specific aspects of digital literacies can be investigated and explored further and understood in many ways, offering a continuity to the understanding of literacies as social practice (Gillen & Barton, 2010; Hague & Williamson, 2009).

Being digitally literate requires students to have both access to a broad range of practices and cultural resources that they are able to apply to digital tools, and the abilities to think critically about opportunities and challenges that digital technologies present; make and share meaning in different modes and formats; create, collaborate, and communicate effectively; and understand how and when digital technologies can best be used to support these processes (Hague & Payton, 2010). Digital technologies are increasingly permeating the learning and teaching landscape; therefore, it is vital to know how and when to make decisions about which technologies, and which forms and functions of literacy support one’s purpose. Considerations of how digital literacy can support disciplinary knowledge can help to ensure that digital technology use enhances learning and teaching instead of simply becoming an add-on. Developing digitally literate students involves cultivating in them the abilities to use digital tools appropriately and effectively for a task at hand, solve problems dynamically as they arise, and use a range of methods and approaches, both individually and as part of a community (Hinrichsen & Coombs, 2013).
1.5.3 Academic Literacies

Lastly, this study drew upon academic literacies theory (Lea & Street, 1998; Lea, 2004), which views literacies as social practice. The view of academic literacies in this study takes into account the diverse multiple literacies found in academic contexts, such as different genres and styles associated with specific disciplines, and also recognizes the diversity of reading and writing practices for different purposes and within different cultural contexts (Ivanič et al., 2009; Lillis & Scott, 2007). For instance, Paxton & Frith (2014) argue that we might refer to the academic literacies required for different disciplines (e.g., in the humanities or in science, economics, or mathematics).

Some researchers have defined academic literacy in terms of skills required for academic success in higher education, a complex set of skills and accomplishments required at entry into tertiary institutions, and skills required for an advanced learner to make an effective departure from universities (Chu, Perkins, & Marks-Maran, 2012; Gilliver-Brown & Johnson, 2009; Johns & Swales, 2002; Koo, 2009; Maloney, 2003; Short & Fitzsimmons, 2007). However, the skills-based approach has been criticized because defining academic literacy as a “set of generic skills that students need to be successful, hides the diversities that exist,” according to Henderson and Hirst (2007, p. 26). Similarly, Butler (2013) argued that a perception of academic literacy as being comprised of reading, writing, speaking, listening and thinking/reasoning skills harbors the dangerous assumption that “skills” could be construed as a neutral set of skills that could be taught out of context to new entrants to university education and inevitably lead to an overemphasis on some skills at the expense of others, sometimes losing their inherent interrelatedness with regard to the typical tasks that a university education demands of students.
Students come from different cultural backgrounds and experiences and may have differing interpretations of what it means to know, communicate, and be relevant, appropriate, brief, and clear with regard to knowledge production in English (Koo, 2009); hence, the focus of academic literacy should be toward ways in which students learn to participate and make meaning within an academic context, where these ways of making meaning are valued by the cultures, traditions, or academic disciplines with which they are associated (Bury & Sheese, 2016; Henderson & Hirst, 2007). Further, other researchers (Gilliver-Brown & Johnson, 2009) have argued that academic literacy is more than just knowledge of discrete language skills or appropriate language use in context; to them, academic literacy needs to be understood holistically and include, among other things, reading and writing competencies, critical thinking, knowledge of independent learning processes, tolerance of ambiguity, effective practice of good judgment, and development of a deeper sense of personal identity.

According to Crook (2005), the academic literacies approach emphasizes reading and writing as a form of socially situated practice. In this approach, becoming literate is not considered to be a matter of acquiring a number of communication skills but a recognition that various possible designs of writing need to be crafted in relation to different social and cultural contexts in use. For Leki (2007), academic literacies constitute an activity of interpretation and production of academic and discipline-based text—often within important social contexts such as group projects or written reports—and their profound reliance on students’ experiences with text. However, Wahi, O’Neill, and Chapman (2012) observed that, although research on academic literacies has concentrated on the complex relationship between writing practices and learning and the production of written assignments, an
understanding of the academic literacies approach needs to be brought more centrally to include other elements of academic literacies—reading, listening, and speaking practices. Focusing on writing alone may mask the multiple academic practices in learning and the overall process of acquiring knowledge. Thus, for the purposes of my research, the term academic literacies will be used to refer to one’s ability to effectively read, write, listen and speak (i.e., communicate) within higher-education academic contexts.

1.5.4 An Academic Digital Literacies Approach to the Teaching of the Communication and Academic Literacy Skills Course

The Learning and Teaching Policy (University of Botswana, 2008b) of the University of Botswana acknowledges the changing environment within which its university graduates will live, work, and contribute, hence its encouragement of University of Botswana lecturers to integrate digital technologies in their instruction in order to equip students with the requisite graduate attributes. The policy also acknowledges how digital technologies have impacted the ways in which students learn in academic contexts.

New technologies have impacted ways in which students read, write, and communicate, blurring the lines between the production of text (i.e., writing) and the processing of text (i.e., reading) (O’Brien & Voss, 2011). Jenkins, Purushotma, Weigel, Clinton, and Robison (2006) argued that this read-write culture blurs the line between media consumer and producer, thereby demanding that students develop a repertoire of skills and strategies that will enable them to shift from being passive recipients to active participants, who are part of a community of practice (Lave & Wenger, 1991). Therefore, new ways of reading, writing, and communicating are central to my emerging framework for integrating
digital literacies into the learning and teaching of the Communication and Academic Literacy Skills (COM) course at the University of Botswana.

The design and creation of new textual formats, such as electronic posters, blogs, podcasts, and webpages, may entail sophisticated layouts and graphics (e.g., photographs and other images), requiring students to consider and understand features of design—composition, use of text and images or graphics, color—and the appropriacy of these for a specific audience (Barton, 2018; Newbrey & Blatezore, 2006). New ways of reading also require students to, for example, read electronic books and navigate hypertext links while accessing and using information on the Internet, where they work with images, sounds, and written text to determine how the different modes may influence meaning-making (Roswell & Walsh, 2011).

Furthermore, the use of blogs, forums, wikis, Google Docs, and other social networking tools such as Facebook and Twitter encourage the co-construction of texts by readers and writers, thereby opening new opportunities for students to collaborate and interact in the production of texts; this contrasts with conventional online practices that emphasize individual publishing and consumption (Mills, 2010). Other textual formats, such as e-mail, short message service (SMS), and other social media networks that are connected to traditional reading and writing practices have also surfaced, introducing linguistic markers of formality and informality to the traditional literacies of reading and writing. Lastly, communication through the use of tools such as video-conference applications (e.g., Skype, Zoom, WhatsApp, and FaceTime) and social media networks (e.g., Facebook, WhatsApp, and Twitter) have afforded students and teachers opportunities for interaction, thereby
collapsing temporal boundaries and allowing for more interaction among students and teachers in and outside the classroom.

All of these changes highlight the critical need for first-year students enrolled in the *Communication and Academic Literacy Skills* course at the University of Botswana to be supported in their use of digital technologies to enhance learning so that they develop the literacies they require for success in their academic and professional lives. Lecturers need to supplement traditional literacy pedagogies with the integration of digital technologies to enable students to use a range of modes in their reading and writing literacy practices.

**1.6 Significance of the Present Study**

In the Botswana higher-education context, the use of digital technologies has been perceived to play an important role in enhancing the nation’s human resources in a country where natural resources such as diamonds are being depleted (Molutsi, 2009; Tabulawa, Polelo, & Silas, 2013). In addition, the labor market demands that graduates possess attributes that would allow them to be self-directed, self-motivated, and have life-long learning skills; this punctuates the need to empower students to acquire the right skills, knowledge, and attitudes that would propel the achievement of the country’s vision and, therefore, enhance the country’s global competitiveness (Human Resource Development Council, 2015; Molutsi, 2009; Tertiary Education Council, 2005). Along with the reforms in the higher-education sector to help meet these demands, the integration of ICTs into the tertiary-education curriculum was considered to be central in “facilitating skills development and preparing students for life and work in the digital economy” (Presidential Task Group, 1997); thus, the government of Botswana adopted the use of ICTs in education in order to develop learners that are self-reliant both nationally and globally.
With the influx of digital technologies in people’s lives, what it means to be literate is continuously changing, which has impacted how students learn and communicate (Coiro, Knobel, Lankshear, & Leu, 2008). Research (e.g., Archer, 2010; Gabriel, Campbell, Wiebe, MacDonald, & McAuley, 2012; Georgas, 2015; Jacobs, 2012; Lea & Jones, 2011; Leu, Kinzer, Coiro, & Cammack, 2004; Margaryan, Littlejohn, & Vojt, 2011; Mills, 2010) has been conducted to establish how digital technologies can be used to enhance students’ academic learning; however, limited research on the same has been conducted in Botswana (see Batane, 2010; Umunnakwe & Sello, 2016). This study, therefore, provides the first grounded study of the use of digital technologies to enhance academic learning in the Botswana higher-education context by studying both the strengths and gaps in support provided through the *Communication and Academic Literacy Skills* course. This course was designed to support the development of the academic literacies students need to effectively read, write, speak, and listen within and across academic disciplines and, ultimately, in the workplace. (More detailed information about this course is provided in Chapter 3.) Since digital technologies rapidly change, newer technologies (from the time this study was conducted) may have emerged, impacting students’ access to and use of technologies. As a result, the findings of this study may not reflect what is currently happening in the research context.

1.7 Outline of the Dissertation

This dissertation is divided into five chapters: Chapter 1 introduces the study’s context rationale and purpose, followed by explanations of the theoretical frameworks used, and concludes with the significance of the study. In Chapter 2, I review literature that is related to (a) students’ access to and use of digital technologies and (b) students’ and
lecturers’ perceptions of the use of these technologies for learning and teaching. In Chapter 3, I describe the research design, research site, data sources, and data-analysis methods and also discuss issues related to trustworthiness and ethics. In Chapter 4, the findings of this study are presented, and, in Chapter 5, I discuss the major findings, outline the limitations of this study, and present the conclusion, recommendations, and suggestions for future research.
Chapter 2: Literature Review

2.1 Introduction

With the prevalence of ICTs in all aspects of people’s lives and the rapid rate at which new technologies change and develop, higher education systems must keep pace with advancements in knowledge and skills for which demand is ever increasing in contemporary globalized society. The expectation in universities is that both educators and students use digital technologies while they engage in various tasks; hence, it is crucial that learning and teaching incorporate digital technologies. In this literature review, I will explore the use of ICTs in higher-education contexts, with a focus on Africa—Botswana in particular—and perhaps other developing, middle-income countries. I will then discuss academic digital literacies, addressing and problematizing the literature on digital natives/immigrants, arguing that it is important for lecturers to know (a) their students’ backgrounds, skills, and experiences in order to develop effective uses of digital literacies for academic learning and (b) how they might integrate digital literacies to enhance first-year university students’ learning in academic contexts.

2.2 ICT in Higher Education Contexts: An Overview

Higher education across the world has been perceived to play an important role in enhancing the human resources of a nation and promoting human-resource development in a world where natural resources are constantly depleting (Hong & Songan, 2011; Tabulawa, Polelo, & Silas, 2013). Obielumani (2015) observes that multiple problems—such as low funding; curriculum and pedagogical deficiencies; faculty understaffing; outdated technologies for learning, teaching, and research; dilapidated physical infrastructure; and widening of access and participation, among others—have negatively impacted access and
meaningful participation of citizens in higher education not only in Sub-Saharan African countries but also in other developing countries of Southeast Asia, Latin America, and even Europe. He further observes that, in order to “enhance equitable access to higher education in developing countries, the issue of quality, relevance, applicability in the modern globalized knowledge-based economy, should be pursued rigorously” (p. 73).

The labor market in Sub-Saharan Africa—and in Botswana, in particular—demands that graduates possess personal attributes such as life-long learning, self-regulating skills, self-motivation, and interactive attributes such as the ability to communicate and work in teams (Mohamedbhai, 2008; Molutsi, 2009). With these demands, higher-education sectors are obliged to consider shifting pedagogical paradigms from conventional pedagogies to pedagogies that could improve efficiency and effectiveness of education and adequately develop in students the required graduate attributes for the 21st-century workplace.

According to Asamoah and Mackin (2015), ICT-driven education could be adopted to address human-resource needs and produce graduates with relevant knowledge and skills for the labor market. Some of the reasons identified for integrating ICTs in learning and teaching are that ICTs have the potential to create effective learning environments that encourage sharing of resources, active participation, self-direction, and self-regulation, as well as improve life-long learning in students (Alam, 2016; Mikre, 2011). Therefore, it is important for lecturers to “rethink literacy and literacy practices in response to emerging technologies, diverse learners, globalization and shifting information structures within a digital global economy” (Meyer, 2013, p. 158).

While research has acknowledged the potential for integrating ICTs in learning in higher-education contexts, it is worth noting that the integration of ICTs in learning and
teaching has posed some challenges, especially with regard to the digital divide. In less technologically advanced countries, a large percentage of the population would lack access to and use of technologies that, in developed countries, would be perceived as “mundane” ICTs (Cullen, 2003), resulting from factors such as high cost of computers, Internet connectivity, and acquisition and maintenance of communication infrastructure (Fuchs & Horak, 2008; Goode, 2010; Gyamfi, 2005; Kabonoki, 2008; Mutula, 2004; Seymour & Fourie, 2010). The digital divide—or exclusion—implies that “the world’s poorest countries are increasingly left behind as information production and dissemination move down technological pathways, and limited or no access exacerbates the division between ‘haves’ and ‘have-nots’ (Altbach, Reisberg, & Rumbley, 2009, p. xviii). In Botswana, for instance, the cost of a low-specification computer is about P5000.00 (US$830), and connection charges to the Internet by service providers are about P500.00 (US$83) per month. A further cost of around P800.00 (US$130) a month is associated with a dial-up connection, adding to the telephone bill (Mogothwane & Underwood, 2013). Recent research by Mothobi (2017) has indicated that, although Internet penetration in Botswana is at 59%, the majority of Botswana does not have access to Internet services compared to their regional counterparts due to high Internet costs. For example, while, in Tanzania, a one-gigabyte data bundle costs US$2.99, in Botswana, the same is sold for US$18.00, clearly showing that data prices are less affordable for Botswana (Mothobi, 2017). It can be argued that the high cost of using the Internet and other digital technologies can, therefore, negatively impact the ICT competencies of learners admitted into tertiary institutions and, later, into workplaces (Mutula, 2010; Mutula & Mutula, 2007; Oyedemi, 2011). The majority of students entering into tertiary education in Botswana have not had access to the use of computers and the Internet in their previous
secondary schools; thus, Matsoga and Mogwe (2014) argue that this late exposure could be a contributory factor to the delay in the adoption of these technologies for academic learning in tertiary-education students.

Furthermore, especially in the African context, the digital divide has negatively impacted the adoption of ICTs in higher education, not only because of the limited access to the tools of information and communication technologies, but also as a result of the amount of knowledge and skills required to access the world of information and communication (Rico, Feliz, & Couto, 2013; Venezky, 2000); economic, geographical, educational, attitudinal, and generational factors; and/or physical disabilities (Cullen, 2001). For instance, there is low or non-adoption of ICTs in the delivery of courses because of challenges such as lack of pedagogical competencies in a majority of lecturers in the use of digital technologies for innovative learning and teaching, lack of ICT technical support at the institutional level, and limited to no access to ICTs due to inadequate infrastructure in institutions (Adam, 2003; Aoki, 2010).

2.3 Supporting First-Year University Students’ Academic Literacies in Digital Contexts

Although students entering the university are expected to “become familiar with the discourses and ‘cultures’ of their academic communities and to cope with all the academic demands geared towards successful completion of their programs of study” (Muhiwe, 2012, p. 39), not all of them are prepared for academic-literacy requirements of university-level coursework. Due to students’ diverse entry abilities and learning experiences, they lack the necessary skills needed to read and understand various textual genres in their academic disciplines, understand and synthesize information from texts, and structure and write required texts correctly for different audiences (Harklau, 2001; Murray, 2010; Ramoroka,
In addition, the emergence of digital technologies is constantly shaping what students need to learn as the Internet and other new technologies enter the classroom. For instance, new text formats have emerged, resulting in “the shift from fixed texts to those that are fluid and interwoven in more complex ways through the use of hyperlinks, non-linear, and densely multimodal” (Merchant, 2007, p. 122). In addition, digital and online literacy environments are characterized by large repositories of information in multiple formats, new purposes for and ways of reading, and new ways of interacting with information. Therefore, students cannot rely on print alone to stimulate learning and acquire new literacies. All of these changes brought about by digital technologies demand that lecturers use pedagogies that incorporate digital technologies in order to engage students in learning that is both stimulating and relevant to their needs (Cope & Kalantzis, 2009; Lankshear & Knobel, 2006).

2.3.1 Digital Literacies of First-Year University Students

First-year university students’ access to and use of digital technologies for learning and teaching has generated much discussion among scholars and researchers worldwide. Some assumptions have been made about students’ digital literacy practices on entering universities, resulting in these students being categorized and labeled as “digital natives” (Prensky, 2001), the “Net Generation” (Tapscott, 1998), and the “Millennial Generation” (Howe & Strauss, 2000) because they represent a generation that grew up with access to digital technologies, meaning they are supposedly inherently technology-savvy. These students are characterized as a generation that communicates differently, prefers to receive and process information quickly, actively engages in learning, multitasks, and relies heavily on communication technologies to access information and carry out social and professional
interactions (Gallardo-Echenique, Marques-Molias, Bullen, & Strijbos, 2015; Oblinger, 2003; Prensky, 2001; Radovanović, Hogan, & Lalić, 2015). This generation is compared to “digital immigrants,” who were not born into the digital world and, therefore, are the opposite of the “digital natives.” This divide is said to have implications on the current teaching practices by “digital immigrants” since they are incompatible with the students’ learning references and skills. Therefore, there have been calls for curriculum and pedagogy reforms to accommodate these students’ learning skills and expectations (Ellis & Newton, 2009; Gallardo-Echenique et al., 2015; Waycott, Bennett, Kennedy, Dalgarno, & Gray, 2010).

However, other researchers have questioned these assumptions about students’ digital literacy practices in academic contexts (see Bennett, Maton, & Kervin, 2008; Selwyn, 2009), arguing that, while there are some students with the aforementioned characteristics, students entering universities across the world are diverse in terms of technological skills, knowledge, and interest in the use of these digital technologies; therefore, their digital literacies cannot be generalized based solely on age. For instance, in the UK, results of a study by Margaryan, Littlejohn, and Vojt (2011), that investigated the extent and nature of university students’ use of digital technologies for learning and socializing, indicated that students in the sample used a limited range of mainly established technologies such as mobile phones, computers, digital cameras, MP3s, and game consoles for learning and teaching, while their use of collaborative knowledge-creation tools, virtual worlds, and social-networking sites was low. Their conclusion suggested that, while students generally had expertise in the use of some digital technologies and tools, they had limited understanding of their use for learning. Further, evidence from this research did not support claims that students in this generation are adept
users of digital technologies. Instead of adopting a radical approach to learning (see Jones, 2011, for similar conclusions), they conformed to traditional pedagogical approaches and “favored conventional, passive and linear forms of learning and teaching” (Margaryan, Littlejohn, & Vojt, 2011, p. 439).

Similarly, at the University of Prince Edward Island, Canada, Gabriel et al. (2012) explored first-year university students’ use of digital technologies and expectations while inside and outside class. Findings indicated that students frequently used e-mail, Internet, social media, and cell phones (for texting and voice calls) for communicating, socializing, and learning outside of school while e-books, iPods, e-mail, word processing, texting, electronic databases, and the Internet were used for school work. Results suggested that students categorize the different digital technologies according to the purpose they deem is appropriate for that type of technology. For instance, social-media technologies were reserved for out-of-school use while other types of technologies were used for academic work. However, students expected lecturers to use more varied technologies than they experienced in secondary school, which is in line with the expectations of this generation, whose lives are defined by the use of technologies. Their lecturers did integrate technologies into their courses, albeit at varying levels, leading Gabriel et al. (2012) to conclude that, although both lecturers and students in this study were reasonably comfortable with working in online environments, there was still need to support lecturers to fully exploit the appropriate possibilities of digital technology in the classroom.

In Australia, researchers also reported varying levels of access to and use of digital technologies among first-year university students with some significant—and some quite high—levels of non-adoption. Corrin, Bennett, and Lockyer’s (2010) comparison between
students’ technological use for everyday life and academic study indicated lower usage rates for academic study. Waycott et al. (2010) investigated the use of emerging technologies by both students and staff and revealed that there was no substantial gap in the use of emerging technologies between the technologically adept younger students and the less technologically savvy staff. However, the perceptions of the two participant groups of the role of technology in education differed. Students perceived technologies as communication tools for between them, their peers, and lecturers; in addition, the tools provided convenience and control in managing their studies. Lecturers, on the other hand, viewed technologies as a means to enhance student learning and teaching. For instance, they used PowerPoint for lecture presentations and websites to distribute learning resources to support traditional learning and teaching activities. Based on these findings, Waycott et al. suggested that these differences in perception could be understood not in terms of age-related or generational differences but in terms of the different roles that students and staff assume in academic contexts. These results may imply that, while lecturers are aware of the role that technologies can play in enhancing learning, they do not promote the innovative use of digital technologies for academic learning. Students, on the other hand, still rely on the lecturer to provide learning resources. Traditional pedagogies that do not encourage creativity, active learning, and problem-solving—skills these assumed “digital natives” are expected to possess—are, therefore, perpetuated. Digital contexts have the potential to afford students opportunities to experience learning through innovative teaching approaches; therefore, an integration of digital technologies would place students at the center of learning.

Contributions from the African continent have reported similar observations about first-year university students’ digital literacies. However, in Africa, researchers recommend
that discussions should be about access to technologies and opportunities afforded students prior to coming to university rather than about using students’ age as the only variable to characterize their digital literacies (Barnard & Van der Merwe, 2015; Brown & Czerniewicz, 2010; Byungura, Hansson, Muparasi, & Ruhinda, 2018; Czerniewicz & Brown, 2010; Jones & Czerniewicz, 2010; Kajee & Balfour, 2011; Kimani, Wangeri, & Mutweleli, 2013; Oyedemi, 2011; Thinyane, 2010). These researchers argue that most African students lack access to and opportunities to use digital technologies due to their social and economic backgrounds while students that come from backgrounds that support ICT uptake have an edge which enables them to achieve good academic standing, improved self-esteem, and adjustment to university life in general. The majority of the students who lack ICT experience become “outsiders” (Brown, 2012) and “digital strangers” (Czerniewicz & Brown, 2013) to the digital literacies that they require to adequately perform at university. Mpofu and Chikati’s (2013) results, after the researchers investigated the effects of the digital divide on students’ academic performance at Botswana Accountancy College, supported observations made by previous researchers. In their study, students who did their secondary education at private schools performed 5.3% better during examinations than their public-school counterparts, suggesting that access to facilities can positively contribute to students’ academic performance.

Taken together, research findings from across the world consistently show that labeling students by age or generation is not necessarily supported by evidence; rather, this assumption that a generation of students is homogenous in technological experience is faulty. Such generalizations risk overlooking more complex mixes of technology use based on knowledge, economic background, and preferences among student populations (Kennedy,
The research also indicates that students use a variety of technologies that are relevant to their purpose and institutional requirements. Contrary to assumptions made about their tech savviness, students rely on their lecturers for use of technologies for academic purposes. These findings raise questions about the assumptions about students’ learning experiences with digital technologies and the expectation that lecturers employ pedagogies that are in line with students’ learning needs. Researchers (Bennett & Maton, 2010; Gallardo-Echenique et al., 2015; Lea & Jones, 2011; Waycott et al., 2010) call for other researchers to consider going beyond the digital-native/immigrant dichotomy and, instead, strive to understand what knowledge and assumptions particular students bring to the academic context from other aspects of their lives, and what those mean to teaching and learning, in order to cater to the diverse range of skills that students possess. The general argument is that, although students are constantly immersed in digital technologies, they do not necessarily know how to use them for academic learning and, therefore, need guidance from their lecturers.

2.4 Supporting Students’ Academic Reading, Writing, and Communication in Digital Contexts

New technologies play a significant role in students’ lives and have been perceived to have the potential to transform learning; hence, many researchers and educators have embarked on explorations of how those new technologies can be used effectively to support students’ traditional literacy development. Although significant numbers of students found in classrooms—though not all, as argued above—have grown up immersed in technology, curriculum is still largely based on traditional forms of texts and pedagogies. The challenges for educators are to rethink how literacy instruction can incorporate new literacies into
academic learning—that is, skills, strategies, and insights needed to exploit the rapidly changing and continuously emerging information and communication technologies (ICTs) (Leu, 2000)—and to address variations among students in terms of their digital skills and experience, to prepare students for academic success.

In the sections below, I will review extant research on university students’ online reading practices, online writing practices, and collaborative writing that offers insights into some ways that university lecturers can support the development of students’ digital literacies for academic learning.

2.4.1 Students’ Online Reading Literacy Practices

Students’ transition from reading linear paper-based resources to reading non-linear and multimodal screen texts is complex. For them to “effectively” and “correctly” use these texts involves more than just finding and decoding words, images, and multimedia screens; students also need to possess complex reading skills to locate, evaluate, and construct meaning from and critically engage with these new text formats (Leu & Kinzer, 2000; Prinsloo & Walton, 2008). According to Leu et al. (2004), for a student to critically engage with texts in digital contexts requires new literacies that allow them to: identify important questions, locate information that meets their needs, know which search engine(s) to use, critically evaluate the usefulness of information by checking its reliability, synthesize information in multiple media formats, read and write as they communicate via the Internet to seek information, and, together, think and share about what they have learnt.

An important aspect of academic digital literacy is the ability for students to find useful information and correctly use it in assignments; however, researchers have observed that students encounter challenges when reading for information on the Internet. Students
access abundant information on the Internet in their lives, and they enter the classroom with considerable, but untutored, experience locating evidence, critically analyzing information they find, decoding language and discourses, and joining communities. That is, students often lack the skills and competencies required for online reading comprehension—use of relevant tools to locate information and knowledge, and critical evaluation, analysis, and examination of the information they access online (Kiili, Laurinen, & Marttunen, 2008; McGrew, Breakstone, Ortega, Smith, & Wineburg, 2018; Mutula, 2010). For instance, when engaging in online searches, students often connect to search engines that they are accustomed to; perform basic, unnarrowed searches; and then use information from the first hits (i.e., results) that come up (DeVoss & Rosati, 2002).

Other studies (Boger, Dybvik, Eng, & Norheim, 2015; Kiilu & Otike, 2016; Toner, 2008) have also indicated that students are unfamiliar with how academic libraries work and, therefore, are unable to effectively access and use an array of digital resources available through the libraries. Students end up relying on familiar information sources, such as Google, that do not necessarily require them to learn literacy skills in advanced information search strategies, necessary for success at university. Other reasons advanced for students’ preference for the use of Google for academic research (Georgas, 2013; Lee, Paik, & Joo, 2012; Purdy, 2012) were that they found it easier to access and use information from Google than from academic library resources, and they also perceived Google to have more information coverage. Lecturers and librarians, on the other hand, emphasize the use of academic databases because they are perceived to provide more credible sources.

Other researchers have been more nuanced in their research and findings. For instance, Georgas (2015) compared the quality of sources found by undergraduate students
when doing research for projects using both Google and the library search tools. His findings supported those of previous studies in that most students preferred to use Google because they experienced difficulty using library databases; however, Georgas (2015) also reported that students often used Google to access Google Scholar and to find results within library databases such as JSTOR. Using this search strategy enabled them to find sufficiently high-quality, relevant, and scholarly articles, implying that students’ use of Google does not always produce material that is not credible. These findings corroborate Yongyan’s (2012) investigation of undergraduate students’ web-based research that found that students were generally resourceful, strategic, and efficient when conducting online research. They frequently used Google as an initial search tool to access Google Books and the university library’s search engine (called Dragon) to find academic sources. Findings from these studies indicate that, if using Google as an initial tool can lead students to a variety of credible sources, lecturers and librarians could acknowledge this and provide support to students to engage in more effective use of the search tool. According to Walton and Archer (2004), supporting students in their acquisition of the required online-research and reading-comprehension skills through scaffolding the process of research could significantly improve students’ search and referencing skills. Students could be provided with guidelines that demonstrate proper practices for evaluating sources and use search tools to access materials for various disciplines; lecturers could also design assignments that encourage reflection and self-monitoring (Andreou, 2001; Maybee, 2006; Taylor & Dalal, 2015). Finally, while online reading can be a challenge, students need to understand that effective online reading requires them to apply online reading strategies to maintain meaning, evaluate their own practices, engage in complex thinking, and work toward
developing critical-reading skills that are of utmost importance in the language classroom (Kaur & Sidhu, 2014).

2.4.2 Students’ Online Writing Literacy Practices

Meaning-making processes are becoming more complex in digital environments, requiring an extension of processes from writing of print only to accounting for written products that contain a combination of images, graphics, and sounds to convey messages (Ludwig, 2003; Moje & Sutherland, 2003; Walsh, 2010). According to Edwards-Groves (2011), extending the more traditional understanding of classroom writing and the writing process broadens what “counts” as classroom writing; hence, exposing students to multimodal forms of text goes hand in hand with the realization that all texts are consciously constructed in order to share information and ideas in particular ways and can shape attitudes, values, and behaviors (Bull & Anstey, 2007). Lecturers are challenged to afford students learning opportunities that overtly enable them to move across multiple modes of text designs and textual representation in order to explore and enhance their creativity in the construction of new and dynamic texts (Archer, 2010; Borsheim et al., 2008).

Jacobs (2012) investigated first-year university students’ use of multimodal texts as primary texts, along with traditional texts, to support their academic literacy skills. She explored how popular and multimodal texts as an integral part of instruction can support student learning. Students were engaged in the higher-order thinking skills of summarization, analysis, synthesis, and evaluation when reading and understanding the textual resources and creating multimodal texts. Findings indicated that engagement in multimodal academic literacies, when taught alongside traditional composition, helped students gain a better understanding of how academic arguments are constructed. Jacobs
argued that, as the world grows increasingly multimodal, instruction needs to move beyond traditional texts and include opportunities for engagement in multimodal academic literacies wherein students not only “read” multimodal texts but also create them. Further, doing so may be an important part of guiding students’ development as academic thinkers and writers, as well as preparing them for engagement in a media-rich society. Jacob contends that multimodal academic literacies should be taught alongside traditional essayist forms in order to create rich learning opportunities.

Although students enter university with writing values and ideas relayed to them in their past school experiences, normally, instruction does not address issues of online research and writing (DeVoss & Rosati, 2002). The increasing use of the World Wide Web (WWW) as a research space becomes a challenge for students who are accessing and using online texts without properly acknowledging sources. Kashian, Cruz, Jang, and Silk (2015) examined the effects of an instructional activity designed to help students improve their understanding of plagiarism and its consequences by providing them with strategies for ethical writing and the use of key citation elements. For the first assignment, students were required to submit assignments through Turnitin, and the grading process revealed widespread plagiarism. The intervention involved students being guided on in-text citations and paraphrasing and instructors discussing both the importance of correctly citing sources and the consequences of plagiarism. The second assignment, just like the first, was submitted through Turnitin, and the results indicated increased efficacy and fewer instances of plagiarism, leading the researchers to conclude that students engage in plagiarism with some frequency, but instructors often do little to help them understand the significance of plagiarism and often do not create assignments that reduce the likelihood of plagiarism. The
researchers also found that student support in the use of online material can lead to less likelihood of plagiarism by students; in fact, studies have indicated that first-year students often demonstrate weaknesses in acknowledging and referencing online material as evidence for supporting their own ideas in their writing, resulting in inadvertent plagiarism (Hendricks, Andrew, & Fowler, 2014; Neville, 2010; Vardi, 2012). In response, researchers emphasize the importance of supporting students throughout their academic lives to enable them to learn strategies that avoid plagiarism (Batane, 2010; Chao, Wilhelm, & Neureuther, 2009; DeVoss & Rosati, 2002; Evering & Moorman, 2012; Pfannenstiel, 2010).

Overall, the multiplicity of digital technologies and tools available afford students opportunities to learn to read and write multimodal texts, even while these new forms of texts challenge the traditional understanding of how information should be represented and shared (Jewitt & Kress, 2003). The evolving nature of texts demands that educators and students acquire the literacies associated with the design, production, and consumption of these texts.

2.4.3 Engaging Students in Online Collaborative Writing Tasks

Web 2.0 technologies are often seen as important tools that can be used to promote interaction, create opportunities for collaborative learning, and provide communication between students and teachers. Popular Web 2.0 technologies—such as Facebook, wikis, blogs, YouTube, podcasts, and Twitter—have been observed to have potential applications for learning and teaching in higher education. According to Lwoga (2012), Web 2.0 technologies are likely to support efforts toward increasing participation and creating learning environments that are student-centered. Other researchers (Bosch, 2009; Chawinga, 2017; Magogwe, Ntereke, & Phetlhe, 2015; Munoz & Towner, 2009; Shih, 2011) assert that, if appropriately deployed, these technologies can provide extensive practice in writing and
stimulate students to become actively and creatively involved in the learning process as they acquire and hone their language skills, expand their overall knowledge base, and develop analytical and critical-thinking skills.

With the focus of literacy having now shifted from individual to community involvement (Jenkins et al., 2006), incorporating social media into a course can allow a diverse group of students to engage in creating and developing content, as well as maintain connections with others (Baruah, 2012), thus affording students opportunities to share, collaborate, compare ideas, and share knowledge and skills to support each other. It is in the light of this—and perceptions that students are already familiar with these technologies from everyday usage—that explorations of the use of Web 2.0 tools for learning and teaching are also gaining traction among educators in higher education (Judd, Kennedy, & Cropper, 2010). In addition, there are assumptions that the capabilities of the technologies may appeal to this generation that is perceived to process information quickly, favor graphic/visual information over text (Martínez-Alemán, 2014), and be resistant to traditional methods of teaching and learning (Bosch, 2009; Prensky, 2001).

A study by Kol and Schcolnik (2008) reports on a pilot and subsequent study conducted in the English for Academic Purposes (EAP) courses at the University of Tel Aviv that explored the effects of asynchronous discussion-forum participation on first-year students’ writing and their attitudes towards discussion forums. Instruction and practice in digital literacy skills, such as skimming a digital article or using an online dictionary, were part of the course curriculum. Students were instructed to write forum messages—an integral part of the course—and their contributions were checked for evidence of reflection on both general and specific points in the text and for interaction with other students. The
findings revealed that discussion forums improved students’ academic vocabulary and, subsequently, their academic literacies. They became more constructive in their comments, asked questions, and appreciated new perspectives from peers. Ho (2002) observed that, as students interact within discussion forums, they learn from each other’s scholarship, skills, and experiences. Engaging in online collaborative writing affords students opportunities to assume alternate roles as knowledge receivers, providers, and designers (Kasper & Weiss, 2005). They brainstorm, verbalize their thoughts, interact with one another, discuss course material, and practice the language of the academic discourse community (Bassett, 2012; Mills, 2009; Ng, 2008; November & Day, 2012).

In another study, Bacabac (2010) analysed the use of discussion boards as a forum for composing argumentative research-based essays. Based on her data, Bacabac suggested that discussion boards should be used as collaborative tools for the essay-writing process because they enabled students to socialize, have meaningful conversations, and critically reflect. Both students and teachers affirmed the capacity of discussion boards to sustain focused dialogues and promote equal opportunities for student interactions. The affordance of the asynchronous discussions was that students were given more time to read and respond to others’ posts without having to worry about the constraints of time. Students became more fully engaged in reading, reflecting, and responding to threaded posts, thus allowing for more critical reflection and in-depth learning. The conclusions of this study aligned with those of other studies, indicating the importance of online discussion forums in facilitating, augmenting, and redefining group interaction and in promoting the positive effects of collaborative learning in academic discourse communities.
The use of Facebook has also been explored as a tool for enhancing students’ learning and teaching. However, research on the use of Facebook in education in Sub-Saharan Africa—especially in Botswana—is still in its infancy (Magogwe & Ntereke, 2013; Magogwe, Ntereke & Phetlhe, 2015). The results of these studies that examined University of Botswana students’ use of Facebook for learning support the results from other research (Bosch, 2009; Martinez-Aleman, 2014) that revealed the value of using Facebook as a tool for providing students with opportunities for improving communication and collaborative and self-directed learning. Further, an evaluation of students’ perceptions of using “Facebook pages” within individual university subject offerings (Irwin, Ball, Desbrow, & Leveritt, 2012) indicated that students believed that the use of Facebook would increase interaction between students, as well as their instructors. Together, the findings of these studies highlight the potential for using Facebook in promoting collaborative and cooperative learning and the need for further research in order to allow for more understanding on how Facebook can enhance students’ learning outcomes.

Cilliers (2017), who investigated students’ acceptance of the use of wikis in an undergraduate course at a university in the Eastern Cape province of South Africa, found that, although the majority of students (82.2%) reported that a wiki was an effective tool to improve collaboration, most students did not voluntarily use the wiki to enhance learning. The researcher suggested that lecturers provide adequate instruction and clear outcomes of the activity in order to improve students’ engagement with the tool.

It is worth noting that, while some research studies report on the potentials for using online collaboration tools to engage students in learning and teaching, there are other observations stating there is a slow uptake in the use of these tools for learning and teaching,
especially in most developing countries and in Africa, in particular (Bosch, 2009; Sife, Lwoga, & Sanga, 2007). This is attributed to, for instance, varying ICT literacy levels among lecturers and uneven access to resources that enable computer-based teaching and learning (Bosch, 2009; Sife, Lwoga, & Sanga, 2007). These challenges have pedagogical implications for learning and teaching in higher-learning institutions in developing contexts in an era where there is a call for an engagement in the use of digital technologies in order to increase student participation and learner-centeredness in learning and teaching.

2.3 Chapter Summary

An integration of digital literacies into curriculum emphasizes an understanding of (a) the ways in which the use of new technologies influences, shapes, and transforms academic literacy practices (Lea & Goodfellow, 2009; Lea & Jones, 2011) and (b) the learning and teaching context, in terms of what students need to do and the role technologies can play in supporting their learning. Given both the proclivity for using technology among today’s students, as well as the variation in their background and experience with digital literacies, tertiary curriculum development needs to be carefully aligned with students’ learning preferences and needs in order for students to perceive learning to be relevant to them.

Developing students’ academic digital literacies requires engaging them in, among other things, the use of digital tools and resources for creative production, real-world multidisciplinary problem-solving, collaboration with others in project work, and critical reflection on their learning. In addition, it entails developing a repertoire of resources or practices for interacting with text—analyzing and identifying its origin and authenticity and understanding how texts have been constructed—in order to perceive gaps, silences, and biases (Bull & Anstey, 2007). It is also important for students to employ a set of required
capabilities to become participants and effective members of a contemporary literate society. Acquiring this repertoire of resources and practices could enable them to move beyond decoding and encoding print to understanding and using texts on several levels, for a variety of purposes, with a range of technologies (Jones, 2010).

The role of educators in these environments becomes very prominent since they need to understand students’ literacy practices in digital contexts so that they can redesign the curriculum and pedagogies that cater to these students’ learning needs. In addition, technologies are constantly changing, with the “new” of the future constantly replacing the “new” of the now (Walsh, 2010, p. 212); therefore, lecturers need to strategically employ technologies that will optimize students’ learning experiences in higher education (Greenhow, Robelia, & Hughes, 2009; Velliaris & Breen, 2016).

In conclusion, the affordances of digital technologies place new demands on both lecturers and students to acquire a new set of literacies that will enable them to effectively function in digital contexts. In order for lecturers to engage and encourage students to make productive and relevant use of technologies, they also have to become familiar with new literacies that the new technologies require (Leu et al., 2004) so that they can optimize their use to transform learning. Researchers have observed that assuming these new roles can be challenging for most lecturers, who end up replicating current teaching practices in digital formats and reinforcing the prevailing teacher-centered pedagogy (Adam, 2003; Agnihotri & Merline, 2016; Aoki, 2010; Laurillard et al., 2012; McKnight et al., 2016; Odora & Matoti, 2012). They suggest that, in order to prevent lecturers from keeping their “foot in the past” (Prensky, 2001), support is imperative as they adopt these new roles (Beetham & Sharpe, 2013). Although there is much interest in first-year university students’ use of
digital technologies to enhance academic literacies in digital contexts as described above, related literature in Botswana indicates that no research on this topic currently exists in higher-education contexts, making this study an important undertaking as it will generate much-needed discussions.
Chapter 3: Methodology

3.1 Introduction

In this chapter, I will describe my methodology and justify its application, as well as describe my procedures for data collection and the instrumentation used in this study. Descriptions of the research site, participants, and the context of the study will also be provided. I will introduce the research design and the research questions, explain the data-analysis process, and, lastly, reflect on the methodological and ethical considerations of the study.

3.2 Use of Qualitative Research

Qualitative research is “a form of interpretive inquiry in which researchers make an interpretation of what they see, hear, and understand” (Creswell, 2009, p. 176)—an “inquiry process of understanding” (Creswell, 2007, p. 15). Much qualitative research is grounded in the constructivist paradigm, which views people not as individual entities who exist in a vacuum but rather as individuals who construct reality as they interact within certain environments. Unlike the positivist paradigm that claims a single reality (i.e., that “truth” can be established), the constructivist paradigm recognizes that there are multiple perceptions of a context-specific “reality,” and the plurality of worldviews is best represented as an intricate network of human construction (Humphries, 2008; Sullivan & Sargeant, 2011).

The purpose of this study was to investigate University of Botswana first-year students’ use of digital technologies designed to enhance learning in the Communication and Academic Literacy Skills (COM) course. I considered the use of qualitative research appropriate for this study since it enabled me to develop a deep understanding of the phenomena under study and also afforded me an opportunity to study the participants in their
natural setting. Interactions with the participants inside and outside the classrooms expanded my knowledge about their activities, behaviors, and experiences of how they used digital technologies in the learning and teaching of the course.

Kamberelis and Dimitriadis (2005) posited that qualitative inquiry attempts to answer “how,” “why,” and “what” questions in order to understand, interpret, and explain complex and highly contextualized social phenomena such as classroom cultures, avid readers, or peer-group development and maintenance. Therefore, using qualitative research enabled me to develop an understanding of what digital technologies students used and how they used these in order to enhance their learning in the COM course. Making sense of how they interpreted their experiences and the meaning they attributed to their experiences (Creswell, 2013; Denzin & Lincoln, 1994; Merriam, 2009) was important in my investigation because these processes highlighted students’ perspectives on the value of using digital technologies to enhance their learning not only in the COM course but also in their disciplines and, ultimately, in the world of work.

3.3 My Role as a Qualitative Researcher

As a qualitative researcher, it is important for me to clarify my motivation for this research to ensure credibility. This process necessitated that I reflect on my role as a researcher in the context within which I worked as a lecturer.

Qualitative researchers take on a variety of roles when in a research setting. They can position themselves as insiders, outsiders, or somewhere in between (Dwyer & Buckle, 2009). Insider researchers are those who choose to study a group to which they belong, while outsider researchers do not belong to the group under study (Breen, 2007, p. 163). In order to ensure credibility in my research, it was important for me to reflect on my role as a
researcher because, within the context of this research, I considered myself an insider since I was conducting research in the unit within which I worked as a lecturer. My role as an insider researcher was advantageous because it afforded access to the research site. In addition to having an understanding of the culture in the unit, I also had established close professional relationships with members within the unit, which facilitated higher levels of trust among the participants, something which might have been lacking had I been an outsider (Dwyer & Buckle, 2009). This advantageous standpoint allowed me to interact naturally with members of the unit since they accepted my presence quickly and became more open to sharing information in greater depth.

According to Bourke (2014), research is a shared space between the researcher and the participants; hence, researcher identities have the potential to impact the research process not only through the perceptions of others but also in the ways in which they expect others to perceive them. Therefore, through recognition of their biases, researchers can gain insights into how to approach a research setting, members of particular groups, and engagement with participants (p. 1). It is in the light of this that—although inside researchers have all of these various advantages—I had to constantly reflect on my role throughout all of the stages of the research process in order to establish how my presence on the site might have led to loss of objectivity and, in the process, inadvertent erroneous assumptions based on my prior knowledge and experience within the unit. In this study, I wanted to find out:

1. What technologies are available to first-year students taking the Communication and Academic Literacy Skills course at the University of Botswana?
2. How do first-year students use the digital technologies available to them to enhance their academic literacies?
3. What are first-year students’ perceptions about their use of digital technologies in learning?

4. What contributions do digital technologies make to the development of students’ academic literacies?

5. What are lecturers’ perceptions about the use of digital technologies to enhance students’ academic literacies?

3.4 Case Study Methodology

According to Yin (2009), the case study research method is an empirical inquiry that investigates a contemporary phenomenon in depth within a real-life context, where the boundary between phenomenon and context is not clearly evident. Stake (1995) views case study as “a process of inquiry about the case and the product of the inquiry, not a methodological choice but a choice of what is to be studied” (p. 222). This method enables a researcher to investigate contemporary phenomena within a natural setting, ensuring that a topic of interest is well explored (Stake, 1995; Yin, 2009) by enabling a researcher to answer “how”- and “why”-type questions while taking into consideration how a phenomenon is influenced by the context within which it is situated (Yin, 2009). I employed the case study research method in this study to enable me to arrive at an in-depth understanding of year-one students’ use of digital technologies and their perceptions of the use of digital technologies to enhance learning in the COM course and within the larger context of their learning at the University of Botswana and beyond.

The case study method is characterized by a researcher spending a substantial amount of time on site, being personally in contact with activities and operations of the case, and reflecting on and revising meanings of what is occurring (Stake, 1995, p. 242). Spending
time with participants on the research site offered me insights into the context of the day-to-day activities of the participants and how this context influenced their actions and perspectives as they engaged with the digital technologies that were available to them in the learning and teaching of the course.

Finally, the case study method resulted in rich insights into participants’ lived experiences and multiple perspectives of the phenomenon based on the data that I collected by triangulating data sources. The multiple sources of data enabled me to collect in-depth and detailed data, reflect on and clarify the data with respondents for interpretive accuracy, and also explore unusual or unanticipated responses (Maxwell, 2009; Stake, 1995), thus affording me opportunities to expand my understanding of students’ uses of digital technologies and their perceptions about how the use of these technologies enhanced their learning in the COM course.

Despite the outlined advantages of the case study method, quantitative researchers have criticized it for not being suitable for generalization because of the smaller sample sizes. However, qualitative researchers have argued that generalization is not the main purpose of qualitative research and that case study may provide materials for readers to learn on their own and also learn something from a single case by relating to how the case is like or unlike other cases. They emphasize the importance of the knowledge gained, which can be from one case or more, and that the generalizability of that knowledge is less important (Flyvbjerg, 2006; Stake, 2000).

Case studies have also been criticized for lack of objectivity because the researcher brings to the research prior beliefs and presumptions that may influence the participants’ behaviors. In addition, the proximity of the researcher to a phenomenon under investigation
may bias the findings. However, qualitative researchers have argued that using the case
study allows for an in-depth investigation which makes one an expert in whatever they are
doing because of the experience they gain from the process (Flyvbjerg, 2006). Furthermore,
the proximity of the researcher to the phenomenon under investigation facilitates a direct
relationship with the phenomenon and allows for reflection on or revision of methodologies,
activities, and operational frameworks within the research context (Maxwell, 2008).
Researchers (e.g., Crotty, 1998; Roulston, 2010) posit that qualitative researchers recognize
that their backgrounds shape their interpretation, and they position themselves in research to
acknowledge how their interpretation flows from their personal, cultural, and historical
experiences. Researchers can be reflexive about their actions and make explicit how their
intersubjective elements impact the data collection and analysis in an effort to enhance the
trustworthiness, transparency, and accountability of their research (Finlay, 2002, p. 211).

As a qualitative researcher, reflection during the research process was of utmost
importance as I was interacting with the research participants. I needed to be aware of the
biases that may have resulted from my relationships with colleagues with whom I interacted,
the knowledge of the culture of the unit within which I was conducting the research, and the
assumptions based on shared knowledge between my colleagues and me, and how these may
have impacted the research findings. Therefore, instead of trying to eliminate the biases, I
identified and monitored them to see how they were shaping the collection and interpretation
of my data (Merriam, 2009). Using multiple data sources enabled me to modify the
questions as the study evolved so that I captured what was happening within the research
setting. My daily reflections and log entries enabled me to revise my activities according to
what transpired during the interactions.
According to Merriam (1998), the case is defined as a “thing, a single entity, a unit around which there are boundaries” (p. 27) which might be selected because it is an instance of issue. The case for this is the first-year students, lecturers, and librarians that were involved in the learning and teaching of the COM course at the University of Botswana. The single case study approach was adopted for this study to investigate what digital technologies students used and how they used them to enhance their learning in the COM courses. A single case study was considered appropriate because of its ability to provide rich, in-depth exploration of the phenomena, and to uncover data that were significant for this study. Additionally, my interest was not to generalize the findings beyond this case, but rather to potentially draw on the results to apply to other similar contexts (Yin, 2009).

3.5 The Research Site

The research site for this study was the Communication and Study Skills Unit (CSSU) of the University of Botswana, a government-funded institution located in Gaborone, the capital city of Botswana. Data collection occurred from September, 2013, to February, 2014. The CSSU is one of the five units of the Centre for Academic Development (CAD), a center whose purpose is to advance and facilitate the overall development of academic staff and students in the university by improving the academic quality, effectiveness, and efficiency of the university (University of Botswana, 2008c). (See Figure 3.1.)
The mandate of the CSSU since its inception in 2000 has been to develop and offer communication, academic, and professional skills courses to all first-year students enrolled at the University of Botswana to help them learn effectively and communicate within and across disciplines while at the university and later, in the workplace (University of Botswana, 2012). These compulsory first-year courses are aimed at developing competencies in communication, academic and professional skills, in reading, writing, speaking, and listening) that students will use in their specific disciplines and social contexts; thus, the courses are coded according to the different faculties at the University of Botswana. (See Figure 3.2.)

Figure 3.1. Units within the Centre for Academic Development.

Figure 3.2. COM courses and course codes by discipline at the University of Botswana.
Lecturers in the CSSU are assigned to teach these courses in the seven faculties within the university, depending on the lecturer’s educational background, expertise, and/or research interests, some of which include: English for Academic and Professional Purposes, English for Specific Purposes, Teaching English to Speakers of Other Languages (TESOL), Academic Literacies, Applied Linguistics and Sociolinguistics, Communication, Health Communication, Digital Literacies, and Visual Literacies.

The general aim of the *Communication and Academic Literacy Skills* course is to develop all first-year students’ academic and professional communication skills so that they can communicate effectively at university and in the workplace. Some of the specific objectives are for students to be able to, by the end of the course:

- apply the basic language skills of speaking, reading, writing, and listening in all academic communication contexts;
- demonstrate application of information literacy in their use of information;
- reason cogently in different interactive communication situations;
- demonstrate independence and self-direction in their learning;
- produce general and specific texts that are fluent, accurate, and reflect appropriate style;
- use information technology to enhance communication skills;
- apply information literacy skills in their search for information;
- select appropriate media and channels to communicate both written and oral messages;
- apply principles of oral communication in academic and social contexts; and
• use interpersonal and cross-cultural skills in various academic and social contexts.

(personal communication [COM 121 course outline], February, 2013)

The Communication and Academic Literacy Skills course is a first-semester contact course offered for two hours every week for 14 weeks. It covers the content outlined in Table 3.1.

Table 3.1

<table>
<thead>
<tr>
<th>Summary of Course Content</th>
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</thead>
<tbody>
<tr>
<td><strong>Module</strong></td>
</tr>
</tbody>
</table>
| Introduction to Communication | • Modes of communication  
• Processes of communication  
• Barriers to communication |
| Academic and Information Literacy Skills | • Aural and oral (listening, note-taking/making, oral presentations)  
• Reading (reading techniques, analytical reading, paraphrasing, summarizing)  
• Writing (essays, summaries, paragraph development, report writing, and writing aspects [e.g., style; audience; in-text citation; use of graphics, table, charts, pictures])  
• Information literacy (library catalogues, web search tools, reference sources, indices, abstracts, bibliographies) |

The University of Botswana is committed to the use of digital technologies, highlighting “the need for increased emphasis on the use of digital delivery and information resources in meeting the needs for relevant learning that is delivered in flexible ways” (University of Botswana, 2008c, p. 21). Further, the commitment is highlighted in the university’s Information Technology Policy strategic goals of providing “state-of-the-art infrastructure and quality support for research, scholarship, teaching, learning, and administration and management as well as seamless access to datasets, information and
information resources” (University of Botswana, 2003, p. 1). The advancements in the development of technological infrastructure at the University of Botswana started in 2001 with the launching of e-learning and the adoption of a blended approach to learning—that is, the use of both face-to-face and digital technologies. In order to increase the quality of learning, two learning management systems—Blackboard and Moodle—were acquired, and online courses were developed. In addition, the university developed more technological infrastructure, such as 24-hour open-access labs for students, learning and teaching computer labs, and wireless coverage across campus. Additionally, the Educational Technology Unit organized monthly workshops to support academic staff with the use of digital technologies in learning and teaching, with the expectation that all of the lecturers at the university would integrate digital technologies into learning and teaching.

At the time of this study, the philosophy of the university was based on the principle of intentional learning which required the university to be intentional with the kinds of learning its students needed—by creating a positive learning environment and by delivering educational practices that would help students to learn to integrate and apply their learning, become life-long learners, and acquire appropriate graduate attributes for living and managing change (University of Botswana, 2008c, p. 21). Aligning with this philosophy and the realization that “a different kind of student is emerging with greater computer literacy and different kinds of expectation from the university experience” (University of Botswana, 2008a, p. 8), lecturers teaching the course were encouraged to explore and use pedagogies that encourage active learning and have the ability to develop self-directed and independent learners (University of Botswana, 2008b).
Based on this commitment, it was important to investigate the use of digital technologies in the teaching of the COM courses. The focus of this study was to establish whether, and if so how, the integration of digital technologies into the year-one Communication and Academic Literacy Skills courses at the University of Botswana supports the development of students’ academic literacies. Studies investigating the use of digital technologies to enhance students’ learning in communication and academic literacy in higher education in Botswana were not found; hence, this study is valuable in starting discussions in this area.

The purpose of this study was to find out what digital technologies year-one students use and how they use them in their learning in the Communication and Academic Literacy Skills course at the University of Botswana. In order to explore this phenomenon, the following research questions guided this study:

1. What technologies are available to first-year students taking the Communication and Academic Literacy Skills course at the University of Botswana?

2. How do first-year students use the digital technologies available to them to enhance their academic literacies?

3. What are first-year students’ perceptions about their use of digital technologies in learning?

4. What contributions do digital technologies make to the development of students’ academic literacies?

5. What are lecturers’ perceptions about the use of digital technologies to enhance students’ academic literacies?
3.5.1 Gaining Access to the Research Site

Getting permission to conduct research involves building rapport with those with whom you will be spending time so that they will accept you and your research. In order to ask for permission to carry out my study on the research site, I wrote to the deputy director of the Communication and Study Skills Unit. Secondly, I requested that he be part of the study. I also requested that he assist me with identifying lecturers who used digital technologies in the teaching and learning of the COM course.

Upon arrival at the site, I arranged for a meeting with the Deputy director as a follow-up to my written request to carry out the study in the unit. At the meeting, I further explained my study and, again, requested that he assist me with identifying lecturers who used digital technologies in the teaching and learning of their COM courses. He recommended three lecturers whom he described as being the most active in the unit in terms of using digital technologies in teaching and learning. All of the three lecturers consented to working with me, but one said that I could not use any of her classes since she was not using any technologies in the classroom. She, however, allowed me to interview her about her experiences with the use of technologies for learning and teaching.

3.5.2 Participant Selection

3.5.2.1 Sampling Strategy & Procedure

Purposive sampling was used to select participants for the study. According to Creswell (2007), purposive sampling procedures are predominantly used in qualitative research to select participants who have knowledge of the phenomena studied. It is a non-probability sampling technique used in qualitative research to select participants who have knowledge of the phenomena studied based on judgment rather than statistical probability.
Therefore, using purposive sampling provided me with an opportunity to select participants that could best inform the research questions and enhance my understanding of students’ use of digital technologies and their perceptions of technological use for enhancing their academic literacies.

3.5.2.2 Selecting the Participants

My target population for the study was all of the first-year students enrolled in the COM courses in the six faculties at the University of Botswana. As explained earlier, I first identified lecturers who were using digital technologies in the teaching and learning of the COM courses; once the two lecturers consented, I then asked them to select one of their classes for inclusion in this study. The consent forms that I received from the lecturers made the students in their two classes potential participants. The lecturers introduced me to their classes and gave me a chance to explain my study to the students. After explaining my study, I asked the students to complete a questionnaire. I explained to them that, after filling in the questionnaire, they may be asked to further participate in the study. The option of either participating or not was explained to them, as was their option to, if they signed the consent form, freely withdraw from the study at any time.

The COM course was taught in partnership with university librarians who were responsible for teaching the “Academic and Information Literacy Skills” module of the course. Librarians were assigned to different faculties to work with the CSSU lecturers teaching in those faculties. I sent a letter to two librarians who were working with the two lecturers selected for the study, explaining the purpose of my study and requesting their participation. They agreed to be part of the study, and I then requested both the librarians and the lecturers to sign consent forms to indicate their agreement to be part of the study.
Lastly, the Educational Technology Unit of the University of Botswana was responsible for supporting both staff and students with the use of digital technologies for teaching and learning. I sent a letter to the Director of the unit to request that he and the members of his unit participate in the study. He agreed to participate, as did the instructional designer. They both signed the consent form. All of the participants were given pseudonyms as outlined in Table 3.2, and the reasons for their selection are articulated for each participant.

Table 3.2

Profiles of Study Participants

<table>
<thead>
<tr>
<th>Position &amp; Department</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deputy Director, CSSU</td>
<td>DDC</td>
</tr>
<tr>
<td>Lecturer 1, Faculty of Humanities, COM 111</td>
<td>Lecturer Iko</td>
</tr>
<tr>
<td>Lecturer 2, Faculty of Business, COM 121</td>
<td>Lecturer Lipani</td>
</tr>
<tr>
<td>Academic Librarian 1, Humanities</td>
<td>Librarian Tose</td>
</tr>
<tr>
<td>Academic Librarian 2, Business</td>
<td>Librarian Bokani</td>
</tr>
<tr>
<td>Students, 60 students per class (60 x 2 = 120)</td>
<td>Pseudonyms were used for focus students.</td>
</tr>
<tr>
<td>Focus students, 10 from Humanities &amp; 10 from Business</td>
<td></td>
</tr>
<tr>
<td>Deputy Director, Educational Technology Unit</td>
<td>DDET</td>
</tr>
<tr>
<td>Instructional Designer, Educational Technology Unit</td>
<td>IDT</td>
</tr>
</tbody>
</table>

3.5.2.2.1 Deputy Director, CSSU

The participation of the deputy director as the coordinator of the unit was important in this study because his views provided insight into the ICT policy of the unit and its alignment to the strategic plan of the university. Furthermore, his perspectives on students’ and lecturers’ use of digital technologies to enhance learning in the COM courses were also valuable for this study.
3.5.2.2 Lecturers, CSSU

The recommendation of the two lecturers by the deputy director of the CSSU was based on their experience and use of digital technologies in the learning and teaching of the COM courses. Therefore, I considered their participation in the study to be essential in that their experiences would provide an understanding of how they, as instructors, perceived students’ use of digital technologies in the learning and teaching of the COM courses. The profiles of the lecturers are described below.

Lecturer Iko (Faculty of Humanities). Before joining the CSSU as a lecturer, Lecturer Iko worked as an interpreter in the courts in Botswana. With a Master of Arts in English and three years’ teaching experience in the teaching of the COM course in the CSSU, she identified herself as an avid user of digital technologies, both socially and in the learning and teaching of the COM course. She perceived the training she received from the Educational Technology Unit as very useful in enabling her to integrate digital technologies into the learning and teaching of her COM course.

Lecturer Lipani (Faculty of Business). With a Master’s degree in English-Language Teaching, Lecturer Lipani had been with the CSSU for more than seven years after having taught a communication and study-skills course in the colleges of education in Botswana. She described herself as an avid user of digital technologies both personally and professionally—hence, her keen interest in the use of digital technologies in the learning and teaching of the COM course. She attributed her interest in using digital technologies to the computer awareness module that she taught while in the colleges of education. She also perceived her membership in the e-learning committee in the CSSU as having motivated her to use digital technologies in learning and teaching. Furthermore, the training that she got
from the e-learning training courses offered by the Educational Technology Unit at the university enabled her to effectively use technologies in the learning and teaching of the COM course.

**Librarians teaching the “Academic and Information Literacy Skills” module.**

The two librarians who were selected as participants of this study had extensive experience in teaching the “Academic and Information Literacy Skills” module to first-year students. Before teaching the module in the CSSU, they both taught an information literacy skills course in the Faculty of Science. When the information literacy course was moved to the CSSU, Librarian Tose was attached to the Faculty of Humanities because he was also an academic librarian for the Faculty of Humanities, and Librarian Bokani was attached to the Faculty of Business for the same reason that she was an academic librarian for the faculty. The views of the two librarians on students’ use of digital technologies in the teaching of the course were important for this study because they provided insights into what technologies they perceived students use in developing their information literacies, what opportunities and challenges students had in the use of these technologies, and how supporting students could enhance the development of their academic literacies.

**3.5.2.2.3 Students**

The two COM classes had a total of 120 students, with 60 students in COM 121 doing a Bachelor’s degree in Business Information Systems, with subject area concentrations such as Statistics and Economics, and another 60 students in COM 111 pursuing a Bachelors’ degree in Humanities, with concentrations in French, English Language and Literature, African Languages and Literature, Media Studies, Archeology, and Environmental Science. Questionnaires were administered to both classes to establish
students’ uses of digital technologies in their academic and personal lives. A total of 63 (52.5%) questionnaires were returned by the respondents, with 22 from the Humanities class and 41 from the Business class.

Based on the questionnaires received, ten students from each of the classes were selected to form focus groups. The criteria for selection were based on what students perceived to be their level of expertise in the use of digital technologies, as well as their type and frequency of access to digital technologies on and off campus. I gave the selected students consent forms to sign, but, before they signed them, I explained to them that the information that they were going to provide would not be shared with anybody and that they were free to leave the study at any time. Although they all consented, 8 out of 10 students in the Faculty of Humanities and 5 out of 10 students in Business actually participated in the study individually and/or as a group. Follow-up with students who had consented, but were not coming for scheduled meetings, were made, but still students did not attend the meetings. In addition, although I had planned to have two focus group meetings with each of the groups, because of students’ tight and conflicting schedules, I ended up interviewing students either individually or in pairs and had only one focus group meeting with the Humanities group at the end of the term.

3.5.2.2.4 Educational Technology Unit

The Educational Technology Unit of the University of Botswana was tasked with ensuring that lecturers and students had the necessary support in the use of digital technologies in the learning and teaching process within the university by providing professional development workshops and also securing technological infrastructure for learning and teaching. The deputy director of the Educational Technology Unit was selected
for the study because his participation provided me with insight into the university’s ICT policy and its implementation. The instructional designer’s participation was important for providing me with an understanding of the role that the unit plays in supporting lecturers and students in the use of digital technologies for learning and teaching. In addition, I needed to find out the successes and the challenges that lecturers faced in designing courses in the learning management systems (LMSs) and the use of digital technologies for learning and teaching generally in the university.

The sample for this study was small because the aim was to utilize participants that would provide data that were relevant to the objectives of the study (Neuman, 2005). According to Maxwell (2009), studying a relatively small number of individuals or situations enables understanding of events, actions, and meanings that are shaped by the unique circumstances in which they occur. In my selection, I was concerned with ensuring that the range of study participants would enable me to obtain various perspectives that would provide insights into the phenomenon I was investigating (Maxwell, 2013; Patton, 2002). According to Patton (2002), the power of purposeful sampling lies in selecting “information-rich cases whose study will illuminate the questions under study” (p. 46). Therefore, this sample enabled me to answer the research questions and achieve the aim of the study so that findings could be potentially transferable to similar research contexts (Kvale & Brinkmann, 2009).

3.5.3 Data Sources

In order to gain a full understanding of first-year students’ use of digital technologies in the COM course, as well as their perceptions on whether digital technologies contribute to the development of their academic literacies, I gathered data using a combination of sources:
a questionnaire, semi-structured interviews, observations, and document reviews. Triangulating these sources provided me with a rich, comprehensive, and well-developed understanding of students’ use of digital technologies, as well as their views, opinions, and experiences in their use. It also allowed me to compare data provided by the different participants, therefore, enhancing the reliability and validity of the findings. Using these data collection methods also provided me with insights into my role as a researcher in qualitative research because, as an instrument of data collection, it was important for me to be reflexive about whatever might affect the data I gathered and analyzed—for instance, the sample size, interview questions, and other iterative series of decisions and adjustments that I had to make throughout the research process based on my observations and the information that the participants provided.

### 3.5.3.1 Questionnaire

A questionnaire was administered to 120 students in the two classes that were selected for this study. The questionnaire had both quantifiable and open-ended items and was administered at the beginning of the study to collect data on: (a) students’ background information (e.g., age, gender, educational background, faculty, program of study); (b) the types of digital technologies that students use for education and for leisure; (c) the frequency with which they use these digital technologies; (d) their perceptions of their own digital literacy skills (with “beginner” defined as not knowing how to use digital technologies, “intermediate” defined as being able to use digital technologies but with some assistance, and “advanced” defined as knowing a lot about digital technologies and being able to use digital technologies without support); (e) support they require in order to use digital technologies in the course; and (f) their perceptions of the value of using digital technologies to support
academic literacies in higher education. The frequency of use of the various digital technologies was measured on a Likert scale, with 1 being “never,” 2 being “monthly,” 3 being “fortnightly” [i.e., every two weeks], 4 being “weekly,” and 5 being “daily.” Questions for the last two aforementioned categories (i.e., e and f) were open-ended and generated qualitative data on students’ views on the perceived value of using digital technologies for enhancing their academic literacies. (See Appendix A.) Of the 120 questionnaires administered to students, 63 were returned, from which I selected 10 focus students for an in-depth study of the phenomenon. Using the questionnaire at the beginning of the study was beneficial because it helped me to identify focal participants. The data from the questionnaires also helped me to fill in the gaps in the study through follow-up questions asked during interviews with participants.

3.5.3.2 Interviews

As a primary source of data, interviews were supplemented with data collected through classroom observations, the questionnaire, and document reviews. I used semi-structured interviews with open-ended questions and, as necessary, follow-up questions. The interview guides (see Appendix B) acted as a kind of aide-mémoire to prompt me about the areas to cover without stipulating the order in which I have to ask the questions, thereby allowing for flexibility in the wording. Semi-structured interviews were used with the CSSU deputy director, the two CSSU lecturers, the Educational Technology Unit deputy director, the instructional designer, the two academic librarians, and the thirteen focus students. Interview sessions ranging between 50–60 minutes took place from October, 2013, to February, 2014. Using open-ended questions from the interview guide allowed me to probe the participants for further detail and description on topics such as students’ use of digital
technologies for learning and teaching, their views on the value of using digital technologies to support academic literacies development, students’ and lecturers’ access to digital resources, perceptions of the role of lecturers in supporting students’ academic literacies, and the institutional policies and structures that support the use of digital technologies for learning and teaching. In addition, open-ended questions allowed participants to express their thoughts more clearly and freely and talk about their experiences without feeling that they were judged. The less interrogatory and more conversational style allowed me to closely interact with participants who became more open about their experiences, enabling me to gain a more in-depth understanding of their perspectives of the issues under investigation.

Individual interviews with focus students were conducted in my office, which provided us with a private space and allowed students to comfortably share their knowledge and experiences in a non-threatening environment. Although students were supposed to be interviewed individually, in some instances, they were interviewed in pairs because of time constraints. For academic staff, interviews were conducted in their own offices, where they felt more comfortable. Only one focus group interview was conducted at the end of the first semester in the departmental boardroom, with all eight participants from the Humanities class participating in the interview. The focus group from the Faculty of Business could not find time when all of them were available, so there was no focus group interview for them. During the interaction with the Humanities focus group, questions posed were about digital technologies they used in the course, the support they received in their use, and whether they perceived their use as having contributed to the development of their academic literacies. Using the focus group interview was important in “capturing [students’] voices and allowing
them to explain, illustrate, and expand answers in an environment with people who had similar literacy levels” (Ladbrook & Probert, 2011, p.112) and experiences. Students were able to feed off each other in contributing their insights and experiences with using digital technologies in the learning and teaching of the course. (See Appendix B for student interview guides.)

With the participants’ approval, I used a digital audio recorder to capture participants’ responses to ensure accuracy in the transcriptions. I also took handwritten notes, which enabled me to keep track of points that I followed up later in the interview or highlight ideas of particular interest or importance. The audio-recorded material was downloaded into my computer and later transcribed. At the end of each interview session, I summarized the key points and, if there were any gaps in the data, I followed up either through e-mail or telephone, or I set up another interview with the participants. This process was in line with Seale (1999), quoted in Roulston (2010, p. 84), who emphasized the importance of member-checking or member validation in research, stating that it can be accomplished in a number of ways; for example, participants may be given transcripts of interviews to check and/or add to. Researchers might also include a discussion of preliminary findings in another interview with participants.

Each data set from the interviews was transcribed using the Jefferson approach (Potter & Hepburn, 2005), where the interactions between the interviewer and the interviewee are shown through a line-by-line transcription. According to Potter and Hepburn (2005), a detailed transcription of interview data allows the researcher to be clear and specific when referring to the elements of talk. Therefore, researchers should provide a form
of transcription of talk that allows readers to make a full evaluation rather than one that may already embed their own theoretical assumptions.

3.5.3.3 Observations

According to Lacano, Brown, and Holtman (2009), participant observation involves the researcher participating in a situation, while, at the same time, recording what is being observed, therefore, offering the researcher a chance to obtain unique insights into an organization or social group. Using participant observation enabled me to observe literacy events in the COM classrooms with minimal involvement while, at the same time, determining what was being done, how, and by whom, allowing me to develop a full understanding of students’ and lecturers’ digital literacy practices in the classroom. I observed what digital technologies were used, how, and for what purpose in the learning and teaching of the course and what support, if any, students received in the use of digital technologies to facilitate learning in line with the objectives of the topics they were taught.

During my observations, I took handwritten notes that I used to systematically and comprehensively describe everything that happened during the class session (Wolfinger, 2002). In order to avoid losing important information, I wrote, as much as I could, what I saw and heard during the observation and, immediately after, I elaborated on the notes, described the observations, and analyzed classroom interactions in detail. In addition, I took photographs of students’ and lecturers’ use of digital technologies and video-recorded class sessions, which I then uploaded onto my computer and dated them the same as their corresponding field notes. I used photographs and video clips to remember and study in detail what I might have overlooked during classroom observation. I also used them to enrich the field notes and generate follow-up questions with participants during interviews.
My actions were informed by Heath, Street, and Mills (2008), who argued that “qualities of the best ethnographer and what it takes to be a participant observer include visual acuity, keen listening skills, tolerance for detail, and capacity to integrate parts into shifting wholes” (p. 57).

My classroom observation coincided with the time students were doing their library research projects. The requirements for the project were that students needed to work in groups to select a topic, conduct research in the library on their topic of choice, and then submit a written report. Although the requirements were similar for both the Humanities and Business groups, students in the Humanities were further required to choose any social media and discuss the project online instead of meeting face to face.

Over a period of six weeks, I was able to observe four lessons in each class since class sessions were often cancelled to give students time to work on their projects in their groups outside of class. In addition, I had informal discussions with small groups after class sessions. The logistics of observing small groups working on their research projects outside of class were complex because students taking the COM courses came from different subject departments and faculties; therefore, their work and class schedules conflicted, and agreeing on a suitable time to meet with them as a group was not possible. Students worked individually in their own spaces and then either met a day before they were scheduled to submit their work to compile their individual contributions or sent their individual contributions to one member of the group to compile the contributions prior to submitting the project.
3.5.3.4 Document Review

Bowen (2009) describes document analysis as a systematic procedure for reviewing or evaluating documents—both printed and electronic (i.e., computer-based and Internet-transmitted) material. In qualitative research, documents are useful for gathering information on the background and context of a particular setting; in this study, I examined departmental handbooks, mid-term reviews, departmental minutes, program proposals, organizational/institutional policy documents, reports, course syllabi, and course instructional materials. I also used data from students’ interactions with peers and lecturers online. These documents provided me with an understanding of the beliefs and values of participants about the use of digital technologies for learning and teaching at the university. Documents obtained during the process of research were gathered, analyzed, and used to supplement research data gained through interviews and observations. For example, I used some of the information from documents to fill in gaps in the data as I was doing class observations, as well as to frame additional questions for interviews. This information enhanced my understanding of what digital resources students used and for what purposes.

3.5.4 Data Analysis

Qualitative data analysis is an iterative, spiraling, or cyclical process (Creswell, 1998; Palys, 1997; Silverman, 2000) that a qualitative researcher engages in throughout all phases of the research (Thorne, 2000). It involves the identification, examination, and interpretation of patterns and themes in textual and visual data and determines how these help answer research questions at hand. Data analysis may begin informally during interviews or observations and continue during transcription, when recurring themes, patterns, and
categories become evident. Once written records are available, analysis involves the coding of data and the identification of salient points or structures (Miles & Huberman, 1994).

For this study, I analyzed both qualitative and quantitative data from the data sources. From the questionnaires, responses that yielded quantitative demographic data about the participants and their use of digital technologies for teaching and learning were compiled and analyzed using descriptive statistics; for example, quantitative data regarding participants’ personal educational backgrounds, types of technologies they use, and their digital literacy levels were presented in tables, graphs, and descriptive statistics. Interview data was summarized or presented as quotations under different themes. Data on students’ perceptions about the use of digital technologies in the learning and teaching of the course were coded with data collected from questionnaires, individual and group interviews, and observations. Roulston (2010) observed that inductive analyses are based on the assumption that inferences can be developed by examining empirical data for patterns; for example, by examining qualitative data in the form of documents, field notes, or interview scripts, researchers can locate patterns and commonalities that contribute to the generation of theory (p. 150).

3.5.4.1 Thematic Analysis

Thematic analysis (TA), which was used in this study, assumes the approach described by Roulston (2010). Braun and Clarke (2006, 2012) described TA as a method used for identifying, analyzing, and reporting patterns (i.e., themes) within qualitative data. This approach—an ongoing, fluid, and cyclical process that starts with data collection—is the process of looking for meaning and issues of potential interest in the data, as guided by the research questions, and ending with reporting of the content and meaning of patterns
emerging from the data. It involves searching across data sets—be they a number of interviews, or focus groups, or a range of texts—to find repeated patterns of meaning (Clarke & Braun, 2013, p. 122). TA is considered to be a flexible and useful research method that is used to provide a rich and detailed, yet complex, account of data. Alhojailan (2012) contends that TA allows the researcher to determine precisely the relationships between concepts and compare them with the replicated data. By using TA, there is a possibility to link various concepts and opinions of participants and compare these with data that have been gathered in different situations, at different times, during the project (Alhojailan, 2012, p. 40). According to Roulston (2010), the key features of TA are codes, data categories, and thematic representation. This method also allows for data to be coded without fitting them into a pre-existing coding frame or the researcher’s analytic preconceptions.

The TA approach outlines six phases that should not be regarded as comprising a linear and sequential model, where one cannot proceed to the next level without having completed the prior phase; rather, the six phases should be regarded as recursive, as they do not always happen exclusively from one another. As a researcher, I found these phases of the TA approach helpful for use in analyzing the qualitative data for my study. Although I presented these phases in a linear fashion when I was analyzing the data, I went back and forth between these phases to refine and redefine codes and themes. I will now explain the steps I undertook in my TA.

3.5.4.1.1 Step 1: Familiarization with the Data

This process entails one’s immersion in the data by reading, re-reading, and noting any initial analytic observations. Going through this process was important for me because it enabled me to fully familiarize myself with the depth and breadth of the data content before
coding it. I began my analyses with transcribed interview data. The field notes that I compiled during the interviews and observations were a useful complementary source of information to facilitate the analysis process. The transcribed interview data were read several times to ensure accuracy of the transcript and where there were gaps in the transcript, I listened to the audio recordings multiple times to fill in the gaps. I concurrently thought about the meaning of the data, so I made notes on the margins about issues and ideas that were relevant to the research questions. For example, my observations were that participants in this study considered digital technologies to be useful for learning in academic contexts since the technologies can afford students opportunities to develop academic and professional literacy skills. However, they highlighted challenges that they perceived constrained effective use of digital technologies in learning and teaching of the COM course.

3.5.4.1.2 Step 2: Generation of Initial Codes

In this step, each data item had to be coded, and all of the codes and relevant data extracts, collated. In order to generate initial codes, each interview transcript was read carefully to identify meaningful units of text. I created a table that I used to organize the data for each interview transcript according to the participant, transcription, initial codes, related questions, and my reflections, comments, and/or questions raised. I highlighted whole text segments or specific lines which I considered relevant to the research questions and assigned initial codes to the highlighted extracts. This process generated numerous initial codes to which I assigned research questions that the extracts might answer. I jotted down notes in the comments section that helped me to make sense of the data and make connections with other codes throughout the data items.
Table 3.3

*Initial Coding Process: Student Participant Sample*

<table>
<thead>
<tr>
<th>Transcription</th>
<th>Initial Code</th>
<th>RQ</th>
<th>Comment/Explanation/Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PK: Like for example, taking for example Facebook ah, I mean <strong>it was my first time to use Facebook.</strong></td>
<td>Introduced to Facebook because of group work</td>
<td>1/2</td>
<td>Students introduced to Facebook in order to complete academic work.</td>
</tr>
<tr>
<td>BC: Eh</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PK: Eh, if <strong>it was not because of the group</strong> I would not have, I would not have used this social media</td>
<td>social media helpful in group work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BC: Ah</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PK: It’s the first time I have.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BC: So you, did you find it helpful though?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PK: I did, <strong>I did find it helpful</strong>.. I did find it helpful, because [pause] especially, <strong>especially on the group work.</strong> And even apart from the group work like I said <strong>socializing with people. that you never spoke with</strong> just because you’re on Facebook they send you a friend request then you confirm it then <strong>you start a conversation</strong></td>
<td>socializing with strangers using Facebook for academic communication</td>
<td></td>
<td>Students are able to broaden their social context with other learners through social media such as FB.</td>
</tr>
<tr>
<td>BC: A conversation for school work or?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PK: School work</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BC: Ah</td>
<td>Facebook for communication on current affairs/ current discussion.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PK: like <strong>some would post questions</strong> Some, some, some would even <strong>comment on anything that is just ongoing.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* “RQ” means “research question.”
3.5.4.1.3 Step 3: Search for Themes

Using the initial code list, I identified similarities in the data, and then I clustered the codes together to represent common themes. These codes were then compared across interview transcripts to identify underlying patterns and also to draw out links between the themes. In addition to using interview transcripts, I analyzed and coded data from the open-ended questions on the questionnaire, along with notes from classroom observations, field notes, and some official documents. These codes were added to the collated themes and sub-themes. Although the account here is linear, the process that I engaged in was iterative; I moved back and forth between the two phases. At the end of this step, the codes had been organized into broader themes that described patterns in the data relevant to the research questions. Table 3.4 shows preliminary themes, along with the associated codes that were collated in Step 1 of the analysis process. It is also worth noting that, while some of the codes appeared under only one theme, others appeared under more than one theme, or did not belong to any of the themes, hence, becoming outliers.

Table 3.4

**Preliminary Themes Developed from Initial Code-Clustering**

<table>
<thead>
<tr>
<th>Theme: Students’ use of digital technologies during instruction</th>
<th>Theme: Students’ perceptions of and attitudes toward the use of digital technologies for learning and teaching</th>
<th>Theme: Use of the Learning Management Systems (LMSs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Codes: Use of video/audio materials</td>
<td>Codes: Development of life-long learning</td>
<td>Codes: Students access to and use of WebCT learning material</td>
</tr>
<tr>
<td>Online learning</td>
<td>Digital literacies for life-long learning</td>
<td>Use of assessment tools on WebCT</td>
</tr>
<tr>
<td>Use of Blackboard</td>
<td>Use of technologies for university and beyond</td>
<td>Access to LMS</td>
</tr>
<tr>
<td>Use of Moodle</td>
<td>Students lack of</td>
<td>Students access notes</td>
</tr>
<tr>
<td>Online course material</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
and submit assignments

• Assessment tools not used
• Digital technologies for oral presentations (pedagogy/literacy practice?)
• Use of PP for presentation (pedagogy)
• Submission of assignments online
• Class size and use of technologies (perceived constraint)
• Technological equipment in classrooms for learning and teaching (affordance?)
• Wireless network
• Internet reliability
• Prevalence of viruses (constraints)
• Pedagogies for using technologies (could be an explanation of how they are used / students’ perceptions of what is used and the effectiveness of the pedagogies)
• Perceived constraints
• Lecturer as facilitator, manager
• Communication tools: social networks
• LMS communication tools
• Provision of technologies in the classrooms useful for instruction
• Availability of the Internet

motivation
• Inadequate access
• Lecturer support is limited
• Perceived affordance of technology use
• Perceived constraints from Moodle and Blackboard
• Uploaded course material
• Uploaded materials on LMS
• Sending assignments through Blackboard
• Submitting assignments through Blackboard
• Signing up for groups on Blackboard
• Use of Blackboard for notes and assignments
• Student support on WebCT
• Blended learning
• Online assessment
• Use of discussion boards
• Use of memory/data stick to download course material from LMS
<table>
<thead>
<tr>
<th>Theme: Online assessment</th>
<th>Theme: Development of academic literacies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Codes:</td>
<td>Codes:</td>
</tr>
</tbody>
</table>
| • Designing questions for online assessment | • ICTs for academic purposes  
• Use of videos for analysis of text  
• Students’ textual-borrowing practices of online texts  
• Citing sources  
• Paragraph development  
• Teaching essay writing  
• Online software for referencing  
• CSSU partnership with librarians  
• Cutting and pasting of information  
• Copy and paste chunks of data  
• Lack of synthesis skills  
• Reconsidering pedagogies for teaching writing  
• Use of software for writing |
| • Training need for online assessment | • Current student cohort tech savvy  
• Copy and paste chunks of data  
• Lack of synthesis skills  
• Pedagogies for using technologies  
• Perceived constraints  
• Reported use  
• Making students use technologies (pedagogies)  
• Technologies develops students’ graduate attributes  
• Flexibility in learning  
• Interactivity  
• Students’ lack of motivation to use ICTs  
• Students lack of skills transfer  
• Lack of research skills that they learn from the “Academic and Information Literacy Skills” module.  
• Students lack search strategies  
• Access to LMSs  
• Delayed real-time feedback  
• Lack of ICT skills  
• Use of innovative pedagogies  
• Inadequate resources  
• Availability of the Internet  
• Unreliable network  
• Access to keys for the |
podium that houses IT equipment in the teaching rooms
• Librarian support
• Lack innovation in learning/teaching
• (sub-theme? of students’ use? - the pedagogies used could be an effect of lecturer perceptions of students’ digital literacies)

<table>
<thead>
<tr>
<th>Theme: Staff professional development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Codes: ICT training at UB</td>
</tr>
<tr>
<td>Training need for online assessment</td>
</tr>
<tr>
<td>Lecturer expertise/ICT skills</td>
</tr>
<tr>
<td>Lecturer confidence</td>
</tr>
<tr>
<td>Perceived lecturer role</td>
</tr>
<tr>
<td>Lecturer role</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Theme: Development of information literacies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Codes: Using online databases for research</td>
</tr>
<tr>
<td>Students’ online information search practices</td>
</tr>
<tr>
<td>Citing sources</td>
</tr>
<tr>
<td>Introducing students to online resources</td>
</tr>
<tr>
<td>Paragraph development</td>
</tr>
<tr>
<td>Teaching essay writing</td>
</tr>
<tr>
<td>Online software for referencing</td>
</tr>
<tr>
<td>CSSU partnership with librarians</td>
</tr>
<tr>
<td>Supporting students in accessing online library catalogues</td>
</tr>
<tr>
<td>Use of Google Scholar</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Theme: Use of digital technologies for communicating with lecturer and peers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Codes: Use of mobile phones</td>
</tr>
<tr>
<td>Facebook for communicating with peers</td>
</tr>
<tr>
<td>Use chat to communicate with lecturer</td>
</tr>
<tr>
<td>Use mail tool to communicate with lecturer</td>
</tr>
<tr>
<td>Texting</td>
</tr>
<tr>
<td>Voice calls</td>
</tr>
</tbody>
</table>

Note. WebCT was a former LMS used at the University of Botswana.

3.5.4.1.4 Step 4: Review and Refinement of Themes

Further coding was done to ensure that no codes were missed and that it was clear how the themes fit together. During this process, I considered whether the themes worked in
the context of the entire data set and whether they properly answered the research questions. Further, I considered how the data related to the literature and theoretical frameworks from which this study draws. For example, concepts such as “students’ use of ICTs for learning in digital contexts,” “issues of access,” “perceived affordances of ICT use in learning,” “changing roles of educators,” and “innovative pedagogies” needed to support 21st-century student learning needs. When cleaning up the data, I considered whether some codes overlapped and needed to be moved to different, more appropriate, themes, or whether some themes were related and, therefore, had to be combined to develop new themes that were more encompassing. Lastly, I considered which themes did not work very well or were not related to the research questions and had to be discarded. This iterative process enabled me to move back and forth between the TA phases. Engaging the theoretical frameworks of this study and drawing from other people’s work also enabled me to interpret and make links in order to formulate a complete picture of students’ use of digital literacies in the COM course to enhance their academic literacies.

While engaging in this process, I considered the first theme, “student use of classroom digital technologies for learning,” to be an important theme in exploring the technologies that students used during instruction, why they used these technologies, and the challenges, if any, encountered in their use and how these constrained students’ performance during literacy events. It was also evident at this point that issues of access to digital technologies, such as computers and the provision of the Internet on and off campus, ran across the themes and put into context the complexities of student access to and use of these technologies in learning and teaching in order to meet their educational needs.
The second theme, “learning management systems (LMSs) for teaching and learning,” was formed from two sub-themes—“use of the LMS” and “online assessment”—which were combined since the concepts of students’ use and perceptions of using LMSs for learning and assessment were considered to be related. This second theme explored students’ access to and use of LMS tools for course instruction, as well as assessment factors that may or may not contribute to the effective use of LMS tools by students. Lastly, the importance of the university and lecturer support in motivating students to use the LMS was highlighted.

The third theme was derived from a combination of two themes—“development of academic literacies” and “development of information literacies”—which were considered to reflect two aspects of students’ academic literacies and, as such, were considered to be related. Hence, the theme “development of student academic literacies in digital contexts” was considered to encompass participants’ data that reflected opportunities that technologies afforded students and the challenges students encountered in their use of technologies during academic reading and writing events. The two sub-themes derived from this theme were (a) “students’ use of the Internet and other digital tools to access and use information for academic research,” which explored data on students’ access to and use of online resources such as search engines and online library databases, and the support they received from librarians in the use of these resources for academic work; and (b) “students’ use of digital tools to compose and produce academic texts”—that is, what digital tools and software students used to compose texts, how they used them in their writing, the challenges students encountered in the use of these tools for writing, and the role of the lecturer in supporting students in the use of digital texts for writing.
The fourth theme, “digital technologies for academic communication,” was generated to capture two sub-themes: (a) “students’ use of LMS communication tools” and (b) “students’ use of social media tools, such as Facebook and mobile phones.”

The fifth theme, “student and lecturer perceptions of digital technologies for learning and teaching,” was the result of combining two related sub-themes on perceptions and attitudes of students and academic staff. This theme captured data about students’ and lecturers’ attitudes and perceptions of the use of technologies for learning and teaching and perceptions of the value of using technologies in academic contexts.

Lastly, codes within the sub-theme “staff professional development” were considered to be related to most of the themes. For this reason, the codes were moved to the relevant themes, and the original theme was discarded.

During this process, comparing and contrasting extracts from data sets enabled me to relate the data to research questions, to concepts related to digital literacies and academic literacies in the literature review, and the theories used in this study. I developed a holistic understanding of what and how digital technologies were used to enhance students’ learning in the Communication and Academic Literacy Skills course at the University of Botswana.

In conclusion, changes were made to the initial themes during Step 4 (i.e., review and refinement of themes), which reduced the number of themes to five:

1. student use of classroom digital technologies for learning,
2. learning management systems for teaching and learning,
3. development of student academic literacies in digital contexts,
4. digital technologies for academic communication, and
5. student and lecturer perceptions of digital technologies for learning and teaching.
### 3.5.4.1.5 Step 5: Definition and Naming of Themes

In this step, a further refinement and renaming of the themes was done to ensure a good understanding of how the themes fit together and what story they tell about the data (Braun & Clarke, 2006). At this point in the analysis, the focus was on what major themes emerged and how these related to the overarching purpose of the study—which was what and how digital technologies are used to enhance students’ learning in the *Communication and Academic Literacy Skills* course at the University of Botswana. The five broad themes and their sub-themes are explained in Table 3.5.

#### Table 3.5

**Broad Themes and Related Sub-Themes**

<table>
<thead>
<tr>
<th>Theme</th>
<th>Sub-theme(s)/Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Student use of classroom digital technologies for learning</td>
<td>- What technologies students used in the classroom and how students used these digital technologies to support their learning during instruction</td>
</tr>
<tr>
<td>2. Learning management systems for teaching and learning</td>
<td>- Students’ access to and use of LMS tools for course instruction and assessment</td>
</tr>
</tbody>
</table>
| 3. Development of student academic literacies in digital contexts | - Students’ use of the Internet and other digital tools to access and use information for academic research  
  - Students’ use of digital tools to compose and produce academic texts |
| 4. Digital technologies for academic communication          | - Students’ use of LMS communication tools  
  - Students’ use of social media tools, such as Facebook and mobile phones                         |
| 5. Student and lecturer perceptions of digital technologies for learning and teaching |                                                                                                                                                             |
3.6 Ensuring Trustworthiness

Qualitative research has been criticized for lacking rigor and credibility. According to Vaismoradi, Turunen, and Bondas (2013), in order to ensure quality, research demands processes that are systematic, rigorous, and auditable; hence, researchers are urged to articulate their findings in a manner that the logical processes by which the findings were developed are accessible to a critical reader, the relationship between the actual data and the conclusions about the data is explicit, and the claims made in relation to the data set are rendered credible and believable. Thus, ensuring rigor and trustworthiness in qualitative research warrants employment of trustworthiness criteria such as transferability, dependability, conformability, and credibility (Lincoln & Guba, 1985). Transferability generalizes study findings and attempts to apply them to other situations and contexts. This criterion suggests the investigator has the responsibility of ensuring that sufficient contextual information about the fieldwork sites is provided to help the reader to determine whether they can confidently transfer results and conclusions presented to other situations. Secondly, dependability involves detailed reports of processes within the study that would enable future researchers to repeat the work and gain the same results. The third criterion, conformability, is the level of confidence that the findings of the research are based on the narratives and words of the participants and not potential researcher biases; techniques such as triangulation and audit trails can be used to establish conformability of research. Lastly, credibility as a criterion for ensuring trustworthiness in research establishes whether the research findings represent plausible information drawn from the participants’ original data and whether the research findings are a correct interpretation of the participants’ original views. In order to
ensure trustworthiness in this study, I used the following strategies: prolonged engagement, triangulation, persistent observation, and member-checking (Lincoln & Guba, 1985).

3.6.1 Prolonged Engagement on the Research Site

First, this study was conducted over a period of six months, and multiple sources of data were used to ensure trustworthiness of the findings. Qualitative research emphasizes that the researcher should spend a substantial amount of time on the research site in order to interact and build rapport with the participants and, in turn, be able to collect information that will be regarded as credible. For this study, I spent six months on the research site with the research participants.

Although students were introduced to me, and the purpose of my presence in their classrooms was clearly explained to them, I felt that my presence in the classrooms did not allow them to be free to communicate and interact with their lecturers and their peers. However, with the several visits to the classrooms, I noticed that students became not only freer to communicate and interact with their lecturers and their peers, but some of the groups also involved me in their discussions by asking me questions on topics they were discussing for the group project. This prolonged engagement with student participants in their literacy events in the COM 111 and COM 121 classrooms afforded me opportunities to observe their digital literacy practices. I was able to observe what digital technologies were available for use by students and, if they used them, how they used them in the courses to enhance learning. The interactions outside the classroom with focus students enabled me to gain insights into their perspectives on the value of using digital technologies to enhance their learning in the COM courses and the support they received in using those digital technologies in the COM courses and in their larger academic and professional learning.
contexts. Further, I was able to appreciate the challenges that students encountered in accessing and using digital technologies for learning at the university. My prolonged interactions with other participants such as CSSU lecturers, librarians, and the Educational Technology Unit staff also provided me with a greater understanding of different perspectives on students’ use of digital technologies and the support that students were offered in order to enhance learning in the COM courses and in the larger context of their learning at the university.

3.6.2 Triangulation of Sources

Triangulation is recommended in qualitative research because it reduces bias and allows for cross-examination of the integrity of participant responses (Anney, 2014). Multiple data sources (i.e., interviews, observations, a questionnaire, and document reviews) were used in this study to enhance the data I was collecting from the research participants. The employment of multiple data-collection methods such as a survey, interviews, observations, and document analysis was useful for my understanding of students’ use of digital technologies and stakeholder perspectives on the use of digital technologies to enhance learning; it was also useful for clarifying the processes that took place in classrooms specifically and at the university in general (Neuman, 2014; Patton, 1990). Triangulating these sources enabled me to examine the data from different perspectives—from those of students and lecturers in the CSSU, members in support services such as the Educational Technology Unit and the library, and institutional administrators such as the deputy director in the CSSU and the deputy director of the Educational Technology Unit.
3.6.3 Persistent Observation

According to Maxwell (2009), participant observation allows for close relationships with participants and, thus, enables the researcher to expand their understanding through non-verbal, as well as verbal, communication; process information (i.e., data) immediately; clarify and summarize material; check with respondents for accuracy of interpretation; and explore unusual or unanticipated responses (Maxwell, 2009). As a participant observer, I studied phenomena as they occurred in natural settings, attempting to make sense of, or interpret, these phenomena in terms of the meanings people bring to them (Denzin & Lincoln, 1994). I needed to fully explore the study context; thus, I had to establish and maintain close relationships with research participants within the CSSU at the University of Botswana. Since data collection and analysis in qualitative research are iterative processes, I had to be revising and reviewing the data-collection instruments, generating new questions, and raising further questions in order to clarify and summarize the findings.

3.6.4 Member-Checking

As a qualitative researcher, I was aware that member checks are at the heart of credibility and were, therefore, a crucial process I had to undertake (Lincoln & Guba, 1985). I acknowledged the importance of member checks as a way to include the voices of respondents in the analysis and interpretation of the data (Anney, 2014). For this reason, I gave the transcribed interviews to lecturers so that they could confirm their responses before I analyzed them. This process was critical because I wanted to make sure that I did not misrepresent the views of the participants. In cases where I was unable to send back transcripts, I would call to confirm some of the information with the participants and clarify
some of the gaps of information that appeared on the transcripts in order to eliminate bias and inconsistencies.

3.7 Being a Reflexive Researcher

Qualitative research involves a certain degree of reflexivity—that is, “self-questioning and self-understanding” (Cumming-Potvin, 2013, p. 218), and acknowledging one’s own subjectivities, assumptions, world views, biases, theoretical orientations, values, and epistemological stances (Merriam, 2002; Roulston, 2010). My journey as an educator started in the early 1980s as a teacher of English in secondary schools in Botswana. After nine years of teaching in secondary schools, I joined the Colleges of Education as a teacher trainer in the Communication and Study Skills (CSS) department in Molepolole College of Education. I then joined the University of Botswana as a lecturer in the Communication and Study Skills Unit (CSSU), a position I held while conducting this research study.

My experience with using digital technologies for learning and teaching started when I was teaching at the Colleges of Education; one of the mandates of the CSS department was to teach computer awareness to all teacher trainees throughout their three-year teacher training programme. The computer-awareness module, which was taught within the Communication and Study Skills course, was aimed at equipping teacher trainees with the basic computer skills (e.g., in Microsoft Word, Microsoft Excel, and Microsoft Access) which are required for academic success while at college and also applicable in their world of work. Since I was a language teacher and was expected to teach the computer-awareness course, I was provided with professional development courses on the computer skills I was expected to teach, as well as on the skills that I needed to teach said computer skills to teacher trainees.
When I joined the university, the expectation was that all departments needed to integrate technologies into the learning and teaching of their courses. I was introduced to the use of WebCT, a former LMS used at the university, for teaching and learning with the expectation that I was to use it in the learning and teaching of my courses. In addition to using the LMS, I was also able to explore other innovative ways of using digital technologies in learning and teaching, such as presentation software, communication tools (e.g., video conferencing), and the use of electronic posters for assessing students’ academic research projects. This engagement with technologies in learning and teaching at the university ultimately led to my interest in conducting research in the use of digital technologies to enhance learning in the Communication and Academic Literacy Skills (COM) courses.

At the University of Botswana, blended learning was adopted as an approach to learning and teaching, and the university had put into place technological infrastructure to support the use of digital technologies in learning and teaching of courses. In addition, the Educational Technology Unit at the university, which was responsible for staff development in the use of technologies, offered workshops geared toward supporting lecturers with strategies they could employ when using digital technologies to enhance students’ literacy practices. Therefore, I conducted this research with the hope of understanding ways in which students use digital technologies to enhance their learning in the COM courses and their perceptions on how the use of these technologies enhances their learning within the larger academic context of the University of Botswana.

Involved in this study as both a researcher and a lecturer in the CSSU, the challenge for me during the data collection and data analysis processes was to distance myself from a context I was too familiar with and avoid bias. Being a member of this unit, it was
important—to enhance the trustworthiness, transparency, and accountability of this research (Finlay, 2002, p. 211)—to position myself within this study and make explicit how intersubjective elements impact data collection and analysis. Therefore, the reflection I engaged in enabled me to, as much as possible, be aware of how my actions and my prior knowledge about my research site could influence the participants’ actions. Merriam (1998) posits that, instead of trying to eliminate these biases, a researcher needs to identify them and monitor how they may be shaping the collection and interpretation of data. I was aware of my own personal biases, assumptions, preconceptions, and perspectives which could cloud and influence the data collection and data analysis processes, as well as the findings of the study—hence, my need to be reflexive about how these perspectives may impact the research outcomes. Presenting data that would make sense to readers was also important to me during the data collection and analysis; thus, it was critical that I meticulously sift through the data and cull out interesting information to find the best story (Stake, 1995). Although challenging at first, relying on engagement with and interest in the use of technologies for teaching and learning and the experience gained from teaching at the tertiary level provided me with the necessary tools to complete the task.

3.8 Ethical Considerations

Self-reflection should include acknowledgement of dilemmas encountered in the research process, including ethical issues. Therefore, it was important for me to follow ethical procedures to ensure participants’ confidentiality. Permission to conduct research was obtained from and granted by the University of British Columbia in August, 2013. (See Appendix C.) In September, 2013, I wrote to the deputy director of the CSSU at the University of Botswana, requesting permission to carry out research in the unit. The deputy
director granted me permission to carry out research in the unit and recommended that I work with two lecturers whom he believed were actively using digital technologies in their learning and teaching. I contacted them, informed them about the objectives of my study, and requested their participation in the study. I also requested to observe students in their classes. After discussing the project with their students, I requested that all of the participants sign consent forms to formalize their participation in the study. All of the participants were informed that participation was voluntary and they were free to withdraw from the research at any point without question. (See Appendix C.) In addition, students were informed that their well-being was protected at all times and that information that was gathered throughout the study was going to be kept confidential throughout the study and was not going to affect their grades.

3.9 Chapter Summary

In this chapter, I reviewed the research design I employed for this study by presenting an overview of the research site, research participants, data sources used, data analysis procedure, and methodological and ethical considerations. In the next chapter, I will present the findings of this study. Chapter 4 outlines students’ use of digital technologies in the teaching of the COM course, their perceptions of the use of digital technologies in developing their academic literacies, and the support they needed to enhance their academic literacies.
Chapter 4: Findings

4.1 Introduction

In this chapter, I will discuss the findings that relate to students’ use of digital technologies in the Communication and Academic Literacy Skills (COM) course. In this study, I wanted to find out:

1. What technologies are available to first-year students taking the Communication and Academic Literacy Skills course at the University of Botswana?
2. How do first-year students use the digital technologies available to them to enhance their academic literacies?
3. What are first-year students’ perceptions about their use of digital technologies in learning?
4. What contributions do digital technologies make to the development of students’ academic literacies?
5. What are lecturers’ perceptions about the use of digital technologies to enhance students’ academic literacies?

Drawing from the data collected through a questionnaire, interviews, observations, and document review, I investigated students’ use of digital technologies and texts and the support they require to develop their academic literacies. I also explored students’ and lecturers’ perceptions of the use of these technologies to enhance learning in the COM course.

To begin the analysis, I will describe, in section 4.2, participants’ demographic information. Following that, in section 4.3, I will focus on the general patterns of students’ use of digital technologies. The last section before the chapter summary will be section 4.4,
where I will focus on findings related to the five major themes of the study, outlined in Chapter 3. These themes describe how students use digital technologies to facilitate learning and to garner the support they need to benefit from their engagement with technologies to develop their academic literacies. The five themes are as follows:

1. **Student use of classroom digital technologies for learning.** This theme considers what technologies students used to support instruction—that is, what digital technologies they used, how and why they used the digital technologies, as well as the kind of support they received from their lecturers in the use of these technologies in order to enhance their learning.

2. **Learning management systems for teaching and learning.** In this theme, the focus is on how students use the university LMSs to access and use course materials and assessment tasks. Further, lecturer support and the factors that may or may not contribute to the effective utilization of LMS tools by students and lecturers are highlighted.

3. **Development of student academic literacies in digital contexts.** This theme highlights two sub-themes: (a) students’ use of the Internet and other digital tools to access and use information for academic research and (b) students’ use of digital tools to compose and produce academic texts.

4. **Digital technologies for academic communication.** Students’ use of LMS and social media tools to communicate amongst themselves, as well as with their lecturers, for academic purposes is highlighted in this theme.

5. **Student and lecturer perceptions of digital technologies for learning and teaching.** This theme highlights students’ views on the use of digital technologies for
learning and teaching—that is, what they perceive to be the value of digital
technologies in supporting their academic learning. Lecturers’ views on students’ use
of these technologies in learning are also highlighted.

4.2 Demographic Information of Student Participants

In order to gain information about the student respondents, data from the
questionnaire about their gender, age, high school, place of residence, and Internet access at
their place of residence was summarized. In this section, I will give an overview of the
student participants’ demographic information.

4.2.1 Age and Gender

Questionnaire results showed that, out of the 63 respondents (response rate: 53%), 24
(38%) were males and 37 (59%) were females. The data also showed (see Figure 4.1) that
50 (79%) of the respondents were aged between 18 and 19, 10 (16%) were between 20 and
22, and 3 (0.05%) were 17 years old. The findings indicate that the highest number of
students was within the 18–19 age range, which was to be expected because most of the
students within this age range would be those transitioning directly from secondary school,
and those above 20 years old would be either joining from the workforce or transferring from
other institutions.
4.2.2 Location of Participants’ Secondary Schools

When students enter the University of Botswana, they are all expected to be adequately equipped with digital literacies for research and study, whether that acquisition occurred independently or through classroom instruction. Gwebu (2015) found that students’ prior access to and use of digital technologies was related to the area in which their senior secondary school was located (i.e., in rural or urban areas, the latter of which can be broadly divided into towns, cities, and urban villages). The findings in Table 4.1 indicate that most of the students (33, 52%) attended senior secondary schools in urban settlements, followed by those from schools in rural areas (25, 40%), and those who did not indicate where they attended secondary school (5, 8%).
Table 4.1

*Location of Participants’ High Schools*

<table>
<thead>
<tr>
<th>High School Location</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>33 (52%)</td>
</tr>
<tr>
<td>Rural</td>
<td>25 (40%)</td>
</tr>
<tr>
<td>Not indicated</td>
<td>5 (8%)</td>
</tr>
<tr>
<td>Total participants</td>
<td>63 (100%)</td>
</tr>
</tbody>
</table>

The findings are also reflective of the country’s population distribution, where more than 60% of the population lives in urban settlements (Statistics Botswana, 2015) as a result of rural to urban migration in response to perceived better employment opportunities, services, and infrastructure offered by towns and cities (Gwebu, 2015). Secondly, learning where students attended secondary school was important because, although the Government of Botswana provides computers and other related digital resources equally to all secondary schools in the country, students’ access and use of these technologies may vary depending on where the secondary school is located. For instance, students in urban areas might have more access to computers and the Internet than students in rural areas because of the more developed technological infrastructure in urban areas; this might have implications for how students in this study used digital technologies to enhance their learning when they began university.

### 4.2.3 Participants’ Place of Residence and Internet Access

Participants were asked to indicate in the questionnaire whether they lived on or off campus. Establishing participants’ place of residence was important in this study because the access to the Internet of the students in this study was affected by whether they were on or
off campus. All students had access to the Internet at several access points on campus, but the university did not provide Internet access to students who lived off campus. They were expected to make private arrangements for Internet provision, such as by using Internet cafés or connecting to Internet providers in the city. The results show that, out of the 63 respondents, 37 (59%) lived on campus while 26 (41%) were off-campus students.

A follow-up question allowed for respondents to indicate whether they had access to the Internet. There is a need for university students to access the Internet for academic research and study whether they are on or off campus; thus, establishing whether they had access to the Internet in their places of residence was important. Participant responses showed that 19 (73%) of students who lived off campus had access to the Internet at home while 7 (27%) did not.

Further analysis was undertaken to establish places around campus where students accessed the Internet for academic research and study. Identifying these locations was important because providing students with adequate access to the Internet and other digital technologies on campus is important for students’ academic success, and the University of Botswana claimed that their infrastructure around campus was adequate for student access. Respondents were provided with alternatives to choose from, as well as an option to add to the list other places they had access to the Internet apart from the ones provided. Data in Figure 4.2 reveal that students had access to the Internet in a variety of places for independent study. Seventy-eight percent (78%) of students indicated that they accessed the Internet at the university library (39%) and the open-access computer laboratories (39%; also known as Block 247). These students were followed by 14% of the respondents who indicated that they accessed the Internet at the residence halls and faculty computer labs, as
well as through the campus-wide Wi-Fi. Lastly, smart classrooms were the least popular place, with only 8% of students going there to access the Internet, very likely because they are teaching rooms accessible to students only during lessons.

![Pie chart showing Internet access points on campus](image)

**Figure 4.2. Students’ Internet access points on campus.**

With regard to the 37 students who lived on campus, the data revealed that 26 (70%) of them had access to the Internet at their residence halls. However, 11 (30%) of them did not have access to the Internet in their halls of residence, hence they were compelled to use alternative places on campus to access the Internet for independent study and research.

### 4.2.4 Summary of Demographics

The questionnaire data revealed that most of the participants were between the ages of 18 and 19, which could indicate that most of the students were transitioning directly from secondary school. The data also showed that most students who answered the questionnaire indicated that they went to a secondary school located in an urban area. With regard to Internet access, most off-campus students had access at their places of residence. Findings indicated that, although all of the students responded that they were able to access the Internet at various places on campus, some of the students who lived on campus reported that...
they had challenges accessing the Internet in some of the residence halls, requiring them to look for alternative access locations after school. The findings suggest that, although the university was supposed to provide campus-wide Wi-Fi access, there is a need to check where Internet connections are weak so that students can have adequate access for use.

4.3 Patterns of Student Participants’ Use of Digital Technologies to Enhance Learning

With the influx of digital technologies in students’ lives, it is important to establish what digital technologies students use generally in their academic and social lives. In this section, what digital technologies and how students used these technologies daily and weekly will be examined. Secondly, what digital technologies students used independently daily and weekly and the frequency with which they used them to enhance their learning in the course will also be explored.

4.3.1 General Pattern of Use of Electronic Resources and Frequency of Use

Students use a variety of digital tools in their daily social lives; hence, investigating what digital technologies students used daily and weekly and how was important. A summary of the general patterns of students’ daily and weekly use of digital technologies to enhance their learning is shown in Figure 4.3. In this question, the 63 respondents were allowed to indicate more than one digital technology that they used. In terms of daily use, 51 (81%) participants indicated that they used mobile phones, and 31 (49%) used laptops. Desktop and hand-held computers were used daily by 18 (~29%) students, and 16 (~25%) students used portable media players daily. Digital cameras, video cameras, and games consoles had the least daily use. In terms of weekly use, most students 33 (~52%) indicated that they used desktop computers, followed by 13 (~21%) students who indicated that they
used laptops. The least used digital devices on a weekly basis were games and mobile phones, with 2 (3%) students using each.

![Students’ general use of digital technologies daily and weekly.](image)

**Figure 4.3.** Students’ general use of digital technologies daily and weekly.

In order to establish the use of digital technologies to enhance learning in the *Communication and Academic Literacy Skills* course (COM), students were asked to choose which tools they used to enhance learning in the course and the frequency with which they used them. Responses from the questionnaire were divided into four sections: information search tools, learning management systems (LMSs), productivity tools, and communication tools.

The results of students’ use of information search tools to enhance learning in the course and the frequency with which they used them are summarized in Figure 4.4. As shown in the figure, Internet websites were the resource used daily by most students (35%) to search for information to enhance learning in the course. In addition, 28% of students indicated that they also used Google to search for information to enhance learning in the
course. YouTube (with 15% of students) and Wikipedia (with 13% of students) were the next-most-common technologies used daily, followed lastly by online journals (with 9% of students). Although most students used websites daily to search for information, most (32%) indicated that they used the university online databases weekly to search for information. Eighteen percent (18%) indicated that they used websites weekly—likewise, with Google (18%)—while YouTube (17% of students) and Wikipedia (15% of students) were the least used weekly to search for information.

Figure 4.4. Students’ independent use of information search tools to enhance learning in the COM course.

Overall, results indicate that most students used Internet websites on a daily basis to search for information, but on a weekly basis, most students indicated that they used university online journals for research. Wikipedia and YouTube were the least used, daily and weekly, for research.

The University of Botswana, like most institutions of higher learning, has been encouraging the use of LMSs (namely, Blackboard and Moodle) to supplement face-to-face learning and teaching. In order to establish what tools students independently use in their LMS to enhance their learning in the course, they were asked to indicate how often they used
the course website and the online assessment tools. Respondents were asked to indicate more than one tool that they used independently to enhance their learning. The results in Figure 4.5 indicate that students’ use of the university LMSs’ course pages to enhance learning was skewed toward the use of the content-page tool, where lecturers uploaded their course content, such as class notes and class and assessment activities. Most students (35, ~56%) reported that they used the course website daily, 16 (~25%) reported that they used it weekly, and 2 (3%) indicated that they never used it. While most students (17, 27%) indicated that they never used online assessments, 15 (24%) students indicated that they used them weekly, while 3 (5%) indicated that they used them daily. The data shows that online assessments were not used regularly in the course, as opposed to the course website, where students regularly obtained course materials for study.

![Figure 4.5. Students’ use of the university learning management system to enhance learning in the COM course.](image)
In the COM courses, students relied on productivity tools to represent knowledge. In order to establish what tools they used to enhance their learning in the course, students were asked to indicate which of the three tools listed they used and how often they used the tools. Figure 4.6 shows students’ responses to the use of productivity tools to enhance their learning in the course.

Figure 4.6. Students’ use of productivity tools to enhance learning in the COM course.

The responses showed that, in terms of daily use of the three tools, 19 (30%) students indicated that they mostly used Microsoft Word documents, 12 (19%) indicated that they used presentation tools (e.g., Microsoft PowerPoint), and 9 (~14%) used Microsoft Excel. In terms of weekly usage, 24 (38%) students indicated that they used Microsoft Word, 19 (30%) reported using Microsoft Excel, and, lastly, 2 (3%) reported using presentation tools such as Microsoft PowerPoint. Fourteen (14, ~22%) students indicated that they never used Microsoft Excel while 12 (19%) had never used presentation tools to enhance their learning. Overall, results indicated that although some students used Microsoft Excel and Microsoft
PowerPoint, most students relied on Microsoft Word daily and weekly to represent knowledge and to enhance their learning.

The use of communication tools was important for students to enrich their learning experiences and communicate with their lecturers and fellow students in the COM course. In order to learn about what communication tools students used in the course they were asked to indicate the frequency with which they used various communication tools. The data shows that 41 (65%) students used text messaging as a form of daily communication, followed by 37 (~59%) who used mobile phones. Online discussion groups were the most used, with 15 (~24%) of students indicating that they used it weekly. Students were also asked to indicate tools they used for communication that were not on the list. Seven (7, 11%) students indicated that they used Facebook, Twitter, WhatsApp, and BBM (BlackBerry Messenger) daily. However, 51 (81%) students indicated that they had never used video conferencing, 36 (57%) had never used Skype, and 24 (38%) indicated that they had never participated in online group discussions. Overall, it appeared students heavily relied on mobile phones for calling and text messaging. This could be attributed to affordable prices for mobile phones, therefore, making them accessible to most of the students for use as common tools for communicating with lecturers and other students.
Table 4.2

*Tools Used for Communication in the COM Course*

<table>
<thead>
<tr>
<th>ICT Used in COM Course</th>
<th>Daily</th>
<th>Weekly</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video conferencing</td>
<td>1</td>
<td>2</td>
<td>51</td>
</tr>
<tr>
<td>Online discussion groups</td>
<td>2</td>
<td>15</td>
<td>24</td>
</tr>
<tr>
<td>Mobile phones</td>
<td>37</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Text messaging</td>
<td>41</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>Skype</td>
<td>0</td>
<td>3</td>
<td>36</td>
</tr>
<tr>
<td>Other (e.g., Facebook, Twitter, WhatsApp, BBM)</td>
<td>7</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*Note.* “BBM” means “BlackBerry Messenger.”

4.3.3 Summary of Technological Use

In summary, students reported having access to the Internet both on and off campus. The provision of Wi-Fi across the campus enabled students to access the Internet at various points around campus, with most students indicating that they used the library and the open-access computer laboratories in Block 247. These access points were likely the most popular because of the easier access to desktop computers that students utilized for academic work and study.

Generally, results also showed variation in students’ use of digital technologies to enhance their learning in the COM course. Most students reported that they used mobile phones daily and weekly. Although most students reported using desktop computers, few reported using laptops daily and weekly to enhance learning.

The data showed that primary sources of information for most respondents, both daily and weekly, were Internet browsers such as Google and the university online journals, while
the Wikipedia and YouTube were the least used by respondents to search for information. Although most students indicated that they used websites and Google daily but not online journals as much, it was interesting to note that most students reported that they mostly used websites, Google, and online journals weekly. Overall, results showed that, although students claimed to use a variety of information search tools, there was over-reliance on websites and Internet browsers—and, to a lesser extent, on Wikipedia and YouTube—to search for information for their academic work. For instance, students used Google and websites instead of databases to search for information. Using Google and websites permitted them to use basic information search strategies unlike on online databases, where they would be required to think more critically about the topic and the information search strategies needed to get credible information for their assignments. Furthermore, results for the use of the university LMSs showed that, although most students accessed the course content daily, lecturers did not integrate online assessment tools into the learning and teaching of the course.

Although data indicated that students used software programs such as Microsoft Word, Excel, and PowerPoint, Microsoft Word was mostly used both daily and weekly. Students’ over-reliance on Microsoft Word without using other tools to represent knowledge could be attributed to expectations of the different courses that require students to submit word-processed assignments and projects and do not necessarily require students to use Microsoft Excel, which is used to perform statistical tasks, and PowerPoint, which is used for oral presentations. It can be suggested from the results that, while students used Microsoft Word for representing knowledge, lecturers did not provide students with opportunities to integrate other tools, such as Microsoft Excel and PowerPoint, in learning and teaching.
Lastly, most students reported that they used mobile text messaging and voice calls for daily communication. However, students also reported that they had never used communication tools such as video conferencing, Skype, and discussion forums for communication in the course. A reason for the popularity of mobile phone use for calling and texting friends and family, as well as their use for various academic purposes, could be the affordability of mobile phones and the low cost of operating them. Although other tools, such as discussion forums and other communication tools, were not used, they are perceived to be valuable in enhancing students’ learning. The expectation at the University of Botswana is that students use digital technologies for learning and teaching; therefore, it is important for lecturers to explore and design meaningful learning activities that integrate digital technologies in order to enhance students’ learning and teaching and provide them with the skills and opportunities that will enable them to succeed academically and professionally.

4.4 Themes Describing Students’ Use of Digital Technologies to Facilitate Learning

4.4.1 Introduction

In addition to describing students’ patterns of use of digital technology, it is important to understand students’ use of digital technologies in the teaching and learning of a course in relation to how they perceive these technologies to be supporting their academic learning. In this section, I will report on students’ use of various digital technologies in the learning and teaching of the course and students’ perceptions on the use of these technologies to enhance their learning in the COM course. I also explore what support students said they needed in order to use these technologies for academic success. I have organized my findings in
relation to the five major themes of the uses of digital technologies, identified in the analyses of the qualitative data of this study and explained at the beginning of this chapter:

1. student use of classroom digital technologies for learning,
2. learning management systems for teaching and learning,
3. development of student academic literacies in digital contexts,
4. digital technologies for academic communication, and
5. student and lecturer perceptions of digital technologies for learning and teaching.

These themes describe what digital technologies students used and how students used them in the classroom to facilitate learning and to garner the support they needed for their academic literacy development to benefit from their engagement with technologies. Using individual and focus group interviews and questionnaire responses enabled me to gain insights into students’ uses and the perceptions of both students and lecturers of the use of the digital technologies to enhance learning in the COM course.

4.4.2 Theme 1: Student Use of Classroom Digital Technologies for Learning

Students’ interview and questionnaire responses indicated that, although not frequently, most students used a variety of digital technologies in the learning and teaching of the course. Among the technologies they mentioned were the Internet, videos, and computers. For instance, students in the COM 111 course mentioned that one of the class activities assigned by their lecturer required them to

watch a video and after that we were given questions to answer. They wanted to see if we had understood what was going on in the video. So, we had to answer those questions and write down what we remembered from the video.
Discussions during a focus group interview indicated that most students appreciated the lecturer’s use of the video for instruction. They believed that an, “introduction of videos can really help; it can even develop that desire for us—I mean, the desire in us to go much into the COM course.”

During one of the interview sessions, focus lecturers were asked whether they viewed the use of digital technologies as having potential to engage students in learning and teaching. Both lecturers seemed to acknowledge the value of using technologies to engage students in the learning process. One of the lecturers said, “making students use technology by putting assignments there and other stuff there, they end up being comfortable in the use of technology and, in a way, it develops them.” She further indicated that using technologies allowed facilitators to be flexible in the delivery of courses, regardless of the distance: “As a facilitator, maybe you are away, you can record a lesson, and your students will not miss your presence.”

Regarding the use of technology-enhanced classrooms, lecturers viewed teaching in them useful because of the opportunities these classrooms afforded them, such as using a variety of digital technologies including videos, PowerPoint, and LMSs, to enhance students’ learning. However, students’ views of the use of technology for teaching were contrary to those of the lecturers. Most of the students’ views seemed to acknowledge that technologies were available for use for learning and teaching; however, their use by lecturers for instruction was inadequate, thereby denying them opportunities for active engagement in learning and rendering them passive listeners during instruction. One student said, “we just listen to the lecturer. Only when she gives us an assignment to go and do, that’s when we
can use technology, but, when we are in class, we just listen to the lecturer and just take down notes.”

One of the lecturers’ responses to why the use of digital technologies in the learning and teaching of the course was observed to be minimal indicated a number of challenges which they perceived to contribute to the minimal use of digital technologies, including one stated here: “[E]ven if I had intentions of using as much ICT as I can, at times, I get discouraged by the availability of the Internet when it comes to wireless network . . . it’s unreliable.” She further reported that the procedure for accessing and using the podium—that is, the place where all of the ICT equipment is kept in the technology-enhanced classrooms—was an impediment to the effective use of digital technologies:

It’s not practical; this podium is always closed. For me to use it, I must go to the IT department, walk from here for about 3 or 5 minutes, get the keys, walk back and after class take the key back.

The lecturer seemed to believe that, although the university provided these digital technologies for learning and teaching, the challenges that they faced were negatively impacting the effectiveness of the use of these digital technologies for the course.

When asked about their views on the use of digital technologies for learning and teaching, most of the students’ interview responses appeared to favor the use of digital technologies over pen and paper when engaged in literacy events for the COM course. They believed that these technologies had a potential to develop the skills required by universities and workplaces. One student said,

We’re taught how to do things like mind-mapping; we were just taught how to write them using our own pen. We should be given examples from the computer so that we
can learn how to do something because, in other companies, you can be asked to summarize how a company is doing, so you have to use things like mind-mapping, annotation—so we have to be taught how to do them using a computer, not being taught how to do them by just writing.

Furthermore, students believed that using digital technologies in the classrooms would enable them to be active participants in the learning process. For example, they could use digital technologies to facilitate during class sessions, or they could conduct research and present their work to their peers instead of always listening to their lecturers. Through this engagement, they would then develop skills such as confidence and self-esteem. Some of their responses were:

• “Sometimes during class, she can ask one of us and say, ‘Here is the projector. You are the lecturer today. Teach us.’”

• “We could do research, make our own notes, and come and present [the research] to class.”

• “We should be given a chance so that we can talk to other students so that we get self-esteem, so that we get confidence.”

In addition, students seemed to prefer the use of PowerPoint slides because of their visual nature, as opposed to printed notes. They believed that this mode had the potential to enhance retention of information and motivation to concentrate in the course. One of them said, “Unlike notes, PowerPoint presentations actually stick because they are visual and are very important in the sense that, sometimes, someone may not be concentrating, but at least they can jot down some things from the slide. [Students] can at least remember something from the slide.”
Further, most students’ responses seemed to indicate that lecturers needed to explore and integrate newer technologies in the learning and teaching of the course. One student said,

Lecturers should help us to explore new gadgets and use digital technologies that they haven’t yet used because new and more portable technologies, such as iPods and tablets, should be introduced to add variety to the already available technologies. New ways of seeing and thinking about the world become possible as new and processing tools become possible and come into play.

Students’ responses during focus group interviews revealed that students had varying levels of digital literacies as they transitioned into the university. Some students reported that they took a course in computer studies in their secondary school, and, as such, the skills they acquired were adequate for independent learning at the university. One student said,

When I came here, I had already learnt all in my computer studies course, and now I had to put it to practice. I do things very quickly without needing assistance from people with the things that I know about. So, it was very easy, and I could work on my own without relying on other people.

Students who did not take the computer studies course in secondary school reported that, since they lacked the opportunity, they did not have adequate skills in the use of computers to enable them to work independently; therefore, they needed support in order for them to effectively use digital technologies for academic success. Some of them mentioned that they sought support from different structures, such as friends and family members, in order to accomplish academic tasks. One student said, “My younger brother is the one who knows a lot about computers. If I don’t understand, I just call him and ask, ‘How can I do
this?, and he tells me how to do it.” However, their interview responses indicated that they wished for more lecturer support in order to fully exploit the potential afforded by these digital technologies for their learning in the course. Some of their responses were:

- “We need experts who are able to use ICT in the Communication and Academic Literacy course.”
- “Provide computers in the classroom during learning/lessons.”
- “I think we have to be taught using something in front of us so that we can try because nowadays people use computers everywhere you go.”
- “I am not really familiar with some of the ways of using ICTs. I think guidance on how to operate them and use them in my Communication and Academic Literacy course would be highly beneficial.”

4.4.2.1 Summary of Theme 1

The findings indicate that students used digital technologies during instruction, albeit minimally. However, they acknowledged the value of using digital technologies for learning and teaching and believed that, if these were used more in the classroom, and the lecturers encouraged them to be more active in the learning process, their motivation to learn would increase. While both lecturers and students valued the use of digital technologies in learning and teaching, students seemed to express dissatisfaction with the lack of engagement with digital technologies by the lecturers in the classroom, which they believed did not enable them to develop the skills that they needed to succeed academically. For instance, if they were engaged in class presentations, they would develop confidence and self-esteem among other academic literacy skills that are required both at university and in the workplace. However, lecturers acknowledged the value of using digital technologies in their instruction,
but they attributed their lack of use to unreliable Internet connections. Further, the logistics of using the technology equipment in the classrooms were also considered impractical; hence, lecturers ended up not effectively using technologies despite their provision in most classrooms.

Finally, with newer technologies emerging, students expressed the need for lecturers to explore these technologies in the learning and teaching of the course. Students highlighted the fact that, as newer technologies emerge, there is need to substitute pen and paper writing activities with the use of document-creating technologies. Students’ view of using new technologies to explore new ways of reading and writing is in line with literature that outlines the characteristics of current students, referred to as digital natives, who are considered to be tech savvy and who prefer using technology for learning, in contrast with previous cohorts who relied mostly on print literacies. Students also emphasized the need for lecturers to support them in the use of new and emerging technologies as they design and create texts. The findings seem to indicate students’ awareness of the shift in their role—as well as that of their lecturer—in learning and teaching in the digital age, highlighting the need for lecturers to be involved more as facilitators rather than dispensers of knowledge.

Although both students and lecturers viewed digital technologies as playing a pivotal role in developing students’ academic literacies, concerns were raised that challenges faced in the learning and teaching context, such as inadequacy of computers and the unreliability of the Internet, negatively impacted the effective use of digital technologies and, subsequently, students’ academic performance; therefore, institutional support is imperative if the potential of these digital technologies is to be fully exploited for learning.
4.4.3 Theme 2: Learning Management Systems for Teaching and Learning

The use of learning management systems (LMSs) for learning and teaching is encouraged at the University of Botswana. As such, it was important to explore students’ use of the LMS tools—Blackboard and Moodle—that are used at the University of Botswana. I also questioned students’ about their perceptions of the use of these tools for learning and teaching. While the COM 121 course, Communication and Academic Literacy Skills for Business, used the Blackboard platform, the COM 111 course, Communication Academic Literacy Skills for Humanities, used the Moodle platform.

In order to investigate the use of the LMSs for the two courses, I started with an analysis of the COM 121 course home page. The organization of the page indicated that the top of the page was where the lecturer’s information—name, office, e-mail address, and office hours—was placed. This information was followed by folders and files that were arranged and labelled—for example, the welcome note, course syllabus, student activities, handouts, assignments, and announcements. (See Figure 4.7.) However, these folders and files were not arranged in any order nor were they numbered to show which one was to be used and when.
Figure 4.7. COM 121 home page.

The “Welcome to COM 121” file was of interest to me because the lecturer indicated that it was the first file that students were supposed to read when they entered the course. The expectation, therefore, was that the file would guide me with the course information that the lecturer shared with the students. The analysis of the “Welcome to COM 121” page revealed that the lecturer had included information that she considered to be important for students as they entered the course, such as the lecturer’s photograph which would indicate who their lecturer was. In addition, this welcome folder (see Figure 4.8) contained information about the course expectations, such as the delivery methods to be used in the course, the expected forms of online interaction between the lecturer and students and among
the students as peers, and the online tools the students would be expected to use on the Blackboard platform (e.g., the discussion forum, assignment, and announcement tools).

In addition to the welcome file, students were expected to access and use other folders and files on the home page, toward which lecturers would direct students during appropriate course activities (e.g., exercises, notes, or assignments).

The organization of the COM 111 course on the Moodle platform was different by default. This course did not have a welcome page or note for students where the lecturer could introduce herself to the students and outline the course expectations. The course started with modules/topics that were arranged in a linear structure, with related course content and dates corresponding with topics in the course syllabus. As shown in Figure 4.9, for each module, a short summary was used to introduce each module and how it would be beneficial to students. Within each module, there were attachments of handouts and

Figure 4.8. “Welcome to COM 121,” page 1.
activities. In some modules, hyperlinks were included for students to access and use for research and study.

Figure 4.9. COM 111 course page.

Analyses of individual and focus group interviews, which were used to establish students’ experiences with the access and use of both LMS platforms for course content, indicated that most students accessed and used the LMSs to download course material that the lecturers had uploaded. Students said:

- “Basically, she just tells us, uh, ‘Students, I have put up the guidelines,’ or ‘I have put up an assignment on Moodle.’ So we, at our own time, will have to go there.”
• “That is where our lecturer stores notes.”

• “We actually get our notes from WebCT.”

• “She upload notes there, and then I use my memory stick to get them from the Moodle platform. My projects, I do the same. We just get the guidelines from the platform; then, I get them on my [memory] stick.”

When asked about how often they accessed and used the course materials from the LMSs, most student responses revealed that, although they knew that the lecturers expected them to frequently access and use the materials, they did not. They claimed that the course materials were not useful in terms of adequacy and relevance to their academic needs and interests and that lecturers used the LMS more as electronic document repositories rather than as a tool for active learning. Some of them responded by saying:

• “I feel like this thing was designed for students to study and enjoy studying on their own, but everything that is in there is dull.”

• “Um, it’s notes, then assignments. I doubt there would be anything besides those.”

• “I just go there to download my assignments; that’s it. Then I just go on because there is nothing for me really.”

• “There are no pictures that motivate you to read the information the way it was presented; it is just plain.”

A chat with members of a small group that was doing a library project from one of the classes that I observed revealed that their pattern of access and use of material on the LMS was infrequent and inconsistent. Students’ responses did not seem to indicate that they were keen to access and use course materials on the LMSs although they were well aware

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1 WebCT was a former LMS used at the University of Botswana.
that their lecturers uploaded materials onto them. They reported that they rarely checked the course materials. Their views are illustrated in the interview excerpt below.

- Interviewer: “Did you check Blackboard?”
- Student 1: {chuckles, shakes head}
- Interviewer: “You didn’t check?”
- Student 1: “Yeah, we rarely do.”
- Interviewer: “You rarely do? You rarely go on Blackboard.”
- Student 2: “Yeah.”
- Interviewer: “Why?”
- Students: {Silence}
- Interviewer: “Even when you know there is information in there?”
- Students 1: “Yeah, eh, it’s just . . .”
- Interviewer: “It’s just what?”
- Students 2: “We’re just used to it that way.”

This seeming lack of interest by students to access and use COM online course materials was confirmed by another student taking the COM 111 course, who, during an interview, emphasized her preference for the French online course materials over the COM 111 course materials, claiming that, unlike in the COM course, where she only logged on to download assignments, she takes longer to explore the French course because it was more interesting and informative; as a result, she never got bored. She said,

COM 111 is not interesting. I don’t know whether it is the quality or quantity of information because, when I come here (pointing on a link on the course), I am like, “Where is the assignment?” I click, then take down my notes, then rush back to my
French page, where I know I will be keen to know more. I never get bored when I am on my French website. When you go to the COM site, you think that these kids are not serious; they don’t want to do anything, but then it’s just that the lecturer just puts on notes, that’s it.

Furthermore, most students who were interviewed attributed students’ lack of interest in accessing the course content on the LMS to what seemed like the lecturer’s non-commitment to ensuring that students use the uploaded course materials; hence, students, in return, did not feel motivated to access and use the course materials. One student said, “Our lecturer just says, ‘Go and check Moodle for assignments,’ but what I have seen is that some of the students never visit Moodle.” Contrary to students’ views, lecturers seemed to blame students for being disinterested in the course materials that were uploaded. In an interview with the lecturers, they expressed concerns that, despite their efforts to upload course materials, students seemed to lack the motivation to use them. One of the lecturers said,

I did some tracking report for my groups. I was asking some [students], “Some of you only, like, logged onto the course, like, for a few minutes, a few times,” but, yet, there were so many things. I don’t give them hard copies for handouts, so you find that there will be more than five handouts, but then, you are, like, “This person logged on three times, and it was just for twenty minutes.” I mean, how did they get the rest of the stuff? Because, even some of the assignments, they had to do them there, so I really don’t know.

In response to what type of course materials they would like to have in the LMS, most students indicated that, instead of lecturers uploading content that comprises notes from
lectures and scanned materials from documents or books, lecturers should upload material that is engaging and well thought out. Some of the students suggested that:

- “What I would like to see on Blackboard, I guess, I would say information that someone has put some thought and has understood what he/she is uploading. The lecturer has read and understood and then he writes notes that come from there, not just scanning the book and putting it inside there.”
- “Introduction of videos can really help; it can even develop that desire for us. I mean the desire for us to go much into the COM course.”
- “Lecturers should not put everything that was discussed in class, like each and everything, even unnecessary things; it shouldn’t be too much like somebody is reading a book and put everything in that book.”

Students’ responses resonated with those of the deputy director of Educational Technology Unit, who argued that the type of course materials that lecturers upload on the LMS did not motivate students to use the resources for learning. He suggested that, instead of just using the LMS resource for uploading notes, lecturers should fully explore the potential of the LMS tools in order to effectively create online course content that is motivating and engaging to students. He commented, “You know, part of the problem is that, if I put this online, go to class, take the same script, and read to students, what will be the incentive?” He mentioned that there are various ways in which lecturers could use the LMS tools to motivate students toward using the tools for learning. He said, “The online platform has a lot of resources which people can use—one of them is putting notes online, but that is not the only resource.” He further added that another way could be for lecturers to
“construct a question, put it in a discussion forum, followed by a quiz that carries marks that contribute to continuous assessment. [Students] will go there.”

In the instructional designer’s interview on the lecturers’ use of the LMS and the effectiveness of its use for learning and teaching, he also expressed concerns that, despite the instructions that lecturers receive on the use of the LMS, they still create and upload low-quality online course materials that students do not use for learning.

Lecturers are not able to develop quality online courses using what we have taught them during the workshops. There would be certain standards that we would have set for our students, for our lecturers to say, “This is what we would say is a quality online course.” Near the criteria that we have set, you find that lecturers, some of them, just use LMS and the course like a dumping ground. You will find a course outline and nothing else for the whole semester.

He indicated that lecturers could get support from the Educational Technology Unit personnel who were readily available to assist lecturers with integrating multimedia resources into their course materials. He said, “[The Educational Technology Unit has] technicians. You will talk to them, ‘There is this video, there is this YouTube I am looking for.’ They download it, they put it in your course, and you link your students.”

It was interesting to note that the Educational Technology personnel made observations about why students were not fully utilizing the online course materials that were uploaded onto the LMS. Lecturers, on the other hand, did not seem to understand students’ reasons for not accessing and using the online course materials. They seemed not to be aware that students did not like the online course materials; hence, students did not frequently access and use them.
In addition to the course tools, finding out whether and, if so, how, students used the online assessment tool was important for this study because of the perceived benefits of using the tool for enhancing student learning. Interview responses regarding whether students used the assessment tool and, if so, how revealed that most students taking the COM courses had not used the online assessment tool. They mostly submitted their assignments as hard copies. One student said, “So far, we have not submitted online. We just get a hard copy, and then we submit.”

A perusal of the online course also confirmed students’ interview responses, indicating that, while the option for using the assessment tool was available, lecturers had not used it and had preferred other options for students to receive and submit their assignments. For example, as shown in Figure 4.10, for COM 121, the lecturer preferred to send and receive assignments through the mail tool. Students would download assignments, complete them offline, and then send them back to the lecturer through the same tool. It would seem that the mail tool doubled as an assessment and communication tool, where the lecturer would post notices and announcements for students.
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Figure 4.10. Students’ use of the online-course mail tool to receive and submit assignments.
Although lecturers were aware of the perceived benefits of using the assessment tool in the COM course, discussions with them on the lack of use of this tool revealed that the lecturers’ reasons for not using this tool for assessment were that they had challenges in designing appropriate online assessment tasks for the course. One of the lecturers reported that using the assessment tool for the course was a challenge because “we don’t ask [students] recall questions, multiple choice, true/false—those objective questions—so, for our course, really, it is a challenge.” Further, the lecturer indicated that the challenge was not only with designing appropriate questions for online assessment; it was also about being able to “come up with a marking key that the computer can accept and use to mark the test. So, if you have to give the test online, and you can’t produce that marking key online, then you defeat the purpose.” The lecturers seemed to believe that these challenges did not enable them to effectively use the assessment tool. They were of the view that, in order for them to effectively use the tool, they needed training in the use of the tool. One lecturer said, “We need training regarding online assessment because it really takes time to come up with activities that are online-assessment-based.”

In further discussions with lecturers on the effective use of LMS tools, they expressed concerns that, while they acknowledged that they did not fully utilize the LMS tools, they were not happy with the support they received from the Educational Technology Unit. They mentioned that the training on online assessment of courses that the Educational Technology Unit offers is mainly on the use of multiple choice or true/false, while assessment tasks for COM courses are mainly continuous writing tasks, such as summaries, paragraphing, and so on. Lecturers reported that, despite continuous requests for training on how to design online assessment tasks that are appropriate for the type of assessments that are administered in the
COM courses, they had not received any favorable responses from the unit. One lecturer said, “We have talked to them but they just tell us that it’s doable—you can do it—but we know how we assess our students; we don’t ask them recall questions—multiple choice, true or false.”

The response of the deputy director of the Educational Technology Unit to the lecturers’ allegations about the inadequate support from the unit revealed that, while the unit would have liked to have adequately supported lecturers with their various requests and needs, the unit had challenges with staffing. He mentioned that the Educational Technology personnel that are supposed to support the academic staff of the university are not adequate and are overwhelmed, hence, their inability to adequately and effectively respond to the needs and requests for specific staff development in a timely manner.

[The Educational Technology Unit is] thin on the ground. The academic staff for the University of Botswana is about 850, and there are only two instructional designers to help with the design of course material for online teaching—one online developer, one graphic designer. How do we expect four colleagues to effectively ensure that 500 courses are up to scratch?

4.4.3.1 Summary of Theme 2

The findings of this study indicated that the COM courses that were used in this study used two learning platforms; one used Blackboard while the other used Moodle. The differences in the formats of the learning platforms dictated the way the lecturers organized the course content for the two courses in order to cater to the academic needs of students. For instance, in the course on Blackboard, content was organized in folders and files on the home page, where students were expected to access and use the course material. However,
in the course on Moodle, the lecturer used the default settings to arrange the course content and organize it in a linear form according to modules and topics to be covered for the course as they related to the course syllabus. What was similar for both courses was that the content consisted of notes and handouts for students to download and use offline, and there was no evidence of interactive activities for students to do online.

Data indicated that, although lecturers uploaded content for students to use, students did not seem motivated to access and use the course content in their learning, claiming that it was uninteresting and lacked interactivity. Although lecturers did not seem to understand why students did not make use of the online course content, staff in the Educational Technology Unit confirmed students’ concerns by pointing out that lecturers use the learning platforms as repositories rather than as tools for enhancing interactive learning. They indicated that these LMS platforms have more tools than just the one for depositing notes and handouts; therefore, lecturers should exploit the full potential of other tools for learning and teaching. The Educational Technology Unit staff seemed to indicate a perception that lecturers failed to tap into the available technical support within the Educational Technology Unit in order to fully utilize and exploit the potential of the LMS tools. The importance of effectively using the various tools in LMSs for enhancing students’ learning is corroborated by Rodi, Kohun, and DeLorenzo (2013), who argue that features incorporated in the LMSs include pedagogies that facilitate students’ active engagement in the learning process since they can afford opportunities to discuss and collaborate with peers beyond the walls of the classroom and also provide the lecturer with insights on students’ learning and engagement.

In contrast to the views by the Educational Technology Unit personnel, lecturer interview responses on the reasons why their use of LMS tools for enhancing learning was
inadequate revealed the challenges that lecturers faced in using these digital technologies. While they acknowledged the importance of fully exploiting the various LMS tools for instruction, they indicated that they lacked adequate and appropriate training to effectively use the tools. For example, they pointed out that, although the Educational Technology Unit provided academic staff training on the use of the LMS assessment tools, the training was not appropriate for assessment tasks in the COM courses. The training was specific to multiple-choice or true/false types of assessment, which were not appropriate for their course requirements since they assessed students on continuous writing, such as paragraphing and summaries that require students to be assessed on skills that are different from those required for multiple choice or true/false questions. Educational Technology Unit personnel acknowledged this and confirmed that, although they would have liked to have supported individual departmental needs, they had inadequate staffing.

4.4.4 Theme 3: Development of Student Academic Literacies in Digital Contexts

The proliferation of digital technologies in students’ lives has increased their reliance on the use of the Internet to search for information in all aspects of their lives. I, therefore, investigated students’ use of the Internet and the university library online databases for developing students’ academic literacies and the support they received in the use of these resources. I used individual and focus group interviews, and then I analyzed students’ written assignments and their research projects to find out what online resources they used and how the information they extracted from these resources was represented in their written texts. Librarians and lecturers were interviewed on students’ use of these technologies for accessing and using information for completing assignments.
4.4.4.1 Students’ Use of the Internet and Other Digital Tools to Access and Use Information for Academic Research

During individual interview sessions, students’ responses to what online resources they accessed and used to search for information for their academic work revealed that most students relied on the Internet for information. Some of their responses were:

- “I use the Internet for clarifying what we are taught in class—like, we were taught annotating, so we had to use the Internet because, in class, she can’t cover everything. So, during my spare time, I just expand a bit to really learn what was being taught.”
- “Sometimes, we research from the Internet.”
- “Like for our assignments, um, our citations, we get from the Internet.”
- “Like, researching, uh, like, using the Internet, because most of my research was based on the Internet; we go to the Internet; we download information.”

A confirmation of students’ reliance on the Internet was also observed in the interview responses from the librarians, who seemed to believe that the present student cohorts had a preference for Internet sources because of the exposure they had in its use before joining the university. One of the librarians said, “Compared to the previous years, where most students preferred print because they did not have IT skills, students who are entering the university now know how to search the Internet; they have got the basics of the Internet.”

Students’ responses to what online resources they used in their search for information revealed that they preferred Google over databases such as Google Scholar because of the ease with which they were able to obtain information for their research topics. One student said,
Honestly, I don’t think Google Scholar worked for me. It wasn’t specific, like, extracting the information I really wanted. Like I had to, to search for more and more information and, and I had less time to do that so Google Scholar, for me, it didn’t work. I preferred Google alone.

In addition, some of the students seemed to base their choice of what online resources to use on whether the resources would give them information that was relevant for their topics. Another student said,

For web resources, we looked for information relevant to our topic. We typed in the topic so that information related to the topic should pop up, and then we will look for another one to compare. We then chose one that we feel is more current and relevant.

Librarians reported that they encouraged students to use databases to search for academic information instead of relying entirely on search engines such as Google. One of the librarians said, “I tell them, ‘I am not saying Google is not good—there is some information you can get from Google—but, please, for scholarly work, academic work, please use the ones that are unquestionable.’” However, there were still concerns from lecturers about students’ over-reliance on Google as a source of information for assigned work. One lecturer said that

[students] won’t even use Google Scholar, no matter how much you preach that to them. I think it’s because, Google Scholar, you have to do a lot of reading, but, for Google, it’s just a matter of typing the question and getting the answer right away. So, that’s what they prefer.

Students’ reliance on Google for information searches was also evident in group project portfolios for the COM 111 course. Four out of the seven research projects that were
reviewed revealed that, instead of searching for information using recommended online databases, students relied mostly on Google, organizational websites, and Wikipedia to get information for their topics. For example, an extract from one of the portfolios (see Figure 4.11) indicated that one group report relied on Wikipedia and the university website.

![Related Web Sources](image)

*Figure 4.11. Using Wikipedia for research.*

As seen in the students’ explanation in Figure 4.12, they seemed to have based their judgment for the credibility of the sources on the fact that books and websites that were cited in the Wikipedia article had been published. Secondly, they explained that the chances of the Wikipedia article being biased were low because the number of sources was satisfactory.
A further review of students’ projects confirmed that, apart from Wikipedia and institutional websites, most small groups seemed to rely on Google as a search engine, and the first hits (i.e., results) of their Google search results were selected for use in the projects. For example, when a group researching non-verbal communication, “googled” their topic, the first entry was “helpguide.org,” so that became their source of information for their project. (See Figure 4.13.)
Similarly, another group that researched the topic “small group communication” also used the first hit of their Google search as the primary source of information for their project. (See Figure 4.14.)
Figure 4.14. Google search results for students’ group project small group communication.

During both individual and focus group interviews, students stated challenges that they had when using online tools for academic research because of the lack of practice activities during classroom instruction. One student mentioned, “It was just theory; we were
not shown even how. For example, if you are looking for materials, we were told by word of
mouth, and we never got a chance to try.” Another student said, “We were doing book
search and catalogue. That was all. There was really nothing.” They seemed to attribute the
lack of practice to their inability to independently access and use online sources for their
project work. One student said,

> It was difficult because we now have to search for some websites and sources to
gather information for our portfolio. So, it is hard for all of us in the group; no one is
able to do that—to find the website or even sources of information.

When librarians were asked about whether they were aware of the challenges that
students had with using online sources for research, they acknowledged the challenges and
stated that information search skills are complex; therefore, first-year students needed a lot of
practice in order for them to master the skills. One librarian said,

> It takes a while. It is not a skill that students, especially first-year students, can
master. It’s only when they do searches repeatedly that they can master some of
these skills. It doesn’t take one day to learn how to drive a car or how to type.
We say to them, “Don’t take one day to be familiar with researching online
resources.”

Librarians emphasized the need for the “Academic and Information Literacy Skills”
module to be taught in a computer lab so that students could be engaged in practical activities
that enable them to acquire the relevant academic research skills. One said,

> This is a practical course, and I would prefer to teach in the computer lab, where I am
able to teach theory and practical at the same time instead of teaching theory and then
teach practical. What is important is for a student to be able to find an encyclopedia, have access to it, and use it than being able to know what it is.

When students were asked during a focus group interview what support they needed in order to effectively develop appropriate information literacies, their comments were:

- “Provide computers in the classrooms during lessons.”
- “Resources should be availed and for some of us who are not computer wizards or who were schooling in rural areas be taught how to use them.”
- “Guidelines on effective ways of researching for useful information, which can be for assignments or further learning materials.”
- “We should be given more work that require researching from the Internet and the software that checks for plagiarism.”
- “Trained personnel who can assist us on how to use technology at least twice a week.”

4.4.4.2 Students’ Use of Digital Tools to Compose and Produce Academic Texts

The COM courses were designed to ensure students developed literacies that enabled them to effectively read and write academically and professionally. Most of the students’ interview responses and observations indicated that, for both courses, the types of texts that students composed were mainly academic essays, summaries, structured outline notes, and reports. As well, the focus in students’ writing practices was developing ideas within and between paragraphs, summarizing ideas, and acknowledging sources. This was confirmed by one student who said, “I learnt how to write an excellent essay because, in other classes, we were just told, ‘Isn’t it you guys know how to writing essays? Go and write.’ So, in
COM, we are taught how to write an essay.” However, the use of PowerPoint and the production of slides for presentations were mentioned by a few students.

One of the assignments that students were expected to write was the academic essay. In order for them to write quality academic essays, they were required to learn how to correctly acknowledge information sources. Students’ interview responses about their experiences with essay writing and acknowledging sources of information in their writing revealed that most students used information from non-academic (e.g., non-peer-reviewed) online sources, such as college or institutional websites, reports, and Wikipedia. They acknowledged that they had challenges with using information that they obtained from online sources in their academic writing assignments. Evidence from their essays indicated that, since they used information from non-academic sources, such as institutional websites, it was difficult for them to properly cite these sources within their writing. During a focus group meeting, students talked about this challenge and observed that, when they used these sites, they found them difficult to cite. One of the students explained that “the site did not provide much information on publishing details, which was an extremely tricky challenge.”

Interview discussions with the lecturers also revealed the challenges that students had with using sources of information in their writing. The lecturers emphasized that students were taught how to search for information from databases but that that knowledge was not reflected in their writing because students were not using a variety of sources in their essays. One lecturer said, “When [librarians] teach them how to use the search engines, how to access the databases, and all those things, it should actually show in their work—a variety of information sources that they have been exposed to.” One of the lecturers raised a concern that, despite what students had learnt, it seemed like students did not
internalize the whole practice. It’s like they are doing it to satisfy the requirements, get the marks for the work, and, the next module you give them an assignment, they still face the same problems. They won’t use the skills that they learnt on the library lesson.

With the emergence of new technologies and their affordances, students are expected to engage in literacy practices that integrate these technologies in their writing. However, individual interviews with focus students about types of texts that they write in the COM courses and my observations revealed that most of the texts that students were assigned to write were print-based, and students were not required to use a variety of multimedia. A few students mentioned that they used PowerPoint slides for presentation, but, even with the slides, there was not integration of other modes apart from print text. One student said, “We produce slides for presentation; we just write a few points on the slides, and the group members just do the elaboration.”

4.4.4.3 Summary of Theme 3

The Internet is a repository of abundant information which students can easily access and use; therefore, university students rely on it for academic research. Interview results for this study indicate that the main reason for most of the students’ reliance on Google and Wikipedia for research was the ease with which they could access and use information from these online sources despite the encouragement from their lecturers to use university library databases.

Results also suggested that, although students opted to use these sources of information, they lacked the ability to evaluate and analyze the online sources to establish their reliability and the accuracy of the information in order to effectively use the information
in their assignments. For instance, when they started a search on Google, students tended to pick the first few entries that appeared on the page as reference sources for their assignments, regardless of whether the sources were deemed academic or non-academic. Similarly, when using Wikipedia, the accuracy of the information was not evaluated nor verified; instead students claimed that, since the information used in Wikipedia was from various published books and journal articles, the information was valid as a source of information for their academic work.

Students’ use of the university library databases, such as Google Scholar and EBSCO Discovery, was minimal and, in some projects, non-existent. Students claimed that the non-use of these information resources was due to a lack of the skills necessary to access and use the sources. They reported that, during their information literacy instruction, they were not given the opportunity to develop the skills that would enable them to independently search for relevant information online.

Evidence of students’ course writing indicated that they mostly engaged in traditional forms of composition, such as essays and summaries. Although some students indicated that they used PowerPoint slides, there was no evidence that there was an integration of multimedia to ensure that other modes of representation apart from print text were incorporated.

4.4.5 Theme 4: Digital Technologies for Academic Communication

The increase in the use of digital technologies in all contexts demands that students use a variety of online sources to communicate with friends and peers, both in social and academic spaces. In order to gain insight into students’ use of the university’s LMS
communication tools and social media, along with their perceptions of the usefulness of such tools to enhance learning, I used individual and focus group interviews.

Lecturers and students at the university were expected to use the LMSs—Blackboard, Moodle, or both—in the learning and teaching of their courses. In this section, I will report on students’ use of online LMS communication tools to enhance their learning in the Communication and Academic Literacy Skills courses. I examined the Blackboard and Moodle course pages and also used individual and focus group interviews to find out which communication tools were used to enhance learning.

An examination of the course pages revealed that, for the COM 121 course, the lecturer’s expectations that were outlined on the welcome page were that “most [student] discussions will be on the WebCT discussion forum, and you are expected to contribute meaningfully. You are expected to respond to your group members so that the discussion does not become draggy” (personal communication [COM 121 course page], October, 2013). Despite this expectation, there seemed to be no evidence that students used the discussion forum. Interview responses on whether they used this forum confirmed this observation. Students reported that they never had opportunities to use this forum for discussion. One student said, “I’ve never been on any discussions, so I wouldn’t say much about them,” while another said, “So far, we haven’t discussed anything. We only communicate through other means or we meet.” However, there was evidence that students and lecturers used the LMS mail tool for communication about class activities, announcements, and assignments. While the mail tool was used for these activities, there was minimal communication through this tool among students.
An examination of the use of communication tools in the COM 111 course revealed no evidence of use. Although there was no evidence of use, students’ interview responses on whether they perceived online communication tools to be useful in enhancing their learning showed that the use could have advantages for student learning. One student said, “You can be able to exchange ideas as students.” They also perceived the tools to be useful in affording students the ability to freely communicate and express their ideas without fear of intimidation from other students or their lecturers. One student said,

When you are asking something there, and nobody is looking at you, some of the questions you cannot just ask, but, if you are sending a message, you can ask anything without getting shy because other students, when you discuss a question with them, they might think that you are stupid and maybe laugh at you, but, if you don’t see them, you just ask.

Another student said, “Some students in our class are afraid to approach the lecturers face to face, so they can be able to express themselves—be able to ask what they are not able to ask in class.”

With social media continuing to find its way into the classroom, exploring the use of social networks to enhance students’ communication for academic purposes was important in this study. An investigation of whether social media networks were used in the learning and teaching of the COM courses revealed that one of the lecturers who was selected for the study used social media for the COM 111 project assignment.

In order to find out how the students were expected to use social media, a project assignment sheet was examined. Focus students taking the COM 111 course and their lecturer were interviewed to identify the social media they chose and how they used the
media to communicate during the project. The interviews also probed students’ perceptions of the effectiveness of their use for communication during the project.

For the research project assignment, the expectations were that students

a. use available social networks—Facebook, WhatsApp, BBM or text messaging—to discuss the topic that they would like to work on; (For ease of communication, you are to form a group for the mode of communication that you are going to use.)

b. meet without meeting face to face. Inform your lecturer about the mode of communication that you are going to use. As a form of evidence, print the conversation/chat that reflects your communication with group members. (personal communication [COM 111 Humanities, Library Research project handout], 2013)

Individual interview responses about which social media students chose and how they used it for group communication indicated that most of the groups chose Facebook, with the reason being that most of them were already on Facebook, and it was easier for them to create Facebook groups for the research project. Some of the responses were:

- “We chose Facebook because all of us are on Facebook. That was easy for us.”
- “Many people or almost all of them were, except for me, were on Facebook, so they found, like, they developed that relationship sort of with Facebook.”

Some of the responses seemed to indicate that the choice for the use of Facebook was based on the cost of using Facebook, which was cheaper than using text messaging. One student said, “My group members didn’t agree to SMSing—texting—because they said it was costly; so, then, I had to compromise.”

Individual and focus group interviews that asked students whether and, if so, how the groups communicated online, revealed that students adhered to the task requirements; they
did their research separately and then discussed online instead of meeting face to face. One student said,

What we did was, we just communicated. Like, [if] our topic was skimming and scanning, what I would do was I would go find information regarding that; then, I will post it; then, others will go and research and also post; and, then, we bring them together; and, then, we start to weigh the information on Facebook. We discuss that information on Facebook. It was like we never met physically; our meeting was through Facebook. That was what the course required.”

An examination of the group Facebook pages confirmed that students discussed their projects online. For instance, Figure 4.15 shows the discussion among members of the group “Power Up,” whose topic was “the advantages of online versus face-to-face communication.” The screenshot shows how group members engaged with each other and how they shared ideas on the topic.

![Figure 4.15. Facebook communication for group “Power Up.”](image)
Students used the space to share their opinions and ideas, which were directed toward achieving their project objective by engaging in a discussion on the pros and cons of online versus face-to-face communication. Each member contributed their views and opinions on the topic, questioning and providing each other with answers that they believed would help them complete the project.

While Facebook was used to facilitate online group discussions for the project, students’ interview responses revealed some challenges that the groups faced in the process of completing the project. For instance, some group members were not able to always be online and were, therefore, not participating in the Facebook discussions as expected; this necessitated groups opting for alternative communication tools, such as voice calling or text messaging on mobile phones, in order to ensure equitable participation of all group members. In one interview, a student explained that “the chairperson texted us because some of us are never online.” Another one also expressed similar sentiments: “Sometimes, we used text messages because they go directly to the person’s phone, and they would respond, unlike with Facebook.”

Another challenge reported by some of the groups was that sometimes they had to opt to meet face to face because it seemed more convenient for obtaining immediate results. One of the students said, “It was better to come up with a topic together, so we had to physically meet.” Although the assignment required students to choose one form of social media for communication during their project, students were able to independently find alternative ways of communicating which they deemed appropriate and more inclusive to facilitate group discussions, expedite the research project process, and meet the objectives of the project.
Students’ individual and focus group interview responses on the use of social media for academic communication were positive, with most students indicating that communicating with peers on Facebook enabled them to develop relationships that went beyond the research project assignment. One student said,

It helped us, like, coming from different communities, different high schools; we were not used to each other, but, through communicating on Facebook, we got to know each other, and we relate very well. For example, we were preparing for the exams; we came together and studied together.

Other students believed that communication on Facebook afforded them opportunities to learn from each other in the discussions that they had. One student confirmed this by saying, “We learnt a lot; we learnt from each other’s posts as we were discussing.”

In addition, the Facebook page was seen as a repository where they could store conversations to which they could later refer for the project assignment. This was observed by one student who said, “Using Facebook was effective because the conversations are there; you can go back and reflect on the conversations and say, ‘Hey, we talked about this. Let’s add this to our minutes.’”

While most students’ views were positive regarding the use of Facebook for discussing the project, some of the responses from students’ interviews revealed that group dynamics could have impacted the project output. Students reported that some group members were reluctant to discuss during face-to-face group meetings. One student said, “Communicating online makes [the students] to be more reluctant. If they fail to interact, to contribute, when we are together, it becomes even worse when we communicate through Facebook. That’s the problem.” Other concerns raised were that some group members were
not willing to do research so that they could contribute to the discussions. One student explained that, instead of doing research and contributing to group discussions, “[those students] relied on [other students] who bring the information and just commented on that information, and they do not bring their information, so you end up submitting your own work for the group.”

Another challenge that was reported during the focus group interview was that, since communication on Facebook was asynchronous, some students used that as an excuse not to contribute in a timely manner, which delayed the project work. This resulted in some groups abandoning the online platform and opting for face-to-face meetings, which they viewed to be more effective. One student said,

Face-to-face was effective because nobody was online at the same time. You would find that, when you get to the page, somebody has already posted, and then you respond when they are already offline. Maybe it would have helped on our part if we could do the same thing at the same time. Because of that lack of group energy, some people just thought they could do it later. We decided that it’s better to come up with the topic together, so we had to physically meet.

When asked about why their responses to discussions on Facebook were untimely, most off-campus students reported that they had challenges with access to resources such as the Internet and computers and viewed this lack of access as impacting the frequency with which they contributed to discussions during the project. One student said, “I had to comment late after they had said what they wanted to say since my phone did not allow me to get to Facebook. I had to wait until I was at school so I could use the computer to comment.”
4.4.5.1 Summary of Theme 4

In this section, findings about students’ use of communication tools to enhance learning were presented. Results indicated that students used LMS tools for communication minimally, with only one of the classes using the mail and chat tools to communicate about assignments between the lecturer and the students. Similarly, the use of social media networks was also not commonly used in the COM courses to communicate about academic work. Findings revealed that only one of the selected classes required students to use social media for communication for their project. Students reported that they found the use of social media for academic communication to be helpful in developing their academic literacies. For instance, students who were less confident about communicating in face-to-face meetings had an opportunity to contribute more to discussions in less-intimidating environments than they would in face-to-face interactions. Furthermore, students viewed the use of Facebook as enabling them to build communication networks with peers even beyond the project, mentioning that using these tools had benefits such as enhanced engagement and collaboration, as well as building of good relationships and networking opportunities among group members with the same academic interests. Finally, most students attributed the popularity of the use of Facebook and text messaging among small groups to low costs, reporting correspondingly that they did not use mobile voice calls often because of the associated higher costs.

While the results indicated that most students’ perceptions on the use of social media for academic work were positive, suggesting that social networking tools encouraged communication and collaboration among group members, some responses indicated students’ mixed reactions about the use of social media for academic communication. Some of the
students had concerns regarding the negative impact that the use of social media tools had on the project process and ultimately on the group performance; for example, off-campus students had inadequate access to computers and the Internet, which delayed their timely contributions and feedback to group discussions. Further, some students did not participate fully in the discussions and over-burdened other members who ended up doing most of the work for the group.

It can be concluded that, while online platforms could be viewed as important for developing students’ collaborative skills, student responses in this study indicated challenges that may have hindered the development of such skills. The imbalances in the group member participation, though not unique to online platforms, highlight challenges faced by students’ engagement in asynchronous online discussions. These challenges seemed to emphasize the importance of having a structured and supportive online environment, where a lecturer plays an important role in ensuring students’ equal participation in project work. Students perceived that challenges could also point to the need for the provision of clear and concise guidelines that outline expectations for online participation and achievement of the assignment goal.

4.4.6 Theme 5: Student and Lecturer Perceptions of Digital Technologies for Learning and Teaching

Lecturers’ and students’ perceptions of the use of digital technologies to enhance learning and teaching were key areas for investigation in this study, including lecturers’ views on the extent to which they perceived the use of digital technologies as important in their teaching, and how the use of technologies might impact their pedagogies and how students learn.
With regard to establishing students’ perceptions of the use of digital technologies to enhance learning, data from student interviews indicated that most of the students in this study felt that digital technologies potentially afforded them opportunities to develop competencies they needed for future careers. One student said, “Digital technologies would prepare us Year 1s for the corporate world. It would instill personal development on the first years, as some would be experiencing technology for the first time.”

In addition, the importance of using digital technologies in developing academic literacies that would enhance students’ academic success and, subsequently, play a role in the development of the country was also acknowledged. A student said, “Effective use of digital technologies in academic literacy can help us come out with the best results, which will help develop the [country’s] economy as leaders of tomorrow.”

Furthermore, students viewed the use of digital technologies to be important since it afforded them opportunities to have an international outlook; at the university level, “the focus is not only locally; we need this technology so that we can even know what’s happening around the world.” Students perceived the use of digital technologies as affording them opportunities to learn beyond the classroom.

It exposes us to the world ideas and information—broadens our minds. This world is changing, so it wouldn’t be fair for us to know this much when the world is—when technology is advancing to—somewhere to a higher, much, much, higher level. We have to learn more and more and more so that it, we, we won’t have a difficult future.

Lecturers’ views on the extent to which the perceived use of digital technologies is important in enhancing students’ learning were positive, as were the views of the deputy director of the Communication and Study Skills Unit, which were aligned with the concept
of globalization. He emphasized that integrating digital technologies into the COM courses would equip students with skills that would enable them to be global citizens and life-long learners. He said, “We are trying to produce life-long learners—you know, people who can survive out there in the world. So, this is the main reason we decided to integrate technology.”

However, the deputy director perceived lecturers’ use of digital technologies in the learning and teaching of the COM course to be minimal and attributed their lack of motivation to challenges they faced in their use, such as high teaching loads and inadequate technical support. As a result, the director perceived lecturers resorted to traditional teaching methods that he said were normally considered “the easiest way to go.”

He reported that individual lecturers were now seemingly showing more interest in professional development and, subsequently, in creating and designing courses for uploading onto LMSs. He said, “I think, now, the lecturers are beginning to see the value of technologies in education. Of course, it is still at individual level, but they still attend workshops now, upload their courses, so I think they are moving in the right direction.” He saw technical support to be important in sustaining skills that lecturers need to effectively use these digital technologies for learning and teaching. He felt that workshop facilitators from the Educational Technology Unit should be proactive in ensuring lecturers receive appropriate and relevant training for their departmental needs.

Rather than sit there and expect staff to enroll, [the Educational Technology Unit personnel] should take educational technology to the people, to the units, the departments, you know—try to sit down with the departments and identify gaps and weaknesses, find a way of closing those and/or encouraging staff in those
departments to work together with them. Find out “Do they use the
technologies?”,”Is it sustainable?”,”Where could the problems be?”", and try to
come back and say, “OK, maybe people are not using it because of 1, 2, 3.”

Generally, most students perceived the provision of and access to digital resources on
campus to be convenient because they could access these anywhere on campus. One student
said, “We do not have to go to the library to access the computers there; we could meet
anytime we felt was convenient.” However, challenges, such as the slow and unreliable
Internet connection, were viewed to negatively impact the learning and teaching process.
One student said, “The Internet can be very busy and slow, and, other times, the whole
system can be down.”

Students’ perceptions were echoed by lecturers’, who also believed that inadequate
provision of the Internet had a negative impact on instruction. They said,

[It] takes long to load; like, if a student invites you for a chat—because, maybe, they
want to ask you questions—by the time you accept the invitation, they have already
left the room because they waited, and the system took time to get back to them that
you have accepted their invitation to chat.

Similarly, one lecturer reported that

having students responding to chats, discussion forums—it’s a challenge . . . because, when it comes to wireless network, it’s unreliable; at times, there is, at times, there
isn’t. So, even if I have intentions of doing as much as I can using ICTs, at times, I
get discouraged by the availability of the Internet in class.

Students who lived off campus also reported that access to the Internet was a
challenge because the cost the Internet incurred was an impediment to accessing information
for study. One student reported, “For me, like, uh, I’m staying outside campus, so looking for information, it’s difficult. The modem I’m using doesn’t have airtime. I have to use my own Internet; I have to pay.”

In addition, lack of access to computers was also a challenge, more so for off-campus students, whose access to and use of computers was restricted to when they were on campus. These students viewed access to computers as critical to ensuring academic success. One student said:

I think computers are much needed in order to succeed in the course, but the problem is that, for off-campus students like me, we only get a chance to use computers when we are in school, but, other times, we have assignments, and then we do not get a chance to use computers.

Lecturers’ views on the importance of access to digital technologies in enhancing students’ learning were similar to those of students. Lecturers reported that:

- “Most students stay off campus if they cannot get that access during the day. In the evening, they are not there, so it is very difficult.”
- “Technology being down, not being able to access Blackboard from the comfort of their homes, you know, having to be on campus to be able to do that. My understanding is that they must actually come to university to access some of these, ah, some of these technologies.”

Librarians viewed the importance of access to digital resources for instruction as important to providing students with opportunities to engage in activities that would develop the skills that are required for academic success; hence, it was imperative for students to have access to computer rooms during instruction. Librarians viewed the lack of access as
contributing to students’ lack of engagement in literacy events that would give them opportunities to develop skills such as the confidence needed for them to succeed academically. One librarian reported that, during instruction for the “Academic and Information Literacy Skills” module, he would say to the students,

“Sit down, and I do a demonstration.” Here, we tell them to pay attention to the demonstration, and they are quiet. When students are able to have access, it boosts their confidence. Passive learning is not beneficial to students compared to when it is hands-on—where I press, and they also press.

The views of one of the librarians were similar to those of her colleague where the importance of teaching the “Academic and Information Literacy Skills” module in a computer room where students can engage in practical activities was emphasized. She said, “Ideally, this is a practical course, and I would prefer to teach in the computer lab, where I am able to teach theory and practical at the same time, instead of teaching theory, and then I teach practical.” Similarly, most students were of the view that access to computer rooms during instruction would be beneficial to improving course instruction and, subsequently, the skills they needed for academic success. Some of students’ comments were:

- “In our course, COM 111, I think it should be improved by us being given classes that have computers.”
- “If there was a room where students have access to laptops, we were going to be able to use ICTs in communication studies without problems. We were going to learn the skills very fast because, even outside school, we were going to learn some new things on our own. I think computers are much needed in order to succeed in the course.”
Many students reported that most of the computers in the student computer laboratories were not working; hence, students had to queue for computer use. One student commented,

The labs, the library, there are many computers, but most of them—a lot of them—are not working. When you have to go to the library so that you can access information, you find that most people are using the computers. Then, you have to wait.

Lack of access to computers was confirmed by the deputy director of the Communication and Study Skills Unit, who said, “You know, access to computers is not as easy as one would have. You know, imagined it to be in a university like ours; it takes a while for a student to access that computer.”

An interview with the deputy director of the Educational Technology Unit indicated that, indeed, students’ access to computers was a challenge. He reported that “the issue of access has always been a major challenge at [the University of Botswana],” claiming that the inadequacy of the computers in student computer labs was a result of students’ mismanagement of these computers. He explained that student vandalism and theft of computer parts was a major source of the inadequacy and that the Department of Information Technology (IT) could not keep up with the maintenance of computers in the labs. He said,

If you talk to IT and ask them, the repairs they are doing, within 30 minutes of students sitting there, [the students] rip off the hard disks. We try to monitor; we have gadgets there to lock. They just rip and steal them.

Unlike other academic staff members, the director perceived access to digital technologies at the university to have greatly improved and could be considered adequate
because the university had put into place technological infrastructure intended to support lecturers’ and students’ use of ICTs for learning and teaching. As he said:

We are at a point where we are saying, “One, every classroom has to have a data projector, every classroom has to be connected to the Internet, every classroom must have a PA system and motorized screens”—and, today, over 300 classrooms are so equipped. There are drop-in labs, open 24-7, 250 computers in three different computer labs in three different floors in this building [i.e., Block 247]. That is the best we can do in terms of the on-campus availability of computers, computer facilities—and, in a lot of ways, we try not to use them for teaching because those are walk-in labs; they are not teaching labs. The other thing we have done—like I said, IT has done—is to make the whole campus a hot spot.

4.4.6.1 Summary of Theme 5

Findings in this study indicate that both students’ and lecturers’ perceptions of the use of digital technologies for learning were positive. Students perceived the use of digital technologies for the purposes of learning to be beneficial in preparing them not only for school but also for the world of work. They viewed the use of digital technologies as having potential in affording them opportunities to develop skills and competencies needed for academic and professional success. They believed that integrating digital technologies into the learning and teaching of the COM courses would equip students with skills for life-long learning.

However, despite the perceived potential, lecturers’ use was perceived to be minimal, resulting from perceived challenges such as a lack of motivation to use digital technologies for instruction and inadequate access to digital technologies for learning and teaching. The
importance of providing lecturers with appropriate technical support to motivate them to effectively integrate digital technologies and allow students to engage in the learning process was emphasized.

Findings from this study also show that students and lecturers perceived access to digital technologies as important to the enhancement of students’ learning experiences and that lack of access could have an adverse impact on students’ learning and on teaching. Although it would be ideal if students had equitable access to these technologies in order to fully participate in the learning process, it was shown that there were variations in access to and use of digital technologies for on- and off-campus students, with the latter perceived by participants (e.g., lecturers and the CSSU deputy director) to have very limited access, which impacted their academic performance.

While the university had apparently made efforts to provide digital technologies and tools for learning and teaching, a major challenge identified was the slow and unreliable Internet connection, which was considered to have adverse effects on pedagogical choices and students’ academic performance. Another challenge was students’ vandalism and theft of computer parts that led to inadequate technological resources for the student population, thereby, creating unequal access to and use of technologies. Overall, it was evident that, despite the university’s efforts to provide students with access to digital technologies, there was a need to address current challenges in order to achieve an effective learning and teaching environment.

4.5 Chapter Summary

The findings in this chapter indicated that, despite the value that both lecturers and students attached to the use of digital technologies for learning, both students and lecturers
were haphazard and infrequent in the ways they used these technologies. Students seemed to express a desire to supplement pen and paper with the use of digital tools and resources when writing, which could be viewed as an indication of how differently students in the digital era—sometimes, though problematically, referred to as “digital natives”—learn and how traditional pedagogies that lecturers employ may no longer suffice.

Data for this study indicated that students saw their own lack of active involvement in the learning process as not enabling them to develop the skills they needed for academic success. Students viewed digital technologies as tools that would enable them to engage in the learning process and optimize their learning experiences, thereby affording them opportunities to develop the necessary competencies and skills for academic and professional success.

Learning management systems (LMSs) are some of the technologies that continue to be part of the university classroom delivery experience, allowing lecturers to upload course material, such as content, assessment, grades, and announcements, which students can easily access and use anytime and from anywhere. Findings of this study indicated that the University of Botswana adopted and encouraged lecturers to use its Blackboard and Moodle LMSs for course delivery. Although LMSs can provide a wide range of tools that can facilitate effective educational delivery, results from this study indicated that lecturers did not fully exploit the potential of the tools and limited LMS use to the storage of lecture notes. As a result, students viewed online course materials as lacking in creativity and interactivity; hence, they did not seem to be motivated and encouraged to access and use the LMSs or the course materials that were uploaded onto them. Findings also indicated that, while lecturers valued the use of LMSs for enhancing learning and teaching, they believed that the inability
to appropriately use some of the online tools, such as the assessment tools, was as a result of a lack of skills in appropriately and effectively using them. They implored the Educational Technology Unit to provide them with the appropriate technological support in order for them to effectively use the tools to enhance students’ learning in the course, but the unit did not respond to their request.

Students entering the university are required to engage in research for academic purposes; thus, there is a need to adequately support them in the development of the skills needed to access and use appropriate information for academic tasks. In this study, results showed that most students relied heavily on online sources of information, rather than paper-based sources, for their academic research. This finding was surprising since most of the students in the study indicated that access to the Internet was inequitable—with most of the students complaining that the provision of Internet on campus was slow and unreliable and off-campus students reporting that accessing the Internet off campus was expensive—impacting their access to information and, ultimately, their academic performance.

Results about students’ online search strategies showed that—despite encouragement from lecturers to use the online library card catalogue to access and use (peer-reviewed) sources in databases such as EBSCOhost, Google Scholar, and Science Direct among others—students heavily relied on search engines, such as Google, to access and use information for academic work. In addition, there was limited evidence that students were able to evaluate information sources, as well as the information that they accessed and used, in order to determine their accuracy and reliability. For instance, students would either use information from the first entries of their website searches or use information from Wikipedia or institutional websites. Therefore, it can be concluded that, although students
relied on the Internet to access information, they lacked strategies to select appropriate sources for academic research.

Findings about students’ use of online information for writing indicated that they were unable to adequately and correctly use online sources. Most of the sources students used were not from scholarly journals, and students were unable to appropriately reference their work. These results revealed students have challenges with the access and use of online information; therefore, there is need for them to be adequately supported in the development of the academic literacy skills they require for academic success.

With the influx of communication tools, it is important for students to be supported in the effective use of these tools so that they can develop the skills necessary for effective collaboration within online communities. With the use of LMSs, lecturers have an array of communication tools, such as e-mail, chat, who’s online, discussion boards, and announcements, that they can use to enhance learning. However, findings from this study showed that the mail tool was the only communication tool that one of the lecturers and her students used in the COM course. Students received and sent back assignments to the lecturer, and the lecturer communicated any other information or announcements through the mail tool. It was evident from the findings that, although there was a variety of tools to use for communication, lecturers and students did not fully exploit them.

Results of this study revealed that, although social media networks are being explored for use in academic contexts, these were not commonly used in the learning and teaching in COM courses. Data showed that the use of social media as tools for communication in academic contexts was explored in one of the courses in the study. Students were required to choose any social media tool and use it for communication during a research project. The
results showed that, among all of the social media networks, Facebook was the most used among students due to its low cost, familiarity, and perceived ease of use. However, to some extent, text messages on mobile phones were used as an alternative form of communication, while voice calls were either unused or used sparingly since they were considered an expensive form of communication. It was interesting to note that none of the groups mentioned using video conferencing tools, such as Skype, despite the availability of functions such as free calls and instant messaging. This may be an indication that students were not familiar with the functions and the advantages they could have afforded.

Although online communication is regarded as important in the development of collaborative skills needed by students academically and professionally, results revealed a myriad of challenges that students encountered during the process of completing their project, including reluctant participation in discussions by some group members, unreliable Internet, and a lack of access to the Internet and computers by off-campus students—some or all of which could have negatively impacted students’ performance on the project. While it is important to use technologies to motivate and engage students in the learning process, these findings suggest that it is also important for the role of lecturers to be clearly defined in online contexts so that students are appropriately supported.
Chapter 5: Conclusions and Implications

5.1 Introduction

This chapter presents a discussion of the findings based on the data analyzed in the previous chapter. The focus of this study was to explore the use of digital technologies to enhance the teaching and learning of the *Communication and Academic Literacy Skills* (COM) course at the University of Botswana—to establish whether and, if so, how the integration of ICTs into the Year-One COM course at the University of Botswana supports the development of first-year students’ academic literacies. The following research questions guided the study:

1. What technologies are available to first-year students taking the *Communication and Academic Literacy Skills* course at the University of Botswana?
2. How do first-year students use the digital technologies available to them to enhance their academic literacies?
3. What are first-year students’ perceptions about their use of digital technologies in learning?
4. What contributions do digital technologies make to the development of students’ academic literacies?
5. What are lecturers’ perceptions about the use of digital technologies to enhance students’ academic literacies?

Data were collected through questionnaires, interviews, observations, documents, and focus groups to address each of the questions, and key themes were established, as presented in Chapter 4.
In this chapter, I will discuss the major findings of my study and the implications for supporting the development of academic literacies necessary for first-year students’ success at the University of Botswana and in their professional lives. I will focus on two key topics as well as sub-topics that emerged together from the themes in Chapter 4 and relate them to current research in the field:

1. patterns and frequencies of student usage of digital technologies for learning;
2. student use of digital technologies and student and lecturer perceptions of digital-technology usage to enhance academic literacies:
   a. learning management systems (LMS) to enhance learning,
   b. online information sources to enhance academic reading and research skills,
   c. online resources to enhance academic writing skills, and
   d. online communication and collaboration tools to enhance academic learning.

Furthermore, the limitations and significance of the study as well as recommendations and suggestions for future research will be presented.

5.2 Patterns and Frequencies of Student Usage of Digital Technologies for Learning and Teaching

The general findings in this study revealed considerable variation in students’ use of digital technologies in terms of their daily and weekly patterns and the frequency with which they use those technologies. Student self-reports on their access to and use of technologies indicated that they used a range of technologies for both their social and academic lives. Their interview responses, however, indicated that their use of digital technologies for academic learning was minimal.
Further, students reported that they lacked adequate access to and use of computers both on and off the university campus. However, to some extent, they had access to and use of computers and the Internet at different access points across the university, such as in the library, student open-access labs, and faculty computer rooms.

In addition, students reported using Microsoft Office tools, such as Word, Excel, and PowerPoint, for academic purposes. However, it appeared that most students used Microsoft Word for creating and presenting documents more than they used other tools such as Microsoft Excel and Microsoft PowerPoint. This popularity of the use of Microsoft Word was attributed to the type of assignments that students engaged in because it seemed that students were mostly assigned word-processing assignments, such as essays and summaries. In very few instances, they were required to do oral presentations using Microsoft PowerPoint. There was, however, no evidence of the use of Microsoft Excel despite students’ self-reports.

The frequency with which students used digital technologies varied from one technology to the other. For instance, among the most frequently used technologies were mobile phones, which students mostly used for non-academic purposes, while desktop computers were used to access the Internet for information for academic purposes.

The frequency with which students used LMS tools also varied. For instance, most students used the course-content tool more frequently to access and download course content. However, other tools, such as communication and assessment tools, were minimally used, if at all. These findings corroborate findings from previous research (Mpofu & Chikati, 2013; Mutula, 2010; Umunnakwe & Sello, 2016) which indicated that most first-year students entering universities in Botswana lacked access to and use of computers in
secondary school and that their competencies in the use of digital technologies for learning and teaching were low.

While the expectation is that today’s students grew up with technology and, therefore, should be able to use a variety of technologies in learning, it seemed that students mostly relied on the technologies that lecturers used for learning and teaching and did not move beyond the conventional technologies and tools—computers, mobile phones, and e-mail, for example—to engage in learning tasks (Kennedy et al., 2008; Ko, Thang, & Ou, 2014; Margaryan, Littlejohn, & Vojt, 2011).

The findings in this study suggest that, while students during the time of this study claimed to use various technologies in their social lives, their understanding of how and their ability to use these tools for learning in academic contexts appeared to be limited (Corrin et al., 2010; Margaryan, Littlejohn & Vojt, 2011). For instance, students in this study only accessed the LMSs to retrieve notes and other learning materials that lecturers uploaded; they did not proactively use these tools for learning individually and with their peers, corroborating findings by Umunnakwe and Sello (2016) that first-year students need support in the use of digital technologies for effective learning and teaching.

Another notable finding was that off-campus students reported about inadequate access to and use of computers and the Internet as well as the high cost of accessing these resources, which seemed to negatively impact their academic performance. Access to digital content has been perceived to play an important role in positively impacting students’ learning and academic achievement while lack of access could increase the information divide and intensify inequalities educationally and in the world of work (Pagani, Argentin, Gui, & Stanca, 2016). In the context of this study, the importance of ensuring students’
equitable access cannot be over-emphasized because the proposed attributes of graduates of the University of Botswana highlight the need for students to have acquired the academic literacy skills—among them, digital and information literacy skills—needed for the workplace (University of Botswana, 2008b). It is important for lecturers to understand the importance of the role of student access to technologies and how access determines the patterns and frequency with which students use digital technologies to enhance learning. Most importantly, if lecturers are to produce graduates who have the knowledge and skills to explore and use a vast array of technological tools to access online information, lecturers need to encourage students to create, communicate, and collaborate with a range of technological tools in order to become creative, life-long learners (Ellis & Newton, 2009; Kennedy et al., 2007).

5.3. Student Use of Digital Technologies and Student and Lecturer Perceptions of Digital-Technology Usage to Enhance Academic Literacies

In this section, I will discuss students’ use of digital technologies as well as the perceptions students and lecturers have of the use of digital technologies to enhance learning. I will first discuss the use of the University of Botswana LMSs by both the students and the lecturers to enhance learning in the COM courses. Secondly, students’ use of online information resources to enhance their academic reading and research skills will be discussed. This will be followed by a discussion of students’ use of online resources to enhance their writing skills and their use of online tools for communication and collaboration to enhance learning in academic contexts.
5.3.1 Learning Management Systems to Enhance Learning

Findings on students’ use of the university LMSs to support learning in the COM course revealed that the LMS tools were minimally used. It appeared that the most commonly used LMS tool was the content course page, where lecturers uploaded most of the course materials—course outlines, class lecture notes, PowerPoint slides, and assessment tasks, for instance—for students to access and use for course learning. It seemed that student activity on the LMSs was limited to downloading notes; hence, students did not seem motivated to actively access and use the LMSs for learning.

Additionally, the students’ seemingly low usage of the LMSs was attributed to what they perceived to be low-quality course materials that were uploaded onto the LMSs. Carvalho, Areal, and Silva (2011) argue that students will utilize online educational tools, such as Blackboard, if they see it to be useful to them. Students in this study perceived the course materials to be dull and lacking multimedia content; for example, pages scanned from books and, in some instances, the same notes from class were uploaded, which students did not think was useful to them in their learning. Given previous research (Carvalho et al., 2011; Mtebe, 2015) noting that many lecturers in higher education in Sub-Saharan Africa lack the tradition and the experience to develop quality materials for their students, it may not be surprising that much of the material uploaded onto learning sites may be lacking in quality. When LMSs are used as document repositories rather than as active learning tools, students may be more likely to play passive rather than active roles—downloading class material and checking course announcements rather than actively sharing files with colleagues or participating in course forums.
The findings of this study raise questions about the expectations of students and lecturers in relation to the use of digital technologies for learning and teaching. While the university’s expectation was that lecturers use the LMSs effectively for learning and teaching, the findings of this study indicate a low comfort level among lecturers with regard to the use of LMS tools for course design and delivery, impacting lecturers’ effective use of LMSs. It was evident that, despite the training on the use of technologies for learning and teaching that lecturers had supposedly received, on the whole, lecturers in this study did not seem to have the confidence to fully exploit all of the LMS tools for instruction; hence, they ended up using a few tools on the LMSs for the purpose of learning. The findings here on the lack of use of LMS tools were similar to what Fidalgo, Paz, and Santos (2011) found when exploring teachers’ use of Moodle as a tool to support face-to-face learning. These researchers reported that, although teachers received training that provided them with expertise in using all of the main features of the Moodle LMS, they used Moodle mainly as a platform to provide resources and, to a minor degree, as a communication channel and place to receive assignments.

One notable finding in this study was the lack of use of the online LMS assessment tool in the learning and teaching of the COM course. This tool has been perceived to be critical in enhancing lecturers’ learning and teaching because of some of the benefits that it can afford, such as immediate feedback to students and reduction of marking loads, especially with large classes (Havnes, Smith, Dysthe, & Ludvigsen, 2012; Kearns, 2012). While students seemed to believe that using online assessment tools was critical and suggested that these be used in the course—a suggestion lecturers acknowledged—lecturers reported that they were unable to use the tools because they lacked the skills to design
compatible assessment tasks for the course. The expectation that lecturers engage students in technologically mediated tasks that they lack the appropriate skills to create begs the question: How will students acquire the required skills for learning? This calls for lecturers to be supported with adequate and relevant professional development in the use of a wide variety of digital technologies for effective e-learning. For example, the e-learning workshop sessions that the university conducts for academic staff (see Appendix D) need to be re-designed to ensure that the modules are more relevant and appropriate for lecturer needs.

Another finding of this study was the concern by some of the lecturers that high teaching loads was one of the barriers to effective integration to digital technologies in the learning and teaching of the COM courses. This finding corroborates that of Cakir and Yildirim (2013) that also indicated that, although teachers in their study had a positive perception of their ICT competence, they perceived high workloads to have negatively affected their ability to integrate technology. However, in a more recent cross-cultural study, Jurado and Pettersson (2017) did not view workload as a barrier to ICT integration; rather, they argued that lecturers lacked understanding of the pedagogical possibilities of ICT. They also argued that, instead of working independently, lecturers should interact, collaborate, and share ideas; they should form a community of practice so that sound, long-term pedagogical utilization of ICT can occur. These arguments have implications for pedagogy in the teaching of the COM courses because an observation was made that most of the teaching in this study was rooted in traditional, teacher-centered approaches that did not allow for integration of technologies. This could mean that, while excess workloads were a considered a barrier, lecturers at the University of Botswana should explore learner-centered opportunities for using digital technologies for learning and teaching. The university should
support lecturers through professional development initiatives to enable them to find innovative ways of using new and emerging technologies to reduce their workloads and to center their teaching on their students.

### 5.3.2 Online Information Sources to Enhance Academic Reading and Research Skills

In higher education, the use of the Internet has been recognized as playing a major role in providing students with an efficient way to access online textbooks, journals, and other online resources, affording students opportunities to succeed both academically and professionally (Emeka & Nyeche, 2016; Lacović, 2015; Lee et al., 2012). Students in this study reported that the Internet was their major source of information and, thus, depended on it—as opposed to on printed texts—for academic research. Lecturers seemed to think that, unlike their predecessors, present-day students’ heavy reliance on the Internet was a result of their exposure to the Internet and other digital technologies prior to entering university, though this exposure appeared to vary depending on access to digital technologies. As Joo and Choi (2015) found in their research, students preferred online library resources over traditional ones and used online resources because they perceived them to be useful and easy to use.

Although students in this study indicated that they preferred to use the Internet for academic research, results seemed to show that they lacked online information search skills that would enable them to effectively use the Internet to access, locate, and use digital content for academic work. The results indicated that most students resorted to the use of Google, Wikipedia, and institutional websites when they searched information relating to their topic. Students reported that they used these online resources because they were more user friendly and quicker to yield results, unlike using online library databases for academic
research, which was more difficult, more time-consuming, and sometimes did not provide them with the information they needed for their research topics. These findings corroborate results from studies by others (Boger et al., 2015; Holman, 2011; Purdy, 2012) that also found that the primary reasons students liked Google were its ease of use and near-immediate delivery of search results.

Students’ interview responses seemed to acknowledge that, although they were taught to use the library online catalogue to search for information for academic work, the instruction was not adequate for effective use; thus, students had challenges with its use and attributed the inadequacy to the pedagogical strategies lecturers employed in the learning and teaching of the “Academic and Information Literacy Skills” module. They reported that lecturers did not present them with opportunities to engage in hands-on activities during lessons, which resulted in an inability to develop the literacies they needed to access and use the university library online catalogue for academic work. These findings corroborate those from an earlier study by Mutula (2008), who also reported that first-year University of Botswana students lacked appropriate skills to use the university library resources. He reported that, while at secondary school, students were exposed to manual searches of card catalogues; when they entered the University of Botswana, most of the services of the university library were largely automated, making it difficult for the students to use the services of the library. Mutula, therefore, emphasized the need for first-year students to be supported in order for them to develop information literacies that would enable them to effectively access and use the library online databases. Mutula’s findings further suggest that the lack of good information search skills among the students in this study—that is, their potential inability to effectively search for and locate scholarly research on their topics—
could have contributed to their low usage of university library resources. This could emphasize the essential role that librarians play in providing students with support as they access various online resources available for usage (Dumebi, 2017). Accordingly, Joo and Choi (2015) consider familiarity with sources and the use of effective search skills to be significant in students’ academic performance.

Findings in this study seemed to indicate that students’ skills in evaluating information sources were a challenge because of the way in which they selected the sources they accessed for their research projects. For instance, when using Google, students selected the first few hits (i.e., results) of their search as references for their work. Some of the students who used Wikipedia reported that they considered the information they accessed on Wikipedia to be accurate, arguing that it was compiled from different published sources, such as books and journals; therefore, Wikipedia was trustworthy. It seemed that students’ apparently high levels of trust in the most immediate results from search engines and websites prevented them from investigating and evaluating sources of information in terms of, for example, author credibility and information currency and objectivity. Although the findings showed that lecturers and librarians had encouraged students to use information that was credible and trustworthy—a fact most students acknowledged—students reported that they lacked the skills to independently evaluate and analyze online information sources in order to determine relevance and accuracy of information. While this study found that students were discouraged from using search engines such as Google, Boger et al. (2015) have argued that librarians should not discourage students from using these search engines. Instead, librarians could leverage search tools that students are familiar with as starting points in searching for information before introducing them to academic databases. Well
before this study, Bull and Anstey (2007) argued that, for students to be considered literate in the digital age, they have to be able to analyze texts, identify their origins and authenticity, and understand how the texts have been constructed in order to perceive gaps, silences, and biases. Similarly, several years before my study, Hargittai, Fullerton, Menchen-Trevino, and Thomas (2010) emphasized the importance of equipping students with effective information search strategies—such as evaluating the quality of Web sources—arguing that guiding learners and supporting them with strategies for information search would enable them to appropriately select sources that match their information needs.

One of the librarians acknowledged that first-year students had no experience and skills to search for information using academic databases, so most of them seemed to resort to the use of search engines, which are easier to use for information searches. Students attributed their lack of skills to the inadequate instruction and lack of hands-on class activities during the “Academic and Information Literacy Skills” module. In addition, the duration of the module was considered to have contributed to students’ lack of acquisition of appropriate skills. The expectation by librarians and lecturers was that students would be able to develop information literacy skills in the short amount of contact time that was allocated for the “Academic and Information Literacy Skills” module. However, evidence from the data seemed to indicate that, despite taking the module, students continued to lack information search skills. Therefore, it appears that students need more time in the module and more engagement in activities that would enable them to transition from more basic to more advanced information search skills, which would include the introduction to academic databases (Boger et al., 2015).
Findings in this study also highlighted the concerns of librarians that students experienced challenges in appropriately citing information in the digital age. Although librarians believed that students in this cohort were more reliant on the Internet than previous cohorts, their concerns were that the increase in Internet usage and easy access to limitless amounts of information on the Internet have made students more vulnerable to plagiarism, which could negatively affect students’ writing if they draw on and use other people’s ideas and words without proper citation, a concern noted in earlier research (e.g., Kutz, Rhodes, Sutherland, & Zamel, 2011). Since the Internet is a repository for large amounts of information, enabling students to access and consume information with ease, students need adequate knowledge and clarity regarding how to appropriately access and cite information from the Internet in order to avoid plagiarism. Students in this study certainly seemed to perceive their preparation in the use of online sources for academic research as critical to the curbing of their inappropriate use of online sources. Therefore, lecturers need to effectively engage students in instruction on the importance of conventions of scholarly integrity so as to equip them with the skills to effectively navigate, select, and appropriately use information from online sources (Evering & Moorman, 2012; Greenhow, Walker, & Kim, 2009; Henderson, 2015).

Perhaps the most outstanding challenge identified by students—which was consistent with findings of a study by Ojedokun and Owolabi (2003) conducted 10 years earlier—was the limited access to computers and the Internet. Students perceived the limited access to the Internet to have adversely contributed to their ability to effectively access and use online information, thereby negatively impacting their academic performance. This corroborating research by Ojedokun and Owolabi (2003) revealed challenges with access to the Internet at
the University of Botswana and how the lack of access impacted students’ search for information for their academic work. This finding is not surprising because, although the university invested in technological infrastructure, including university-wide Wi-Fi, this study found that students had difficulty with the Internet in certain locations at the university due to lack of coverage or unreliable or slow Internet connections, impacting students’ access to information.

Finally, some of the students reported that they sometimes had challenges with access to resources such as computers because of the few computers that were working in the computer rooms around campus. They mentioned that, while computer rooms had a lot of computers, most of them did not work properly if at all. However, other data from the Educational Technology Unit revealed that students’ inappropriate behaviors such as theft of computer parts and vandalism resulted in the shortage of computers for student use in most of the computer laboratories on campus. As has been argued over the past decade (Aswathi & Mohamed, 2015; Fuchs & Horak, 2008; Roswell, Morrell, & Alvermann, 2017), this inequitable access to digital resources may impact students’ academic success and, subsequently, their employment opportunities.

5.3.3 Online Resources to Enhance Academic Writing Skills

In this study, findings suggested that students viewed the use of technologies as presenting opportunities for them to explore new ways of reading and writing that would positively impact their academic success and also translate into the workplace. An example they used was that of using online mind-mapping tools instead of pen and paper to brainstorm, develop ideas, or take notes while reading. While recent research indicates that the use of multiple modes supports students in developing both their writing skills and
multimodal skills (Smith & Dalton, 2016) and that it has the ability to expand student awareness of the interplay between different modes of semiotic resources for meaning construction (Yeh, 2018), findings in this study revealed that most of the students’ writing centered around traditional essays and summaries, and the use of other modes of representation were not evident in student writing. At the time of this study, Jacobs (2012), who explored how using multimodal texts as part of instruction can enhance student learning, reported that engaging students in multimodal academic literacies alongside traditional composition enabled students to develop and effectively construct academic arguments. She noted that the world is becoming increasingly multimodal, and instruction should be extended beyond traditional texts to include opportunities that engage students in multimodal academic literacies so that they do not only “read” but also create multimodal texts.

Research has established that meaning-making in the digital era is becoming more complex, with new technologies affording students opportunities to move across multiple modes to represent meaning in multiple ways, and it has also shown that written texts could be extended from print to encompass other forms of writing that combine different modes in order to convey meaning (Archer, 2010, The New London Group, 1996; Walsh, 2010). This realization underscores the importance for teachers to use pedagogies that support students in incorporating a range of digital technologies when designing and creating multimodal texts. According to Chandler-Olcott (2017), the changed nature of literacy within new communication contexts requires lecturers to redesign literacy pedagogies to incorporate a range of technologies into the traditional literacy practices in order to maintain balance between print-based and new literacies. She further emphasizes the importance of
ascertaining the extent to which lecturers are familiar with pedagogies that can support students’ use of digital technologies to create multimodal texts.

5.3.4 Online Communication and Collaboration Tools to Enhance Academic Learning

As new technologies emerge and develop, students and teachers are afforded ever-increasing ways to interact, share, collaborate, and provide feedback synchronously or asynchronously through online communication tools such as discussion forums, blogs, chat rooms, instant messaging, e-mail, and electronic portfolios, all of which have been commonly used well before and after my study to support learning and teaching in higher education by facilitating active learning (Heirdsfield, Walker, Tambyah, & Beutel, 2011; Khalil & Ebner, 2017; Meloni, 2010; Ntereke, 2010; Steel, 2007). These technological tools can be easily integrated into learning and teaching environments in order to engage students and enrich the quality of their experience through interactive activities which could extend discussions beyond classroom contexts (Kadagidze, 2014). One of these tools, online discussion forums, researchers have found can be effective in enhancing ESL/EFL students’ writing and communication skills (Akmal, 2017; Ritchie & Black, 2012). According to Biriyai and Emmah (2014), using online discussion forums can have the following benefits in learning and teaching:

- provide students with more opportunities for participation than face-to-face classroom discussion;
- afford shy students the ability to become more vocal through online discussion;
- provide students with sufficient time for reflection on course material;
- provide opportunities for smaller groups to be created within a larger class;
• provide feedback to teachers prior to and after class, enabling teachers to gauge students’ understanding and areas of focus.

While the use of such tools has been found to be effective in enhancing students’ learning, findings in this study indicated that, despite the availability of an array of these communication tools, lecturers teaching the COM courses had not yet explored their use for academic purposes. Students reported that they had used a few communication tools, such as the chat and mail tools on the LMSs, for receiving and submitting assignments as well as receiving announcements from the lecturer; other tools, however, remained unused. This lack of use could be related to lecturers’ claims that they did not have adequate training and support in the use of digital technologies for learning, resulting in their inability to confidently explore the potential of these tools to enhance student learning in the COM courses.

In an earlier literature review that looked at the benefits of using online forums in language learning, Kaur (2011) highlighted the importance of using online forums as a learning strategy for improving student writing and communication skills and concluded that online forums are crucial in enabling teachers to support students with the development of language skills. Similarly, Miyazoea and Anderson’s (2012) investigation of EFL students’ writing proficiencies using three online writing tools—discussion forums, blogs, and wikis—in an EFL blended (i.e., partially face-to-face and partially online) course showed the different utilities and skills associated with the different purposes of each online writing tool. They concluded that balancing the use of tools such as forums for discussions, blogs for reflection, and wikis for collaboration may eventually facilitate students’ language acquisition. These findings suggest that lecturers teaching the COM courses could benefit
from attaching greater importance to the use of communication tools in order for students to develop the literacies needed for academic and professional contexts.

With the emergence of social networking sites (SNSs), students all over the world now spend much of their time on them, and researchers have become interested in the use of social media and the potential these tools might have in enhancing students’ learning in academic contexts. Over the past decade, researchers (e.g., Irwin et al., 2012; Kitchakarn, 2016; Meloni, 2010) have investigated the use and perceived benefits of using social media networks—such as Facebook and Twitter—as tools to enhance student learning. Studies have shown that the use of social media enhances students’ communication in academic contexts. Further, they have the potential to increase students’ participation and engagement in the classroom. Therefore, there is potential to inculcate, nurture, and encourage students to engage with this form of learning at the University of Botswana; findings from my study revealed that social media tools were not popularly used for the learning and teaching of the COM courses. However, there was an isolated case in one of the COM courses where students were asked to choose and use any social media to communicate during a group project. Most students chose to use Facebook, claiming that they were familiar with it since they used it in their social lives, although they also reported that their choice was based on the perception that it was cheaper to use for communication than other social networks.

Findings on students’ perceptions of the potential of Facebook to enhance their learning were positive. Students in this study perceived the use of Facebook to have afforded them opportunities to build friendships that enabled them to collaborate and assist each other during and after the project. Similar findings were reported in previous research (Blattner & Lomicka, 2012; Graham, 2014; McCarthy, 2010; Meisher-Tal, Kurt, & Pieterse, 2012),
where students’ use of Facebook for academic work resulted in increased collaboration and interactions and the building of networks and online communities where students could learn from and assist each other with academic work. Well before my study, Takayama and Wilson (2005) argued that fostering collaborative learning communities enhances students’ motivation and encourages them to reflect on their own learning as they integrate theory into practice. These observations were also highlighted by students in this study, who, as noted earlier, emphasized that interactions and the formation of new relationships on this online platform were not only confined to project work but went beyond the classroom and strengthened academic support in online communities.

Although students’ experiences with using social media networks to communicate and network were generally positive, findings indicated that, again, students encountered challenges such as inadequate, uneven, and unreliable access to computers and the Internet, which they perceived to have contributed to the limited participation and contribution to online group discussions by some of the group members, which ultimately led to the poor academic performance of their groups. Students also attributed their limited participation in online discussions to lecturers’ lack of online presence. While some students felt that lecturers’ online presence would have facilitated their learning, others felt that they would have been intimidated. Discussions on lecturers’ online presence bring to the fore the potential that technologies have to shift lecturer and student roles, where lecturers move from their role as “knowledge dispenser” to that of “guide,” weaning students off their reliance on lecturers and promoting student management of their own learning (McKnight et al., 2016). Therefore, lecturers need to rethink their roles in digital contexts and consider how best they can facilitate students’ learning in online environments in order to make learning more
meaningful and intellectually stimulating for all students (Tartari, 2015), an undertaking that might be most productively accomplished in conversation with their students. Students might also rethink their roles and consider how they can take more responsibility for their learning, becoming independent learners and acquiring skills for life-long learning (University of Botswana, 2008b).

5.4 Limitations of the Study

This study has limitations that readers should consider when examining the results. First, students’ conflicting time schedules did not allow me to meet with them during their small group meetings to observe whether students used technologies and, if so, which technologies and how they were used for academic work. Furthermore, some of the students selected for the focus group dropped out, which limited the data I was able to collect for the study.

Secondly, the aim of the study was to explore students’ use of digital technologies to enhance learning in the COM courses. Since the study was conducted in one semester, I had limited time for classroom observations, and students spent most of their class time doing their group project outside the physical classroom; therefore, I may not have seen some of the technologies that may have been used in some of the literacy events. In addition, I observed only two COM classes, which, again, limited the range of observations and conclusions that I could make about the use of digital technologies in the learning and teaching of the COM courses.

Furthermore, students’ response rate for the questionnaire was low; therefore, the results may not have been a true reflection of students’ access to and use of digital technologies to enhance academic work. Though some of the students’ responses during
interviews were used to triangulate the questionnaire and observation data, a more systematic approach could have been adopted for more informative results.

Finally, digital technologies are rapidly changing, and from the time this study was conducted, many changes may have taken place. With the emergence of newer technologies, students’ access to and use of technologies may have changed; hence, these results may not reflect what is currently happening in the research context.

5.5 Discussion of the Findings

Researchers are increasingly engaged in discussion about university students’ use of digital technologies. Some researchers have argued that students currently enrolled in universities have grown up using digital technologies, which means pedagogies and curriculum designs need to change to cater to their academic needs. However, other researchers (e.g., Barnard & Van der Merwe, 2015; Brown & Czerniewicz, 2010; Corrin et al., 2010; Kimani et al., 2013) have debunked these assumptions, arguing that these generalizations are not based on empirical evidence and that students’ use of digital technologies is not only based on age but on an array of factors such as interest and socio-economic status. The findings of this study indicate that the considerable variation in the frequency and patterns of students’ use of digital technologies for academic learning was attributed to, for example, students’ inadequate access to or uneven distribution of resources on and off campus; slow and unreliable to non-existent access to the Internet; and students’ low skill levels in the use of these various technologies. These findings corroborate arguments made by researchers about an array of factors that could explain variation in students’ use of digital technologies.
As new technologies rapidly appear, what it means to be literate continuously changes. For students to be considered literate, they are required to possess digital literacies that enable them to participate and make meaning within academic contexts—meaning that is valued by the cultures, traditions, and academic disciplines with which students are associated. As students participate in academic disciplines, they learn specific ways of making as well as contesting meaning (Henderson & Hirst, 2007; Leu et al., 2004). Being cognizant of students’ diverse life pathways provides lecturers with new opportunities to engage students in literacy practices afforded by digital technologies. Nearly a decade ago, Roswell and Walsh (2011) argued that, in the “digital, media-driven, globalized world, educators are faced with the challenge of mediating traditional notions of what it means to be literate with new and ever-emerging skills and interests in technology and digital media” (p. 53).

Extensive research over nearly two decades has been conducted on students’ use of the Internet and other digital tools for learning. Research within this burgeoning area has focused on areas such as the multiplicity of information resources, continuous challenges students are faced with as they learn to effectively identify and access quality information, and the strategies that students use to search for and evaluate information for use in their academic work (Boger et al., 2015; Coiro, 2011, 2012; Fallon & Breen, 2005; Henry, 2005; Joo & Choi, 2015; Kiili, Laurinen, & Marttunen, 2008; Leu et al., 2004; Mutula, 2008; Purdy, 2012). In this study, data from interviews with students and librarians seemed to indicate that, while students relied heavily on the Internet—specifically Google and Wikipedia—as opposed to recommended online library databases for information, their
online information search skills were low, which was attributed to inadequate practice during instruction.

The results point to the key role that librarians can play in enhancing student development of the information literacies required to navigate the increasingly complex and diverse information in digital environments; that is, they can create appropriate learning opportunities and contexts in which students can develop skills that would allow them to effectively find, evaluate, and use information. While the role of the librarian is considered critical in ensuring that students develop the required information literacies for academic success, in this study, access to resources such as computers was highlighted as one of the challenges accounting for limited information literacy instruction. Some researchers (Baroa & Keboh, 2012; Kgosiemang, 2016) have argued that, in Africa, including developing contexts like Botswana, one of the challenges that hinders librarians from effectively teaching information literacy courses is inadequate access to computers and other digital facilities. Librarians are considered pivotal in ensuring that students will develop literacies that will enable them to fully participate in 21st-century life—in workplaces and in personal contexts—and become self-directed, life-long, and critical learners who assume greater control over their own learning (Mahwasane, 2017; Yevelson-Shorsher & Bronstein, 2018). Thus, supporting librarians with resources that they can use for effective learning and teaching is imperative.

While findings in the study seemed to indicate that the University of Botswana had invested in an array of digital technologies for learning and teaching, it was interesting to note that the use of digital technologies in the learning and teaching of the COM course by both students and lecturers was minimal. Among the challenges that were highlighted were
inadequate access to computers and the Internet, lack of lecturer motivation to use technology in their teaching, inadequate professional development for the effective design and use of student-centered online course materials, and the motivation and effective engagement of students in the learning and teaching process. Although researchers perceive that digital technologies promote student-centered learning environments and ensure that students develop skills that are required for independence, self-direction, and life-long learning (Aguti, Walters, & Wills, 2014; Ng & Lai, 2012; Thiele, Mai, & Post, 2014), most of the lecturers in this study mostly relied on lecture-based instruction and engaged students through question-and-answer sessions—strategies that are teacher centred. The University of Botswana introduced e-learning in 2001, and, despite encouragement from the university for lecturers to integrate digital technologies in learning and teaching, at the time of this study, there was little evidence that these technologies were used effectively to enhance learning in the COM course. According to Nicholson and Galguera (2013), although the use of the Internet and other digital technologies is considered essential for successful engagement in education and other facets of students’ lives, some traditional or conservative educational practices in academia have led to slow growth and integration of new literacies and digital technologies in higher education. Further, Nicholson and Galguera note that, because students are widely divergent in their skills in using the Internet and other digital tools, preparing them to become proficient 21st-century learners is even more challenging. However, findings in this study indicate that, although there was limited integration of digital technologies in the learning and teaching of the COM course, students reported interest in seeing more integration of digital technologies in their courses, noting the benefits of acquiring digital literacies for their academic and professional lives.
Conceptions of New Literacy Studies are based on an understanding that literacy is more than the ability to read and write. Reading and writing are about meaning-making and, therefore, cannot be separated from the social and cultural contexts within which they are constructed (Lankshear & Knobel, 2008; Street, 1995). Pahl and Rowsell (2005) contend that, in a digitally mediated culture, it is necessary to go beyond reading and writing in the traditional sense and start considering the various multimodal communication landscapes in which people live. Therefore, contemporary reading and writing of texts incorporate a variety of modes, such as words, images, and sounds, to create meaning (Cope & Kalantzis, 2009; Hull & Moje, 2012; Jacobs, 2012; Kress, 2003; Lankshear & Knobel, 2007). This incorporation has since expanded ways of making meaning by widening the concept of text from written or printed work to modes other than the verbal.

Integrating digital technologies in order to enhance students’ academic literacies in higher-education contexts is critical for developing the digital literacies that students need for reading, writing, and communication. However, findings in this study have indicated that students’ learning in the COM course was dominated by reading and writing traditional texts, such as essays and summaries, which seemed to contrast with multimodal texts students engaged with outside the academic learning environment. Integrating multimodal texts in learning and teaching helps lecturers not to privilege printed/written texts and provides students with opportunities to learn and use a variety of communicative modes for construction and representation of knowledge. Educators have explored the use of multimodal literacies as tools for student engagement in the learning process. Some of these ways are, among others: the use of electronic/digital posters (Aduradola & Akeredolu-Ale, 2013; Ahmad, 2019; Conteh, 2018; Cook & Fenn, 2013), which have been found to be
attractive and innovative tools that promote student engagement in the learning process; video and audio recordings (Miller, 2007; Toohey, Dagenais, & Schulze, 2012; Yeh, 2018); and blogs/vlogs (i.e., weblogs and video logs, respectively; La Caze, 2017; Tanti, 2012).

Researchers have observed that the use of multimodal literacies have nurtured and expanded student awareness of the interplay between different modes of semiotic resources for meaning construction as well as enhanced their engagement and furthered their desire to produce writing that incorporates different modes. La Caze (2017) found that, for some students, blogging linked them to past experiences of creating texts and sharing media and, for other students, it provided them with enough knowledge, understanding, and skill to inspire them to be future publishers of meaningful text. This observation is in line with the literacy-as-social-practice perspective that literacy is not simply knowing how to read and write a particular script but rather applying this knowledge for specific purposes in specific contexts of use (Barton, 1994). Integration of multimodal texts brings to light complexities in the process of knowledge construction and learning, benefitting 21st-century readers and writers who are expected to create, critique, analyze, and evaluate multimedia texts (Cook & Kirchoff, 2017).

In recent years, Web 2.0 technologies have enjoyed expansive growth which can be partially attributed to increased access to mobile devices and Internet connectivity. Research has highlighted the potential of the use of devices to enhance student learning, which has necessitated explorations of how mobile devices and applications such as WhatsApp, Facebook, and Twitter—commonly used by students as communication tools—can be employed in learning and teaching. These new and emerging technologies have been perceived to accord students benefits and opportunities with regard to their learning: the
promotion of interactivity, collaboration, and community with peers; motivation; support for active engagement with subject matter beyond the classroom; and the co-construction of knowledge (Montrieux, Vanderlinde, Schellens, & De Marex, 2015; Nicholson & Galguera, 2013). Although the benefits of using mobile devices are acknowledged by researchers elsewhere, a recent search for studies that focused on the use of these digital technologies in secondary- and higher-education contexts in Botswana revealed that research in this area is still in its infancy. Topics in this small body of research include: successes and challenges of using mobile devices in secondary schools (Mafa & Govender, 2017; Nleya & Mokgoare, 2014), University of Botswana students’ use of Facebook (Diraditsile & Samakabadi, 2018; Magogwe & Ntereke, 2013), student attitudes toward the use of WhatsApp (Magogwe & Jaiyeoba, 2019), and the relationship between students’ use of online social networking and their academic performance (Shonhe & Jain, 2017; Tsholetso, Maunganidze & Faimau, 2017). Collectively, these studies indicated that mobile devices and applications such as Facebook and WhatsApp were useful tools for learning and teaching. The researchers observed that features found in mobile devices afforded students the use a variety of modes, such as text, sound, images as well as the opportunity to connect to the Internet for research anytime and anywhere. However, some of the challenges highlighted regarding the use of these devices included classroom disruption, cheating, bullying, and students’ lack of access to smart phones. The researchers suggested that institutional policies should be put in place to guide both educators and students on access to and use of social media for academic purposes. Furthermore, the researchers agreed that it is critical to consider robust professional development programmes to support educators in the integration of these new

Research highlights pedagogical implications for language teachers regarding the provision of opportunities for students to create multimodal artifacts in order to develop their multiliteracies. It is, therefore, increasingly essential for lecturers teaching the COM course at the University of Botswana to consider ways in which they can effectively integrate multimodal texts, in addition to word-based texts, into their classrooms in order to prepare students for the types of compositions they will likely encounter in their disciplinary learning at the university and in their social and professional lives (Balzotti, 2016; Dieterle & Vie, 2015). As a robust body of theory and research shows, developing student skills and knowledge associated with the range of digital literacies and creating environments where students can learn to participate and make meaning in various social and cultural contexts (Bury & Sheese, 2016; Crook, 2005; Lea, 2004; Wahi, O’Neill, & Chapman, 2012) would enable students to develop literacies required for life-long, self-directed, and critical learning in the interest of student autonomy (Barton, 2018; Jenkins et al., 2006; Lave & Wenger, 1991; The New London Group, 1996).

Digital technologies have brought complex changes to meaning-making and developing digitally literate students. Digital literacy for students involves developing the literacies they need to deal with the demands of changes to literacy resulting from rapidly changing digital technologies. Therefore, an understanding of pedagogies underpinning the effective use of digital technologies would empower educators to transform literacy curricula in their classrooms. Educators need to understand that, with the emergence of new technologies and their use by students in all facets of student life, it is necessary that digital
technologies are not simply used as “add-ons” but as core resources to develop students’ understandings and skills as critical thinkers and creators who can share their perspectives of the world and use their agency for positive change. It is also important to note that lecturers need to engage and be engaged with inevitable shifts in definitions of literacy and literacy education that will affect how they employ any resources, digital or otherwise. It is vital, then, that lecturer support be available to ensure faculty members are prepared to teach students in whatever century they find themselves. Thiele et al. (2014) argue that, although the use of technologies is perceived to enhance learning by making the classroom more active and student-centered, considerations such as learning objectives when choosing technologies, faculty and student comfort levels with technology, planning for distractions, and the overcoming of barriers to implementation must be taken into account if the integration of these technologies into learning and teaching is to be successful.

5.6 Theoretical and Practical Implications

This study focused on whether and, if so, how the use of digital technologies in the first-year Communication and Academic Literacy Skills (COM) course at the University of Botswana supports the development of students’ academic literacies. As mentioned earlier, the findings of this study will provide COM lecturers with a frame within which to conduct similar studies in the future, at the university or elsewhere. The findings may also be used during curriculum review to inform policy for the integration of digital technologies in the COM course.

This study is situated in the New Literacy Studies that represents a shift in perspective, emphasizing a broader understanding of literacy and literacy practices in varied social and cultural contexts. Although most COM lecturers do not consider the rich social
and cultural contexts of students’ out-of-school digital literacy practices, this perspective maintains that students’ out-of-school literacies inform what and how students learn at school. The key insights of this perspective are that student literacies are shaped by social and cultural practices; therefore, the literacy practices that students bring from outside the classroom cannot and should not be isolated from what they learn inside the classroom. As such, a broad understanding of first-year students’ literacies and how they may impact student learning in the COM course can contribute to designs for more supportive learning environments.

The findings of this study indicated that there was often uneven or limited use of digital technologies by both students and lecturers. An important implication for educators is, given that new technologies are rapidly emerging, educators themselves as well as students need to continuously develop new skills. Although some researchers have argued that today’s students are technologically savvy, other researchers have established that students need support in their use of particular technologies for academic work. Further, students learning in digital environments would benefit from learning to exploit literacy skills that go beyond traditional print. Students need to engage with multimodal texts so that they develop skills that will enable them to effectively communicate ideas and understandings to various audiences. This calls for lecturers to understand that developing a 21st-century learner requires a supplementation of traditional pedagogies with ones that integrate new and emerging technologies. For instance, students are already using mobile phones and social media as tools for communication outside class; lecturers can, then, establish what students are using and how, and then explore ways these practices can be integrated into learning and teaching. This approach requires that lecturers build on the array
of out-of-school digital literacies that students use to support their learning experiences in the COM course and at the university in general.

The university has a responsibility of ensuring that new and digital literacies are effectively implemented. Findings in this study have indicated that access to and use of computers is a challenge in the learning and teaching process for both students and lecturers. Despite the university’s investment in technology, the findings in this study show that students’ access to and use of computers remain uneven or limited due to theft and vandalism by the student community. It may be prudent for the university to explore alternate ways for students to have technology available for their learning. An alternative could be the “one laptop [or mobile device] per learner” approach—an initiative piloted in countries such as Malawi, South Africa, and Mauritius—that leaves responsibility for devices in students’ own hands. In Malawi, tablets that were used as the chosen mobile device were shown to have a positive effect on student access to course material in class despite challenges such as poor Wi-Fi connectivity on and off the university campus and student resistance to the idea of mobile devices and preference for traditional methods of teaching (Hubber et al., 2016; Lazarus, Sookrajh, & Satyapal, 2017; Montrieux et al., 2015). However, as with any emerging technology, pedagogical and technical support for faculty is necessary to facilitate both student and teacher understanding of the full potential of any device. This calls for the University of Botswana to create policy frameworks to guide students and lecturers in the use of these devices; the university would need to create, reform, and implement culturally, socially, and academically responsive policies that would address new and digital literacies skills for the benefit of learners developing literacies required for them to be successful academically, professionally, and socially.
5.7 Recommendations and Future Research

Educators and policy makers around the world are cognizant of the fact that the use of digital technologies is integral to learning and teaching. At the University of Botswana, the potential value of ICT in education is appreciated, hence the significant investments that have been made into the technological infrastructure for learning and teaching. However, the findings of the study indicate that there are still significant challenges—uneven or lack of access to and use of computers and poor and unreliable Internet connectivity, to name two. As noted earlier, some countries have invested in initiatives (e.g., “one laptop [or device] per learner”) that enable students not only to have access to their own device but to have an opportunity to bring their own devices for use during instruction. If the University of Botswana participates in such an initiative, or implements policies promoting the increased use of (students’ own) devices for teaching and learning, then it might consider making the provision of reliable and quick Internet a priority (as students may already have their own devices). The exploration of these initiatives and formulations of policy that provide guidance for their use would help to move Botswana forward in its ambitions to achieve goals such as those articulated in Vision 2016.

Although findings in this study provide indications that the University of Botswana provides professional development for the support of lecturers, including technical and pedagogical training for the integration of digital technologies in learning and teaching, one of the challenges identified was that lecturers still lacked the skills to leverage the potential of available digital technologies and the opportunities offered by their use for the enhancement of students’ learning. The gaps in the appropriate pedagogies for integrating these technologies require a supportive technological environment for lecturers. This
underscores the importance of the university not only providing adequate professional development for academic staff but also having a clear ICT policy on professional development and the integration of existing, new, and emerging digital technologies.

Digital technologies are rapidly changing, and, with students having increasing access to and use of technologies such as social-media networks and mobile learning, lecturers and policy makers need to rethink what literacies these students require in order to become employable and productive in the 21st century. It is, therefore, imperative to conduct research to establish students’ access to and use of new and emerging technologies and the ways in which these technologies impact students’ literacy practices. Further, research on effective pedagogical practices on the use of these technologies is also critical. Finally, the university needs to formulate context-rich policy and guide lecturers on the implementation of this policy with regard to the use of new and emerging technologies.

First-year students’ academic digital literacies are critical across disciplines; for this reason, collaborative research between the Communication and Study Skills Unit and other stakeholders—such as librarians, academic departments, and the Educational Technology Unit—has been crucial. Based on the findings in this study, future collaborations should focus on determining effective pedagogies for the integration of existing, new, and emerging digital technologies to enhance students’ digital literacies for academic learning.

Finally, multimodality is regarded as central to the development of students’ literacies in current digital environments. However, these different modes of representing knowledge have not been adopted in the learning and teaching of the COM course at the University of Botswana. Further research in this context and in similar contexts should be conducted to learn more about how students can use different modes to represent knowledge; research can
also reveal pedagogies that would support students in their sharing of identities and knowledge through modalities that are aligned with their approaches to meaning-making yet also valued by the communities in which they live.
References


Barnard, Z., & Van der Merwe, D. (2015). *Bridging the digital divide: Case study of the distribution of tablets to first years at the University of Johannesburg*. Paper presented at the meeting of Information Science and IT Education (InSITE), Tampa, FL.


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Appendices

Appendix A

Student Questionnaire

Dear Year-One Student,

You are part of an important study in which I am investigating the use of digital technologies in the *Communication and Academic Literacy Skills* course. Since you are one of the students who are using these digital technologies in the course, your contributions to this study will be valuable.

As you are aware that the communication-skills department is integrating digital technologies in the teaching and learning of the course, I would like to establish the extent to which digital technologies are integrated into the teaching and learning of the course and whether the integration is perceived to be effective.

I am conducting a survey on the integration of digital technologies. This survey should take about 5–10 minutes to complete.

Participation is voluntary, and responses will be kept anonymous. However, whenever one works with e-mail/the Internet, there is always a risk of compromising privacy, confidentiality, and/or anonymity. Despite this possibility, the risks to your physical, emotional, social, professional, and/or financial well-being are considered to be “less than minimal.”

Participation or non-participation will not impact your relationship with the University of Botswana. Submission of the completed survey will be interpreted as your informed consent to participate and that you affirm that you are at least 18 years of age.

If you have any questions or would like clarification any point, please ask either your lecturer or myself to address your concerns.

Thank you for your participation.
Section A: Personal Information

Please place a tick (√) next to the answer that best describes you.

1. Gender:
   Male ☐ Female ☐

2. How old are you? __________

3. a. Program of study (e.g., BA Social Work): ________________________
   b. Major/minor courses: ________________________________

4. Place of residence:
   On campus ☐ Off campus ☐

5. Do you have Internet in your place of residence?
   Yes ☐ No ☐

6. Do you access the Internet on campus?
   Yes ☐ No ☐
   If so, where? (You can indicate more than one.)
   Open-access computer labs [ ] Smart classrooms [ ] Library [ ] Other (Please specify.) [ ]

7. Indicate which of these digital technologies you use and the frequency with which you use them.

<table>
<thead>
<tr>
<th>Frequency of Use</th>
<th>Daily</th>
<th>Weekly</th>
<th>Fortnightly</th>
<th>Monthly</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile phone</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desktop computer</td>
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<td></td>
</tr>
<tr>
<td>Laptop computer</td>
<td></td>
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</tr>
<tr>
<td>Handheld computer</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Games console</td>
<td></td>
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</tr>
<tr>
<td>Portable game console</td>
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<tr>
<td>Digital camera</td>
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<tr>
<td>Video camera</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Portable media player</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

226
8. How would you rate your digital literacy skills for the technologies that you use?

<table>
<thead>
<tr>
<th>Level of Expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginner</td>
</tr>
<tr>
<td>Mobile phone</td>
</tr>
<tr>
<td>Desktop computer (e.g., PC, Mac)</td>
</tr>
<tr>
<td>Laptop computer</td>
</tr>
<tr>
<td>Handheld computer (e.g., iPad, iPhone, Blackberry)</td>
</tr>
<tr>
<td>Games console (e.g., Xbox, PlayStation, Nintendo)</td>
</tr>
<tr>
<td>Portable game console (e.g., PSP)</td>
</tr>
<tr>
<td>Digital camera</td>
</tr>
<tr>
<td>Video camera</td>
</tr>
<tr>
<td>Portable media player (e.g., MP3 player, iPod)</td>
</tr>
</tbody>
</table>

Section B

9. Please indicate which electronic tools and software you use in the Communication and Academic Literacy Skills course and the frequency with which you use them.

<table>
<thead>
<tr>
<th>Frequency of Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
</tr>
<tr>
<td>Course website</td>
</tr>
<tr>
<td>Online discussion groups</td>
</tr>
<tr>
<td>Video conferencing</td>
</tr>
<tr>
<td>Online assessments (e.g., multiple-choice quizzes)</td>
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<tr>
<td>Presentation tools (e.g., PowerPoint slides)</td>
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<tr>
<td>Word documents</td>
</tr>
<tr>
<td>Microsoft Excel</td>
</tr>
<tr>
<td>Calendar</td>
</tr>
<tr>
<td>Digital camera</td>
</tr>
<tr>
<td>Handheld computer</td>
</tr>
<tr>
<td>Mobile phone</td>
</tr>
<tr>
<td>Internet websites</td>
</tr>
<tr>
<td>Google / Google Scholar</td>
</tr>
<tr>
<td>Wikipedia</td>
</tr>
<tr>
<td>Weblog or blog</td>
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<tr>
<td>YouTube</td>
</tr>
<tr>
<td>Text messaging</td>
</tr>
<tr>
<td>Other (Please specify.)</td>
</tr>
</tbody>
</table>
Section C: Use of Technology for Your Own Learning

This section concerns your use of technology for the purpose of learning or communication in relation to your course (e.g., to talk to other students about coursework), but NOT tools provided by your university for the course.

10. Please indicate which electronic tools NOT provided by the University you use to help you with your studies (e.g. this may be other software or your own tools and devices.)

<table>
<thead>
<tr>
<th>Frequency of Use</th>
<th>Daily</th>
<th>Weekly</th>
<th>Fortnightly</th>
<th>Monthly</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music (e.g., iTunes, MP3s)</td>
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<td></td>
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<tr>
<td>Photo uploading and sharing (e.g., Flicker)</td>
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<tr>
<td>Video uploading and sharing (e.g., YouTube)</td>
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<tr>
<td>Blogging</td>
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<tr>
<td>Social networking (e.g., Facebook)</td>
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<tr>
<td>Discussion groups</td>
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<tr>
<td>Chat rooms</td>
<td></td>
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<tr>
<td>Wikis (e.g., Wikipedia)</td>
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<tr>
<td>Internet gaming</td>
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<tr>
<td>Virtual worlds</td>
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<td></td>
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<tr>
<td>Text Messaging</td>
<td></td>
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<tr>
<td>Other (Please specify.)</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Section D: Digital Literacies Support

11. What support do you require in order to use digital technologies in the Communication and Academic Literacy Skills course?

12. Do you think digital technologies should be used to support academic literacies in higher education?
   Yes ☐   No ☐

   Explain your answer: ___________________________________________________________
                        ___________________________________________________________

13. If you have any other comments about using digital technologies to support academic literacies, please feel free to share them with me in the space below.

   Thank you for taking the time to complete this questionnaire.
Appendix B

Interview Guides

A. Interview Guide for Focal Students

1. You indicated in the questionnaire that you use these digital technologies regularly.
   a. What do you use them for?
   b. What kind of software or Internet sites do you use them to access?
2. You indicated in the questionnaire that you do not use these digital technologies.
   a. Can you share why you do not use digital technologies?
3. Use of digital technologies in your course:
   In your questionnaire you mentioned the electronic tools that you use for the course.
   a. What electronic tools does your lecturer use to make course content available to you?
   b. How useful are these tools to you? Why?
   c. Are there other tools or software you would like to use in your course? Why?
4. Use of your digital technologies for your learning:
   a. What other tools do you use to help you with your studies? Can you give me examples of how you use them in relation to your learning/coursework?
   b. Do you use any tools to communicate with other students outside class? If so, which ones? Can you give me examples?
5. Other uses of digital technologies/software:
   a. What tools/software do you use in your own time (i.e., not for your studies, e.g., MySpace, Facebook)? How often do you use it/them? Do you have your own profile? Who do you talk to on MySpace/Facebook? Do you talk to any other students, etc.?
   b. e.g., blogs: Do you have your own blog? What do you write about in your blog?
   c. What do you like about the software (e.g., MySpace, Facebook, blogs)?
   d. Would you like to use these software (e.g., MySpace, Facebook, blogs) in your course?
6. Would you like to use more technology/software on your course?
7. Would you like to use any tools or software environments as part of your course? Which ones in particular? Why/Why not?

Thank you for taking time to answer my questions.
B. Individual Semi-Structured Interviews with Lecturers

1. Experience in using ICT in teaching and learning:
   a. The types of digital technologies used and the nature of use.
   b. Why did you choose to use these digital technologies/tools? What influenced your decision?
   c. What digital technologies would you like to use that you don’t currently use? Why don’t you use these currently?

2. Do you see your students using any tools themselves (e.g., around campus, in the library) or know about tools they use off campus? If so, have you considered tapping into this use for their learning / your teaching? Why?
   a. What areas of teaching and learning do you think could benefit from the use of tools that currently aren’t used?

3. How did you learn to use these digital technologies yourself? What influenced this? Did you get support? Learn yourself?

4. What are your views on the educational value of digital technologies?

5. What do you perceive as the role of the subject librarian in supporting your course instruction? How much support, if any, do you get from the subject librarian?

6. What library resources do you and your students use for the teaching and learning of this course?
   a. When your students are doing research, do you require them to use print, online, or electronic resources? Why?
   b. Do you currently use the library electronic resources as part of your instruction? Why?

7. Are there any particular projects/initiatives you’re involved with that may be of interest to me?

8. Could I get back to you to clarify points or ask one or two extra questions? E-mail? Phone?

Thank you for taking time to answer my questions.
C. Individual Semi-Structured Interviews with Librarians
   1. Does the library carry resources (e.g., print, audio-visual, and electronic media) in the subject area(s) that you support? What types do you see first-year students mostly using? Why do you think they use the type(s) that they use? Which ones do you normally recommend that they should use?
   2. What support do you give to first-year students when using the library? At what point during the term do you do that? Do first-year students contact you if they need assistance with the resources?
   3. Is there collaboration between you and the lecturers teaching the Communication and Academic Literacy Skills course? Do you think collaboration between the two of you is important? Why?

   Thank you for taking time to answer my questions.
D. Individual semi structured interviews with the Educational Technology staff

1. General views and experiences of using technology in teaching & learning:
   What types of digital technologies are used in the course(s) that you support (specifically, the Communication and Academic Literacy Skills course)?
   a. Do you know why these were chosen? Were you involved in those decisions?
   b. Do you support any tools and technologies that aren’t standard issue across the institution or department/faculty/school?
   c. How do you find that? What issues are there (e.g., problems, solutions)?

2. Are there any challenges to using digital technologies in teaching and learning of the Communication and Academic Literacy Skills course? Opportunities?
   a. What type of requests do you get for help (concerning the use of digital technologies in the Communication and Academic Literacy Skills course)?

3. What sort of digital technologies do you notice first-year students using?
   a. —in class, outside the classroom, around campus, in the corridor, off campus, any others than those given by the tutors?
   b. Do first-year students talk to you about digital technologies (i.e., what they may be using outside campus for other things)?

4. What type of digital technologies do you think could be used but perhaps aren’t being used? Do you know why this may be?

5. What support structures are put in place by the institution to support lecturers and students in the use of digital technologies for teaching and learning? How effective are these structures?

6. Are there any particular projects/initiatives you’re involved in that may be of interest to me that we haven’t mentioned?

7. Could we get back to you to clarify points or ask one or two extra questions? E-mail? Phone?

Thank you for taking time to answer my questions.
E. Semi-Structured Interviews with the Deputy Director, Communication and Study Skills Unit (CSSU)

1. General views and experiences of using technology in teaching & learning:
   What digital technologies are used in the teaching and learning of courses in the Communication and Study Skills Unit?
   a. Has it been easy to use these digital technologies in the teaching and learning of the courses? What have been the challenges? Opportunities?

2. What digital technologies would you like to see being used in the teaching and learning of the Communication and Academic Literacy Skills course and other courses in the unit and why? Why are these not currently used?

3. Are you aware of first-year students using other digital technologies, such as phones, iPods, blogs, and YouTube outside of class—around the corridors, on or off campus?
   a. Do you see any of these as having educational value? Why?

4. Do lecturers teaching the various courses within the unit come to you with ideas for using digital technologies? Are you able to help? If not, why not?

5. What support structures are put in place by the institution to support lecturers and students in the use of digital technologies for teaching and learning? How effective are these structures?

6. Are there any particular projects/initiatives you’re involved in that may be of interest to me?

7. Could we get back to you to clarify points or ask one or two extra questions? E-mail? Phone?

Thank you for taking time to answer my questions.
Appendix C

Consent Letter

THE UNIVERSITY OF BRITISH COLUMBIA

Department of Language and Literacy Education
2/25 Main Mall
Vancouver, B.C. Canada V6T 1Z4
Tel: 904-822-5788
Fax: 904-822-3154

August 16, 2013

CONSENT FORM

Integrating Digital Literacies into the Year 1 Communications and Academic Literacy Skills Course at the University of Botswana

STUDY TEAM

Principal Investigators: Theresa Rogers, Language and Literacy Education, UBC
Marlene Asselin, Language and Literacy Education, UBC

Co-Investigator: Brigid Goitse Conteh, PhD candidate
Language and Literacy Education, UBC
Botswana telephone number: 7222 8182

SPONSOR: University of Botswana

PURPOSE OF STUDY
We are interested in finding out what and how year-one students use ICTs (information and communications technologies) in the teaching and learning of the Communication and Academic Literacy Skills course. We want to know whether, and if so how, the integration of ICTs into the year-one Communication and Academic Literacy Skills course at the University of Botswana supports the development of students’ academic literacies in their specific disciplines.

IF YOU CONSENT TO PARTICIPATE IN THE STUDY
We will conduct one 60-minute interview on your views about the value of using ICTs to support students’ academic literacies for their specific disciplines, the support the unit gets from the institution with regard to the use of ICTs, and what the constraints and affordances of using ICTs are in the teaching and learning of courses within the Communication and Study Skills Unit (CSSU). We will digitally audio-record the interviews. The interview will be scheduled at a place and time that is convenient for you.
STUDY RESULTS
The results of this study will be used for my, Brigid’s, doctoral studies. We will also share
the results of the study with the University of Botswana community through seminars and
conferences, and I will submit a copy of the research report to the University of Botswana
research office to enable other researchers to have access to it.

COULD THIS STUDY BE HARMFUL TO YOU?
We do not think there is anything in this study that could harm you or compromise your
position.

COULD THIS STUDY HELP YOU?
We believe your participation will be beneficial. You will have an opportunity to reflect on
your experiences and perceptions on the use of ICTs for academic purposes.

CONFIDENTIALITY
We will maintain your privacy in several ways. In all reports, we will not give your real
name but will, instead, use pseudonyms. We will not share your image unless you give us
permission at the end of this letter. All of the information we collect will be kept on a
password-protected computer.

WHO YOU CAN CONTACT FOR INFORMATION ABOUT THIS STUDY
If you have questions or concerns about this study, please contact Brigid Conteh at the
telephone number provided above.

WHO YOU CAN CONTACT FOR CONCERNS
If you have any concerns about your rights as a research subject and/or your experi-
ences while participating in this study, you may contact the Research Subject Information Line in
the UBC Office of Research Services at 001.604.822.8598 or, if you are long distance, via e-
mail, at RSIL@ors.ubc.ca, or at (toll-free) 011.1.877.822.8598.

CONSENT AND SIGNATURE FOR PARTICIPANT
Taking part in this study is entirely up to you. You have the right to refuse to participate in
this study. If you decide to take part, you may choose to withdraw from the study at any
time without giving reasons.

Your signature below indicates that you consent to participate in this study

<table>
<thead>
<tr>
<th>Participant Signature</th>
<th>Date</th>
</tr>
</thead>
</table>

| Printed Name of Participant |  |
Appendix D

Sample University of Botswana E-Learning Workshop Schedule

WORKSHOP SERIES IN eLEARNING
EDUCATIONAL TECHNOLOGY UNIT, CENTRE FOR ACADEMIC DEVELOPMENT

FEBRUARY CAD eLEARNING WORKSHOP SCHEDULE: SEM2 2019

Dear Colleagues,
The Educational Technology Unit under the Centre for Academic Development will be offering the CAD Introductory eLearning workshops; Semester 2 2018/2019 - February

The eLearning workshops have been designed to cater for the needs of lecturers embarking on eLearning at the University of Botswana. The contents of these workshops have been carefully selected to guide, and prepare you for planning, developing and implementing eLearning.

To book for a workshop, please click the REGISTER link next to the workshop you want to register for or phone 2748, 2798, 2210 or 5480. Please refer to the schedule below.

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Course</th>
<th>Workshop Title</th>
<th>Facilitator</th>
<th>Registration Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>19 02 19</td>
<td>0900 -</td>
<td>WS01 Introduction to eLearning</td>
<td>P Y Thomas</td>
<td>REGISTER</td>
</tr>
<tr>
<td>2</td>
<td>20 02 19</td>
<td>0900 -</td>
<td>WS02 Instructional Design for eLearning</td>
<td>M Motshegwe</td>
<td>REGISTER</td>
</tr>
<tr>
<td>3</td>
<td>21 02 19</td>
<td>0900 -</td>
<td>WS03a Introduction to Moodle</td>
<td>S Mafote</td>
<td>REGISTER</td>
</tr>
<tr>
<td>4</td>
<td>22 02 19</td>
<td>0900 -</td>
<td>WS03b Moodle Communication Tools</td>
<td>C Busang</td>
<td>REGISTER</td>
</tr>
<tr>
<td>5</td>
<td>25 02 19</td>
<td>0900 -</td>
<td>WS03c Moodle Assessment Tools</td>
<td>S Mafote</td>
<td>REGISTER</td>
</tr>
<tr>
<td>6</td>
<td>26 02 19</td>
<td>0900 -</td>
<td>WS04d PlagScan - Moodle plagiarism detection software</td>
<td>P Y Thomas</td>
<td>REGISTER</td>
</tr>
<tr>
<td>7</td>
<td>27 02 19</td>
<td>0900 -</td>
<td>WS05 Effective Use of Multimedia Graphics</td>
<td>B Mabophiwa</td>
<td>REGISTER</td>
</tr>
<tr>
<td>8</td>
<td>28 02 19</td>
<td>0900 -</td>
<td>WS05 Teaching in the Technology Enhanced Classroom</td>
<td>L Kgope</td>
<td>REGISTER</td>
</tr>
</tbody>
</table>

IMPORTANT: Completion of the following workshops will qualify the participant to receive an attendance certificate:

List of Workshops
1. WS 01
2. WS 02
3. WS 03a, WS 03b, WS 03c and WS 03d
4. WS 05
5. WS 06

www.ubw