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How International Students From African Countries Use Digital Text

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HOW INTERNATIONAL STUDENTS FROM AFRICAN COUNTIES USE DIGITAL TEXT

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Dedication

I dedicate this thesis God Almighty for his constant love and care for me all the days of my life,

and for making me attain this milestone. All Glory to God! I also dedicate this thesis to my

parents Henry Kwabena Kyeremeh and Grace Kyeremeh for their constant and undying support

and prayers.

HOW INTERNATIONAL STUDENTS FROM AFRICAN COUNTIES USE DIGITAL TEXT

by

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THESIS

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Abstract

This thesis critically examines how international students from African countries use digital text across disciplines in a four-year university in the United States. The goal of this study is to explore ways in which international students' challenges with digital text can be alleviated. Critical Consciousness Theory and Critical race theories are used as theoretical framework which foster a better understanding of international students' previous experience with digital text and the challenges faced when using digital text. Data collected through interviews indicate that international students' struggles with digital text are much more complex than the average student because they have little to no experience with digital text, lack of skills, training and institutional support. This research emphasizes the need to take international students into consideration during the planning of syllables and the selection of content for pedagogy. It also stresses the need for institutions to take into account international students when planning orientations and training programs that teach how to effectively use technology in education. Finally, recommendations are given in the study to help international students excel in the way that they use digital text.

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Chapter 1: Introduction

The influx of international students to the United States of America to pursue undergraduate and graduate programs has increased significantly in the 21st century. This might be attributed to the fact that the educational system of the United States is revered internationally given the United States' global influence. Students also have access to funding in the form of grants, scholarships, and the opportunity to work while studying which has made studying in the United States a preferred choice for most international students, especially those from developing countries. According to U.S News (2017), during 2016-2017 school year, there were 1,078,822 international students in the United States. Similarly, the Migration Policy Institute indicated that, in March 2018, an estimated 1.2 million F-1 and M-1 students were registered and enrolled in about 8000 SEVIS-certified schools across the United States. The United States government has supported programs that use technology and as such have used incentives in the form of monies to accelerate the growth of online programs and programs that involve the use of technology. (Patcha, 2018). According to Quality Education Data (2004), the United States government spent $7.87 billion and over on technological equipment for the 2003-2004 academic year (in Hew &Brush, 2007).

The proliferation of e-books, online applications, and devices such as Kindles and iPads, the recommendations of professors to use e-books, and the relatively low cost of e-books in comparison to printed books have increased the use of technology now in academia more than ever. Face to face teaching strategies are often facilitated by institutionally supported classroom technologies (Crumley, 2010) such as Blackboard, Canvas, Vista, and WebCT, which West& Graham (2007) referred to as Course Management Systems (CMS). These Course Management Systems aid students to turn in assignments, view grades, and register for classes. Professors also use these Course Management Systems to lecture students online through video conferencing,

assign grades,, and provide feedback to students. This allows both professors and students to do things conveniently. According to (Wells & Blincoe, 2015), face-to-face learning is now being amalgamated with online-learning and this is referred to as blended learning.

Online teaching and learning became popular when the use of the internet became widespread in the 2000s. Among the reasons cited is that it is very flexible and allows students to have control of their own schedules (BusinessWest, 2018). It has offered students who did not have the capacity to be physically present in the classroom an opportunity to still get an education. The use of e-books and online learning also gained grounds because of the conservation of the environment and the decision of the environmentalists to go green and reduce the number of trees that are being used to produce paper. Hutsko (2009) argues that e-readers could have a huge impact in improving the sustainability and environmental impact on the publishing industry. In addition, the U.S. book and newspaper industries together were responsible for the felling of 125 million trees. This means that by reading or purchasing e-books could potentially save both paper and trees, thereby conserving the environment. For this reason and many others, the widespread use of digital texts and technology in academe is increasing. The development of technology at such high rates in academic institutions affects students and teachers in varying ways because students and teachers adopt new teaching and learning methods (Patcha, 2018). Moreover, Patcha (2018) also states that students and teachers are faced with the challenge to be competent in communication and information relayed through various technologies and platforms.

Travelling to the United States for my graduate degree has been a very eye-opening experience for me. There is, in my opinion, a vast difference in the educational system of the United States and Ghana, where I was born and raised. In African countries like Ghana, there is not really a choice when it comes to print versus digital texts. The one that is most accessible is

print and that is the one that is most widely used. Digital texts in the form of e-books and devices for reading such as Kindles are not at all popular. In cases where digital texts are popular, there are some difficulties such as the lack of internet that make print a better alternative. The situation is not the same in the United States. The use of e-books and other online applications is mostly the norm or more so encouraged. Electronic books are also a much cheaper alternative to print and can be accessed everywhere due to easy accessibility of internet. In my own experience, I found that I grasp or assimilate information better when I read print instead of digital, which I believe is due to my educational background in Ghana where print is the norm. Throughout my education from elementary school to college, I used printed text only. Becoming a graduate student in the U.S. where digital texts is more frequent was a hard change for me. I believe that many others like me, who are not familiar with digital texts have also experienced the shock of having to get used to digital texts in all its forms as it is very well immersed in the curricula of higher education in the U.S.

1.1 RESEARCH PROBLEM

Universities and colleges in the United States are very privileged to have enrolled students from a wide range of economic, social, economic and political contexts. With this diversity, comes an enormous need to learn about all as most universities and colleges seem to pride themselves on their promotion of a global focus as integral to their teaching and research (Ryan & Viete, 2009). Despite the advertisements of universities promoting a holistic educational experience for all, international students still encounter an environment where their knowledge is categorized as lacking, and their learning is supposed to conform to the often-unchallengeable rules and patterns laid by local academies (Ryan & Viete, 2009 citing Ryan, 2005).

It has already been established that technology in academia is very advantageous to both students and to instructors. Digital texts, with various advantages, have helped bridge the communication gap between instructors and students. However, to successfully facilitate classroom instructions using technology, students are expected to be well versed in the use of these classroom technologies and very often, most students are not adequately prepared for this task (Patcha, 2018). International students have to engage in the use of technology in pedagogy and excel at it even if they have little or no experience in the use of digital texts. International students who are often treated as a homogenous group differ on various levels. One very obvious difference in international students is the country of origin. Scholars suggest that the adjustment of an international student in the host country has a lot to do with the home country of the student (Warren & Constantine, 2007). For example, an international student from Australia studying in the United States and international student from India may have very different experiences when it comes to adjusting to the change of moving and getting a degree outside of one's country. Any discussions of the challenges confronting international students must therefore take into account the heterogeneity of international students (Ryan & Viete, 2009). This means that since international students, just like domestic students, differ in terms of economic, social, cultural, and linguistic backgrounds, it is quite impossible to classify and characterize them. Because of this, the challenges international students encounter is quite hard to identify and resolve as they are most often multi-faceted.

Researchers, over the years, have concerned themselves with pitting print against digital and finding out which is better and most useful in academia (Singer & Alexander, 2016; Ross et. al., 2017; Liu, 2005; Jeong, 2012). Other scholars have also conducted research that has measured reading comprehension and recall of students and people in general when using print and digital

texts (Mangen et. al., 2013, Jabr, 2013; Sakstein et. al., 2015). Research has also indicated that international students are faced with a number of challenges in the form of material, academic, sociocultural and psychological adjustment in the country of stay (Tseng & Newton, 2002) and how international students from all over the world deal with issues of cultural shock (Urban & Orbe, 2007; Adegbola et. al., 2018). Despite this knowledge, there has been minimal research that investigates how international students cope with these challenges, especially in the US which has become a top destination for most international students. Arthur (2000) posits that the United States higher education system is the first point of contact for most Africans who migrate to pursue undergraduate or graduate degrees. Despite the growing student enrollment population of Africans in U.S. universities or colleges, little or no research has focused on examining the educational experiences of African students in host countries especially the United States. Furthermore, there are, however, few studies on how international students from African countries adjust to the challenges that come with using digital textss. Against this background and my experiences as an African student pursuing a graduate degree in the United States, this study will seek to examine how international students from African countries adjust to the persistent use of e-books and other electronic- based resources while pursuing further studies in U.S. institutions of higher education. The study will also attend to the expressive communicative practices used by international students from Africa when navigating print and digital texts.

1.2 PURPOSE OF THE STUDY

Using a critical and cultural approach, my work uses the Paolo Freire's critical consciousness theory and critical race theory as theoretical framework to explore the challenges that international students from African countries face when exposed to the use of digital texts in pedagogy within a large public university in Texas. This study will concentrate on the African

international students' experiences with digital texts and their expressive communicative practices used when using digital texts. Drawing from my own experience as an international student from an African country where technology was not really used in academia, I believe that other international students from African countries also experience these same challenges because they are from countries that have little to no use of technology in their classrooms.

1.3 SIGNIFICANCE OF THE STUDY

The findings of this study will give insight into the challenges that international students from African countries face in American universities when exposed to digital texts. This knowledge is both beneficial to international students and professors who have these students in their classrooms. For professors, this study illustrates international students' struggles with digital texts and what measures can be put in place to make things easier for international students. Since the number of international students in the United States is always increasing, professors need to start considering international students when selecting course materials for their classes. Professors usually tend to overlook students with challenges when using digital texts or assume that students know how to use digital texts because they are mostly used to dealing with students who are very well versed in the use of digital texts. Shedding light on this further emphasizes the need to create training programs for students especially international students on how to use digital texts for optimal learning. The training programs would help prepare international students for their journey as students in the United States and even beyond college and through their jobs.

Chapter 2: Literature Review

This section begins by elaborating on the prevalent use of digital texts in the United States and then juxtaposing it with the use of digital texts in African countries. The ongoing debate between printed text and digital texts is also highlighted and relevant research reviewed as this highlights the futility of the debate, and the answer to which is better is based on a number of factors such as experience, preference and availability.

2.1 THE USE OF DIGITAL TEXTS IN THE UNITED STATES

In educational institutions worldwide, online learning is being adopted as a corresponding mode of educational delivery to the traditional face to face delivery that has existed for years now and is being proclaimed as the next democratizing force in higher education (Jones, 1997). In situations where face to face delivery is not available or inappropriate, online learning becomes the only option. For example, in the COVID-19 crisis in 2019 and 2020, most educational institutions switched to online learning for the safety and to avoid the spread of the disease. Furthermore, technology enabled instruction, especially online learning has emerged as the most feasible and economically sound means of expanding access to quality higher education (Asunka, 2008). Various countries have tried to incorporate online education in their academic systems. Consequently, in the United States, over 3.5 million college students opted for at least one online course in the fall term of 2006 (Allen & Seaman, 2007). Gradually, the use of digital devices for reading have gathered increased importance as schools move to paperless classrooms across the globe (Shishkovskaya, Sokolova & Chernaya, 2015).

One of the reasons for the growing presence of digital reading in the lives of students and teachers is the availability of a plethora of devices to employ when reading digitally. These devices include very handy and portable computers as well as tablets such as iPads, Kindles, and even

smart watches (Singer & Alexander, 2017). National Center for Education Statistics (2013) shows that 97% of students in the classroom had access to a computer by the year 2009. Because of how common these devices are, numerous people are engaging in online reading. A study by Zickuhr et. al. (2012) highlights that about 43% of Americans and 48% of those between the ages of 18 and 29 read newspapers or books online. This number is said to always be on the rise (Stephens, 2014). Due to availability, children are now given access to smartphones and e-book readers at very young ages. Rideout (2014) conducted a nationally representative survey where he found that 62% of 2 to 10-year-olds in the U.S. had access to either a tablet or e-book reader for electronic reading at home and half of that percentage were engaged in electronic reading. Moreover, research conducted by Gilmore (2015) shows that children begin using e-books at an average of 5 years. Interacting with e-book readers, smartphones and engaging in electronic reading at a much younger age builds children's skills with technology and hence a preference for e-books over printed text.

Another reason worth noting for the wide spread use of digital devices for online reading is the advantages that it seems to have over printed text and reading print. Gunter (2005) mentions that e-books are easy to obtain, are cheaper and give the ability for the reader to search and annotate, making digital texts advantageous for students. Aside from these pros, e-books are much more portable and can be easily updated as compared to printed books (Jamali, 2009).

2.2 THE USE OF DIGITAL TEXTS IN AFRICAN UNIVERSITIES

Research focused on the use of electronic text in educational institutions in Africa are very minimal as many of these studies center on the use of electronic text in higher education institutions in developed countries. For example, different researchers have talked about the use of e-text in relation to university students in the United States of America (Diaz et. al., 2010; Doering et. al.,

2012; Foasberg, 2011; Shrimplin et. al., 2011). Similar research has been done in countries such as Hong Kong (Lam et. al., 2009) and in Australia (Brand et. al., 2011). Unlike these developed countries, the absence of the use of e-text at different levels of education in developing countries in Africa account for the minimal research that focus on the inclusion of electronic text in education in such countries. The available research pertains to pre-tertiary education. For instance, Power & Sankale (2007) examine the use of e-text among primary school teachers in South Africa, Liebenberg (2012) focus on secondary school students in South Africa and primary, junior high and senior high students in Ghana (Worldreader, 2012).

Aside from the challenges associated with the increasing student population, brain drain, frequent labor strikes, closures of campuses and declining quality of education in Africa, the development and the convergence of Information Communication Technologies (ICTs) have prompted the need for higher education reforms in the continent (Adam, 2003). The Association of African Universities (AAU), during its 10th general conference expressed concerns about the crucial ICT situation in African universities and colleges ten years ago.

Even though most institutions of higher education in developed countries or countries with emerging economies have slowly made the shift or in the process of shifting from print-based books and resources to use more electronic books and devices in the college curriculum, it is not very common in most developing countries. Asunka (2013) in his study shows that the usage of digital texts in the University of Ghana is not very common. This study indicates that instructors in Ghanaian universities would rarely recommend course materials in electronic forms, when print alternatives are available. Even though most educators believe that e-books stand a greater chance in academia and will help solve challenges that higher education institutions face in respect to availability of textbooks (Leaf, 2003) and Renner (2009) predicted that e-books will be normalized

at the end of the decade. They both state that, even though printed books will not be extinct in educational institutions around the world, electronic text will be the most popular in years to come. However, there are a variety of reasons why the use of electronic text is not as popular in African countries as it is in the Western world.

The rapid expansion in the means of communication in Africa is worth discussing (d'Aiglepierre, Aubert & Loiret, 2017). The use of mobile phones has increased significantly from 5% in 2003 to 73% in 2014 and is still increasing. Telecommunication networks are increasing rapidly causing there to be over 650 million mobile phone users on the continent. Despite the increase in the use of the mobile phones as a means of communication in the continent, the use of e-text in the education is still low in the continent. The reasons for the low usage of electronic text in Africa is because of inaccessibility to internet, and the lack of stable electricity.

In Sub Saharan Africa, it is estimated that only 1 in 250 people have access to the internet as against the global average of 1 in 15 (Asunka, 2008 citing UNESCO Institute for Statistics, 2007). This means that with fewer people having access to the internet, the use of digital texts and online learning in educational institutions depends on the available information and communication infrastructures in place. Adam (2003) discusses reasons for the low ICT usage in African higher institutions. One of the reasons mentioned in terms of infrastructure is the unavailability of bandwidths. Prohibitions on academic institutions' accessing international circuits, high licensing fees for connection, high costs of bandwidths are the reasons why bandwidth is a very scarce ICT resource. Jensen (1998) in his study shows that 60% of African countries have bandwidth less than that of a typical institution in the developed world. With insufficient bandwidth, a typical university with over 6,000 students and about 300 staff members often have to deal with slow internet, or connectivity issues which can be more frustrating than not

having internet connectivity at all (Adam, 2003). According to Penn (2013) in South Africa and Nigeria, the low levels of bandwidth and data cables have contributed to how expensive broadband is, causing it to be inaccessible to majority of the population. Eicker-Nel & Matthee (2014) also discussed in their study in South Africa how slow internet and issues of Wi-Fi connectivity have negatively affected the adoption of e-texts in the area.

The lack of stable electricity in most African countries significantly affects the use of e-text in tertiary institutions because students may not have access to regular power supply. In explaining why e-text adoption rates are low in South Africa, Eicker-Nel & Matthee (2014) explain that the absence of stable electricity poses a big issue for the use of adoption of e-text since students and teachers would be unable to charge these devices. There will be no use in adopting electronic text if power supply is not unavailable to charge devices such as tablets, computers and smartphones on which electronic text will be accessed.

Despite the challenges that keep the adoption and the use of electronic text at a minimal level, there have been attempts to avert the issue and increase the use of digital in African countries. Bookstores in Africa are beginning to offer e-book alternatives to printed books. For example, in 2010, South Africa had its first e-book store in Kalahari. This put South Africa ahead of many African countries including Nigeria and Ghana (Penn, 2013). Universities in Africa have also established digital library services at very different levels (Rosenberg, 2006). Rosenberg (2006) adds that even though digital libraries exist, they are coupled with challenges such as poor facilities for access, lack of funding, lack of retention of trained staff. These foregoing issues highlighted in the literature give insight into the little to no opportunities available for students in developing countries in Africa to familiarize themselves with digital texts, causing them to face challenges in navigating digital texts when they come the United States for higher education.

2.3 DIGITAL VS PRINT: THE NEVER-ENDING DEBATE

There is a growing body of literature which focuses on the comparison between print and e-text (digital texts) in respect of the one that facilitates better reading comprehension and recall. A large number of studies has shown that the use of printed text led to better comprehension and recall than the use of e-texts (Ross et. al., 2017). Singer & Alexander (2016) discovered that students could recollect salient points related to the main idea and concepts better with printed text even though students remembered the main points whether it was print or digital texts. Also, Jeong (2012) concluded that the fact that participants had higher scores on quizzes is indicative of their better comprehension when using print-based text as compared to digital or electronic texts.

There have been many reasons attributed to the fact that reading comprehension and recollection is better in print-based text than digital textss. In my experience, digital texts require more attention because of its many inherent features. Reading e-text is much more complicated than reading print. As Mangen et. al. (2013) explain, the display, scrolling and navigation of digital texts make digital texts less efficient than print when it comes to reading comprehension and recollection. The simple nature of just flipping a print-based text makes it much easier to focus on reading and memorizing as the reader does not have to focus on any other thing except the text.

On the other hand, Liu (2005) posits that the various features (convergence of text and images, interactivity, immediacy of accessing information, etc.) available to the reader when reading on screen are the advantages that are absent on paper. Even though I do agree that immediacy of accessing information when reading e-text is true due to the presence of a search button, the other features make reading on a screen complex for most readers. The presence of these complexities, according to Jeong (2012), require more of reader's cognitive load and more attention from reader and can cause eye strain and fatigue. A study by Jabr (2013) states that eye

strain and fatigue can lead to decreased concentration which in turn hinders the learning process when using e-texts. Literature that focuses on the advantages of e-text are not as much as compared to the ones that favor print-based text. Even though printed text and digital texts are always pitted against each other by comparing and contrasting, there exist a body of literature that conclude that digital texts is superior to printed text. Students read faster on tablets with little difference in comprehension between the two platforms (Sakstein et. al., 2015). Several studies also show no particular difference in reading comprehension and recall between print-based texts and digital textss (Porion et al, 2016; Chen et al, 2014; Norman & Furnes, 2016). These studies have shown that whether a person uses print or digital texts, the ability to understand and recall what was read is the same.

However, in a study by Liu (2005), it was discovered that when reading on screen, people would use a substantial amount of time to engage in non-linear reading, one-time reading, spotting keywords, skimming and scanning. In this same self-report study, Liu ascertained that participants were easily distracted and did not read with high concentration. Liu et. al. (2009) suggested that every 3-10 minutes, people who were working on a digital device would change over to different activities. This makes reading on a digital device more time consuming and full of distractions that hinder concentration. In contrast, Dyson and Haselgrove (2001) stated that there was no relation between recall of information and reading speed and that reading comprehension decreased as reading speed increased. The fact that a person reads slowly does not mean that they will understand the text any better than the person reading faster; given a situation where the person is reading slower because they are switching activities and are distracted, comprehension will be at all-time low. Research reviewed shows that neither one of the texts wins the debate of which is better. However, preference for one is based on experience, availability and ease of use.

2.4 INTERNATIONAL STUDENTS IN U.S. COLLEGES

Historically, during the 20th century, international education was encouraged for the reasons of state development, diplomacy and the building of political ties; however, the popularity and massification of higher education presented international students as a revenue source for both developed and developing nations (Habu, 2000; Rhee, 2004). Higher education leaders therefore acknowledge the commercial benefits international students contribute to local and national economies as most international students do not have access to student loans and funding and have to pay full tuition (Lee& Rice, 2007). Revenue is also generated from visa application fees and Sevis fees, which international students are subject to, whether or not they are allowed to migrate to the host country legally. According to the IIE (2003a), $12 billion in revenue is generated from international students in the U.S., which has boosted education as the fifth largest export of services in the U.S. Other countries such as Britain, Canada and Australia have emerged as competitors for the commercial and economic benefits that international students are known to generate for the local and national economies (Lee & Rice, 2007). Reports have estimated that there are as many as two million international students enrolled in colleges and universities worldwide (Campbell, 2004). By the year 2025, the number of international students worldwide, is reportedly going to grow to about seven million (Urban & Orbe, 2007). As stated previously, the number of international students in the United States is estimated to be more than a million. The Institute of International Education (2016) states that international students originate from several countries all over the world, with India and China being the top countries of origin for international students in the United States. In 2015, international students comprised of 14.2% of all graduate students in the United States whereas international students comprised 3.3% of all undergraduate students in the United States (National Center for Education Statistics, 2016). In addition, this means that

one out of five graduate students are international students. Okahana & Zhou (2017) in their study report that in fields such as computer engineering and computer science, international students enrolled in these programs exceed the number of US citizens and permanent residents studying in these areas.

Even though globalization presents numerous benefits, Habu states that "while studying abroad provides great opportunities for personal and professional growth, it also encourages a narrow view of students as economic revenue, which in turn can place less emphasis (and accountability) on their cross-cultural and academic experiences" (2000, p. 62). Evidently, since international students provide great economic gains to the host countries, recruitment of international students has increased significantly over the past few years. Because of these gains, host nations tend to view international students as customers. Thus, host nations tend to be more concerned with getting as many international students into their colleges, with less attention paid to what the experiences after enrollment are, and how to make studying and living in their counties a more fulfilling and satisfying experience. It is therefore safe to say that the impetus behind international education has shifted from diplomacy and intercultural exchange to globalism and consumerism (Lee & Rice, 2007).

Students coming to the United States encounter difficulties from the very beginning when they have been offered admission. Obtaining legal travel documents for the United States has become such a difficult and tiresome process for immigrants especially international students (Lee & Rice, 2007). According to Altbach (2004), the immigration process that international students have to go through has become so burdensome that it has become the reason that many students have decided to not apply to educational institutions in the United States. Financial and time resources spent on trying to obtain the legal travel documents most often prove futile as most

international students are denied travel documents, making it impossible for them to migrate to the United States. The processes of application, obtaining travel authorizations all requires one to have technological skills and internet access. Because of the onerous application and admission processes, most students prefer to apply to schools outside United States such as Canada, Australia and UK.

Those who persist through the immigration process, arrive in the United States to realize that academic procedures and living arrangements are even more onerous tasks. Academic procedures that are designed to keep international students informed and jumpstart their degrees are often quite cumbersome as international students usually have no guidance in these procedures. International students, in the effort to save money often tend to look for accommodation outside of university-provided accommodation, which is often very expensive. Research (Kher et. al., 2003) highlights how few institutional support services accommodate international students' need, even though international students have more needs as compared to native students. In addition, this study mentions the importance of institutions finding ways to meet the special needs of international students by focusing on integrating proactive programs that assist international students in the initial integration into institutions of higher education.

International students are treated differently based on their ability to speak English, cultural differences and other social identities such as nationality, religion and race (Kim, 2011; Poyrazli & Kavanaugh, 2006; Wang, 2008). International students are often times dealing with issues of cultural and identity crises in the United States. According to Jackson (2006), international students feelings' are associated with the pressure to adjust their cultural worldview to fit into a new one and to also be accepted into the new culture. Attitudes, ways of doing things in their home countries may be incompatible with the host culture, which can be a cause of internal and relational

conflict (Berry, 2005). Because of these challenges, international students may be in a bind to reconcile divergent worldviews and cultural beliefs with the desire for social acceptance (Adegbola et al, 2018). Moreover, international students' identity and cultural crises make it difficult for them to forge social relationships which are meaningful and helpful. "Differences in food tastes, views regarding sexual openness, gender roles and the perception of time are some examples of the cultural adjustments encountered by international students" (Lee & Rice, 2007 pp. 386). Failure to reconcile the culture of the home and host countries make it difficult to form relationships with the native students as they are perceived to be too different to international students.

Moreover, international students have their academic capabilities judged on the basis of their proficiency in English and as a result, no matter how much of a good student one is, one would usually not be able to make that sort of impression on both professors and other fellow students because of their inability to express themselves in English (Wang, 2008). The importance of English proficiency in United States is also seen in the kind of test scores that international students have to take when applying to various universities or colleges in the United States. International students who are not proficient in the English language are less likely to participate in class and can affect interactions with cohorts and professors (Wang, 2008). Kim (2011) emphasizes how not being able to participate in class can affect international students because in-class participation and working in groups is greatly encouraged in the United States. To ameliorate these challenges, international students tend to rely on social support structures such as family, friends, and/or significant others in the home or host country. These social support systems have direct effects on psychological adjustments and buffering effects on life stresses (Mallinckrodt & Leong, 1992). Research has shown that relationships with U.S. American students positively

influences international students' academic experiences and lives in host country as a whole (Hendrickson, Rosen, & Aune, 2011). Making friends with native students helps international students to adjust to the challenges that they encounter on their journey as international students. A study by Rose-Redwood (2010) shows that even though relationships with students from the host country tend to help international students with their challenges, international students interact the least with students from the host country, but instead build relationships with other international students.

Since the year 2001, nearly 30,000 students from sub-Saharan Africa were enrolled annually in U.S. universities and in the year 2014/2015 academic year, the number of international students from this area increased by 8%, which is the largest increase ever recorded (Kent, 2007: IIE, 2015). Scholars have shed light on the fact that the adjustment of international students who are Black and from African countries may be different from the experiences of white international students (Warren & Constantine, 2007). Yeo et. al. (2018) found that as African international students are considered racial and ethnic minorities, their adjustment process is different and more difficult than white international students. Aside from being racially or ethnically different, international students from African countries deal with the most cultural and financial differences. It is quite evident that the educational system in the United States is very different from the educational system of most African countries. As stated earlier, there are studies that investigate the experiences and transitions that international students navigate as students in the host country. However, such research focuses on international students as a homogenous group not realizing that international students differ on various levels and these differences really do affect how they respond to challenges (Mwangi et. al., 2018). For instance, a student coming from an English

language dominant country may have an easier time adjusting than students whose language in formal education was not English.

The challenges encountered by international students oftentimes affect the general welfare of the students and satisfaction derived from pursuing their degrees in a foreign country. In a quantitative study of international students in the U.S., language, financial costs and feelings of isolation were identified as problems that negatively affect the satisfaction of international students (Robertson et. al., 2000; Perucci & Hu, 1995). However, these studies emphasize the need for international students to cope to the host nation's culture, failing to acknowledge inadequacies by the host country that need to be changed. International students are therefore left with the onus of perseverance, adjustment, and integration into the host culture and society with little or no responsibility placed on institutions of higher education by these researchers (Pritchard &Skinner, 2002). The assumption is that institutions in the host countries are often blameless (Lee & Rice, 2007) and this is evident in the number of studies available that consider how institutions marginalize international students intentionally or unconsciously.

2.5 EFFECTIVE COMMUNICATION AND STUDENT SUCCESS IN ACADEMIA

Communication, according to Keyton (2011), is the process of transmitting information and common understanding from one individual to another. Effective communication is linked to the professional and academic success of students (Rubin & Morreal, 1996). Thus, without proper communication skills, a student would not meet their set academic goals. It is therefore expedient that students develop effective communication skills to aid them in their courses and their future workplaces. Without effective communication skills, students might not be able to excel, not because they are not smart but because of the failure to transmit and understand information. According to Khan, Khan, Islam & Khan (2017), communication skills involve listening and

speaking and also reading and writing. Students use reading, writing, listening, and speaking as ways of corresponding with fellow students and facilitators during the learning process. Research (Khan et. al., 2017) focuses on the importance of teachers possessing good communication skills to help facilitate the learning process and make things easier for students. The study measures whether the communication skills of a teacher has an effect on the academic performance of students by having students and teacher fill a survey using the Professional Attitude Skills dataset. The findings of the study showed that students learn more and excel in their studies when the teachers use better communication skills. Loss (2002) also posits that not only does teacher's good communication skills help students to excel academically, it also boosts the relationship between students and their teachers.

Students also need to possess good communication skills so that there can exist a mutually beneficial relationship between teachers and students. Communication skills go beyond listening and speaking in class and involve reading and understanding what is being read by the student. Reading is defined as a cognitive-linguistic activity that involves two components which are decoding and comprehension (Pretorius, 2002). He further explains decoding as those perceptual and parsing aspects of reading activity whereby written signs and symbols are translated into language and comprehension as the overall understanding process whereby meaning is assigned to the whole text (p. 170). Consequently, for a student to read effectively, decoding and comprehension have to take place simultaneously and the assessment of reading skills usually determine skills in both decoding and comprehension. A study by Pretorius (2002) conducted to measure the effects of reading ability on the academic performance shows that reading ability emerged as a robust indicator of students' performance. The research concluded that students who possessed good reading skills, with great decoding and comprehension skills had better grades

than their counterparts with low decoding and comprehension skills. Thus, since reading constitutes a great deal of the learning process, one needs to improve reading ability if they want to improve academic performance.

In the ongoing argument between digital and printed text, research indicated that reading on digital devices such as laptops, tablets and smartphones can affect the comprehension and recall of students (Ross et. al., 2017; Singer & Alexander, 2016). Students who use digital devices may have to deal with impoverished reading skills because they are reading on devices that affect the decoding and comprehension of the text. Since reading is included in the communicative abilities that students are expected to possess and excel in their academic careers, it becomes necessary that reading together with other forms of communicative skills be improved to ensure good academic performance of students.

Despite the extent of the issues surrounding international students in institutions of higher education, research on the academic experiences of international students is limited. There are studies that investigate the social experiences of international students, their adjustment and psychological health, generally as related to their academic success and persistence. Other studies highlight the adaptation of particular groups from specific countries. This study will seek to examine how international students from African countries adjust to the persistent use of e-books and other electronic-based resources while pursuing further studies in U.S. institutions of higher education. The study will also attend to the expressive communicative practices used by international students from Africa when navigating print and digital texts. The study is guided by the following research questions:

1. What are international students' previous experience with digital texts and some of the challenges faced by international students from developing countries when exposed to digital texts?

2. What are some of the communicative practices used by international students from African countries when transitioning from print to digital texts?

3. Do international studies from African countries prefer print or digital texts?

4. How do international students deal with challenges that arise from using digital texts? (The expressive and prescriptive practices of international students).

Chapter 3: Theoretical Framework

The first part of this chapter explains Paolo Freire's Critical Consciousness Theory and Critical Race Theory which is the framework used in the analysis of data collected for this study. The characteristics of this study that makes it a phenomenological research is also highlighted in this study. Finally, in this chapter, the methods used in the data collection phase are also discussed.

3.1 PAOLO FREIRE'S CRITICAL CONSCIOUSNESS THEORY

To create social change on oppressive situations, Freire (1970) argues that people must possess critical consciousness. Freire defines critical consciousness as a state in which people are aware of social inequality, understand their place in that inequality and take action against the oppressive elements in society (Kohli, 2012). Freire believed that structures of oppression and domination exist in institutions such as family and schools and the only way to uproot these structures is for people to be politicized and seek to make changes. According to Groux (2001), critical pedagogues hypothesize that educational institutions are political sites and structures with uneven distribution of power and as such, they tend to produce societal power imbalances. Freire asserts that a culture of silence, which was deeply anchored in educational systems, allowed for these oppressive structures to operate in these institutions. In creating a change to stop these oppressive structures in educational institutions, Freire theorizes that critical consciousness is developed through a problem-posing method, which discusses the situation with the people involved to create understanding of the situation, and for them to act on the situation after thinking through it.

Freire develops critical pedagogy as a solution to social inequality and oppression in educational institutions. Ira Shor (2014) defines critical pedagogy as:

Habits of thought, reading, writing, and speaking which go beneath surface meaning, first impressions, dominant myths, official pronouncements, traditional clichés, received wisdom, and mere opinions, to understand the deep meaning, root causes, social context, ideology, and personal consequences of any action, event, object, process, organization, experience, text, subject matter, policy, mass media, or discourse. (Empowering Education, p. 129)

According to Riasati & Mollaei (2012), critical theorists posit that there exist three tenets that elaborate on the characteristics of critical pedagogy. These tenets are:

a) reflection upon the individual's culture or lived experience;

b) development of voice through a critical look at one's world and society, which takes place in dialogue with others;

c) transformation of the society toward equality for all citizens through active participation in democratic imperatives.

This study adopts the critical consciousness and critical pedagogy approach by Paolo Freire to establish a critical understanding of international students' challenges with digital texts due to previous experience with digital and printed text. Using the problem-posing framework proposed by Freire, participants of the study were given the chance to reflect on their lived experiences which fosters understanding of the situation and an ability to act on the situation.

3.2 CRITICAL RACE THEORY

Racism is defined as "the belief in the inherent superiority of one race over all others and thereby the right to dominance" (Lord, 1992, p. 486). Marable (1992) defines racism as "a system of ignorance, exploitation, and power used to oppress African-Americans, Latinos, Asians, Pacific Americans, American Indians and other people on the basis of ethnicity, culture, mannerisms and

color" (pp. 5). Critical Race Theory (CRT), developed in the 1970s in the field of law, was used to draw awareness to racism by highlighting the experiences of people of color (Kohli, 2012). Over the years, CRT has been used in other fields to shift racism from an individual to a structural issue. According to (Solorzano & Delgado Benal (2001) as cited in Kohli, 2012) CRT in education is guided by the following five tenets:

1. Centrality of Race and Racism: Research in education employing CRT must focus on race and racism, and also highlight other forms of subordination that are related to race.

2. Challenging the Dominant Perspective: All CRT research should aim at challenging the dominant narratives, often referred to as majoritarian stories.

3. Commitment to Social Justice: CRT research strive to solve or improve social justice problems. Critical race theorists define social justice research as work that (a) addresses the unjust treatment or control of people of color, which includes intersections between racism, poverty, sexism, and dehumanization; (b) has the goal of eradicating conditions that allow for the unjust treatment of people of color; and, (c) is aimed at the emancipation, healing, and liberation of people of color from oppressive conditions (Solorzano & Delgado Bernal, 2001; Yosso, 2005).

4. Valuing Experiential Knowledge: CRT scholars value the stories of their participants and believe in the power of story in the attempt to understand and eradicate social inequality and oppression.

5. Being Interdisciplinary: CRT scholars believe in the notion that the world consists of different facets and aspects and research about the world should reflect the different perspectives and aspects of the world.

These five tenets are employed as a framework for this analysis, and to engage the voices of international students from African countries in challenging the dominant narrative that all students can use digital texts without any struggles. Using this framework also draws attention to the experiences of students as narratives worth considering in the academic decisions that affect their academic lives and to strengthen racial consciousness in racially oppressed people. As Freire asserts, it is through conscientization of racially oppressed people through a process of reflection and action, understanding of the situation that people are in that social inequality can be eradicated.

CRT and Freire's theory of critical consciousness serve not only as the conceptual framework of this study but also guide the methodological design. These theories encourage researchers to see those who share their stories as people who have complex lives, voices and challenges and not just as data sources (Kohli, 2009). In addition, research must also benefit the participants who share their stories and their communities.

3.3 RESEARCH METHODOLOGY

Following Creswell (2017) this study qualifies as a phenomenological research. Phenomenological research is a type of research which identifies the intricacies of human experiences concerning a particular phenomenon as described by participants in a study. In other words, it seeks to understand how people experience particular situations. Understanding the lived experiences of participants marks phenomenology as a philosophy as well as a method, and the procedure involves studying a small number of subjects through engagement to develop relationships of meaning (Giorgi, 2012). In this process, the researchers are in the same category as their participants but puts aside their own experiences in order to understand those of the participants in the study. In other words, researchers put aside their biases about a particular phenomenon to delve into the perspectives and understandings of those who have experienced the

situation of interest. Phenomenological studies are conducted through interviews with small sample sizes. According to Center for Innovation in Research and Teaching (n.d.), data are mostly collected through qualitative methods and analysis includes an attempt to identify themes or generalize regarding how a particular phenomenon is actually perceived or experienced. In this research, I will focus on the lived experiences of international students from African countries in the United States.

Hoffding & Martiny (2016) posit that qualitative interviews are the best data collection method for phenomenological research as it allows the interviewee to provide accounts of their lived experiences and their world in relation to the phenomenon being studied. The data collection method for this study is interviews as this study is an explorative study that sought to delve into the experiences of international students when using digital texts. The interviews were semi-structured, allowing for flexibility in story sharing about experiences. The interview questions were made to be simple and clear and featuring open-ended questions that allow participants to provide more in-depth and explanatory answers.

3.4 METHODS

The first process, after determining the scope of my research was to obtain permission from the Institutional Review Board (IRB), since my research involved the use of human participants and their safety, privacy and welfare needed to be assured. The process involved sharing the study's rationale and how I was going to handle every step of the research procedure. I submitted a proposal which included the research questions, the project's duration and scope, the selection process of participants and the methods of data collection. I also provided description on the research instruments employed during the research process. According to Tracy (2003), in qualitative research, the research instrument is the researcher, thus I provided the IRB a list of my

interview questions. The IRB also required that researchers indicate the ways in which participants willingly consent to becoming participants of the study. This is to ensure that participants fully understand the risks and benefits associated with agreeing to be a part of the study. After review, the IRB concluded that the correct level of review for this study is an exempt review. An exempt review is the least involved type of review, typically used for qualitative studies that comprises the examination of public behavior (Tracy, 2003).

For the study to be exempt, Tracy (2003) states that data must be recorded in a manner that participants cannot be identified. Moreover, she further asserts that data recorded during interview process should not place participants at risk of criminal or civil liability or damage their employability, financial standing or reputation. I ensured this by not including names of participants in the interviews recorded and also used pseudonyms when analyzing data. Data recorded was kept safe, and hidden in an encrypted file on my personal laptop. Ensuring participant's confidentiality was very important.

3.5 STUDY SETTING AND PARTICIPANTS

This study took place in a university in the southern part of the United States. The study participants were international students from different African countries. The university is located in a border town making it easier for students outside the United States to attend. This public university has quite a large number of international students making it the ideal institution for this study. The participants of the study are both undergraduate and graduate students in the various colleges and departments.

I used a combination of convenience and snowball sampling as it is the best method for reaching difficult to access populations. Initially, I identified five participants and after the interview I asked them to suggest people that fit the criteria of my study. International students

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from African countries are the minority in the institution in which I decided to conduct my study, so this was the best to recruit participants for my study. With an international student population which is already quite skewed, I recruited a handful of participants who represented a maximum variation and then generated diverse snowballs from the sample. According to Tracy (2013), this is the best way to prevent a sample that is skewed to one type of group.

Since the goal of the interviews was to stimulate discussion and offer deeper interpretations into participants' prior and recent experiences with digital and printed text, the interviews were narrative and unstructured. I followed flexible question guide but also allowed the participants' answers to questions guide the interview. This allowed for the differences of the participants to show through in the interviews. Interviews were also open-ended questions that allowed participants to provide more information and stories about their experiences with digital texts as international students. The semi- structured interviews provided participants the opportunity to provide and expand on valuable stories from their present and past experiences in relation to the phenomenon under study. As Kvale asserts "the more spontaneous the interview procedure the more likely one is to obtain spontaneous, lively, and unexpected answers from the interviews" (Kvale, 1996, p. 129). Interviews were audio-recorded and lasted about 20 minutes on average. Notes were also taken during the interviews. The interview questions concerned the participant's previous experiences as students in their respective home countries, their experiences as students in the United States, and the strategies they adopt when using electronic text. Participants were also asked their preference between digital texts and printed text.

Ethical considerations played a very integral role in my research process as my research deals with human participants. The process in which participants were recruited was very much based on three criteria: the participant must be an international student; the participant must be

from an African country, and they must have completed not more than three semesters in their level of education. Participants had to meet the following criteria based on the nature and of the research is. With regard to ethics, I was also very cautious of the area in which data were collected, analyzed and interpreted. All participants were made to sign informed consent forms after being debriefed on the focus of the research. This was an important step to prove that all participants willingly and voluntarily decided to take part in the study.

Given that I identify as an international student, and with the experiences of international students I was very mindful of how self-reflective my research was. Tracy (2003) defines self-reflexivity as careful consideration of the ways in which researcher's past experiences, points of view, and roles impact these same researcher's interactions with, and interactions of the research scene (p. 2). Knowing that my experiences, point of view, background can simultaneously be an advantage and a disadvantage, I chose to critically assess my influences on the research and data analysis process and also to position myself as a researcher studying a group of people and also a become a member of the group under study. I also constantly self-evaluated the approach I had chosen for my research and made sure that I was able to appreciate differences in other international students' experiences with digital texts.

Chapter 4: Interpreting Data

This chapter presents the findings of the interviews conducted for this study. The first part of this chapter discusses how data collected were analyzed and presents demographic information on participants of this study. The second part of this chapter highlights the key themes in the respondents' interviews. Results are very crucial in providing recommendation on international students' use of digital texts in and outside the classroom.

4.1 CODING

Data collected was analyzed using a manual coding process. According to Tracy (2013), coding is the process of systematizing and labelling data collected in the interpretation phase of the research. I used the manual coding process where I listened to the interviews and assigned descriptive codes, usually language used by participants that capture the meaning of the data. At this stage of the coding, I used in vivo codes, which are codes that are derived from language and terms used by participants themselves (Strauss, 1987). In other words, the focus was in the answers that were already present in the data being analyzed. These codes from the primary-cycle coding were further categorized into themes with interpretive dimensions. This is referred to as focused coding or secondary-cycle coding. To categorize coded data into themes, I looked at the focused codes and analyze them by framing questions about the codes. In categorizing codes that had emerged in the primary-cycle coding phase, I interpreted data and included identifying patterns and cause-effects progressions that emerged during coding.

4.2 DEMOGRAPHICS OF PARTICIPANTS

To fully present the results of this study, participants' demographic data is first provided. Participants' names were replaced with pseudonyms to protect the identity of these international students. I conducted interviews with 15 international students from African countries. As Lauer

and Asher (1988) posited, "when a researcher can determine a population size, it becomes easier to carve out the size and type of sample by considering the question of feasibility: the number of units from which they can carefully collect good data and which they can adequately analyze" (p. 58). At the beginning of my research, I only wanted to interview international students from African countries who were in the College of Liberal Arts as a way of narrowing down my research population and to also focus on students who did a lot of reading. Being an international student myself, I reached out to cohorts in the College of Liberal Arts and administered the interviews. The total number of people I interviewed from the College of Liberal Arts was three. At this stage, my thesis instructor advised that I include international students from all colleges to widen my sample and to also add some depth to my study. I reached out to the president of the African Students Organization (ASO), to help me reach out to the international students who had been enrolled for not more than three semesters. It was important that my participants met this criterion because I only wanted to study international students who were relatively new to the educational system in the United States. Students who had been enrolled for more than three semesters may have gotten used to the system and that would affect the results of my study. I choose three semesters to be the cut-off point because international students who had been students for one or two semesters were very few at the time of my data collection.

The president of the African Students Organization provided me with five student names and phone numbers. I contacted these students and interviewed them. After the interviews, I asked them to suggest friends or colleagues who I could interview, finding 10 more participants for this study. Even though 15 interviews might not be a sufficient sample to represent the entire international student population in the university, these students represent how African students adapt to the use of digital texts and online learning techniques. In addition, since this study is a

phenomenological study, the sample size ought to be small so that the researcher can delve deep into the experiences of the participants.

Participants interviewed were recruited from the same university in the southwestern part of the United States. Out of the fifteen students who were interviewed, six identified as females and nine of them identified as males. This means that 60 percent were males and 40 percent were females. With the level of education, 12 of the international students were graduate students pursuing either a Master's or Doctoral degree and 3 were undergraduate students. The African countries that these international students are from are Ghana, Cameroun, Nigeria, South Africa and Kenya. The highest amount of years that participants had been students at the university was 1 year. Thus, seven of the participants had completed 2 semesters here in the University and were in their third semester and eight of the participants were in their first semester and had spent approximately two months at the university at the time of the interview.

Participants were from the College of Liberal Arts, Engineering and Sciences. The students from the college of Sciences were from the Mathematics, Statistics, Health Sciences, Bioinformatics and Computational Science departments. For Liberal Arts, participants came from the Rhetoric and Composition and Psychology departments. Participants from the Engineering department came from the Mechanical and Electrical Engineering departments. As seen from the figure below, most participants came from the College of Sciences followed by the Liberal Arts and Engineering.

Table 1.1: Case Descriptors

Pseudonym	Country	Level of Education	Gender	How long in university
Riley	Cameroun	Graduate	Female	2 months
Grant	Ghana	Graduate	Male	12 months
Nancy	Nigeria	Graduate	Female	12 months
Mills	Ghana	Graduate	Male	12 months
Richard	Ghana	Graduate	Male	2 months
Tony	Nigeria	Graduate	Male	2 months
Alice	Ghana	Graduate	Female	12 months
Mario	Ghana	Graduate	Male	12 months
Albert	Nigeria	Graduate	Male	2 months
Moses	Ghana	Graduate	Male	12 months
Kelly	Kenya	Undergraduate	Female	2 months
Johnny	Ghana	Graduate	Male	2 months
Nina	South Africa	Graduate	Female	2 months
Gina	Nigeria	Undergraduate	Female	2 months
Martin	Cameroun	Undergraduate	Male	12 months
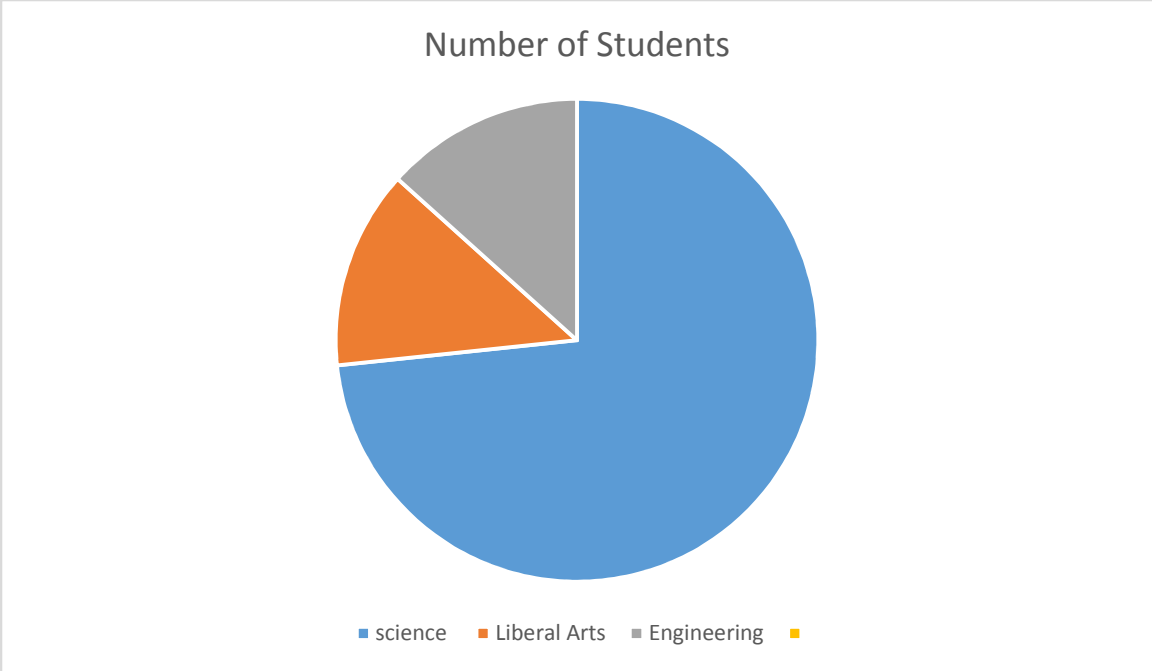
Figure 1.1: College of Participants Interviewed

4.3 FINDINGS

Interview questions were structured to provide answers to the research questions of the study and to provide a deeper understanding into the challenges that international students from African countries face when exposed to digital texts. The first research question which is "what are international students' previous educational experiences and what some of the challenges faced by international students from developing countries when exposed to digital texts?" This was investigated by asking international students from African countries to provide a description of their previous educational experiences in their home countries or wherever they received previous education with emphasis on the type of study materials used. Out of 15 international students interviewed, 2 students answered that they had been exposed to digital texts in their primary, high school and undergraduate education. One of them attributed the use of digital texts to the presence of young teachers and professors who were technology savvy and wanted to keep up with the rest of the world. The other said that he was exposed to digital texts at the graduate level in Nigeria

because he started his graduate education before moving to the United States to pursue his Master's degree. Because of this exposure, these two students mentioned that they did not experience any challenges with digital texts. Five students also believed that both printed and digital texts was used interchangeably in previous educational experience. Both printed and digital texts were used interchangeably by professors and students alike. A student from Nigeria explained that she was forced to use digital texts because the cost of printing or printed text books was very high and as such sometimes it was beneficial to students to just read on computers or smartphones. Instead of buying the textbook or having it photocopied, friends would just share the PDF version of the book to save cost. Even though digital texts were used, it was mainly out of necessity, and printed text was the most used of the two. When asked what forms of text was used prior to their coming to the United States, this is what one student said:

"I am a tech person, so I used both digital texts and printed text in school. Sometimes some of the books are not available to be bought in Ghana so I had to buy some of the books online."

"In my tertiary education, we had sources online to access some educational materials. Because I had access to a computer and I am a screen person, I used digital texts frequently."
It is important to note that all of the students who admitted to having prior exposure to digital text before coming to the United States, had been introduced to digital text in their undergraduate and graduate studies in their home countries. At the primary and high school levels, they had only used printed text. Tony explained that it was at the end of his undergraduate career that he first used digital text:

"Study materials were basically printed text for my undergraduate. Close to my final year, I started using a few journals online, so I started using digital texts. And also, I started my graduate course in Nigeria, so I used digital texts for research."

Eight students explained that printed text was the most used form of text because accessibility to digital texts was not reliable. One student explained that the study materials were more conventional, and featured only printed text. To avoid any unforeseen circumstances, teachers and students relied on printed text. Professors would dictate notes in class or ask students to purchase printed textbooks, which were used as supplementary reading materials in class. For example, Mario explained how learning in Ghana was like "In Ghana, pedagogy is quite conventional. Most of the time, you are given handouts which are mostly hardcopies"

Even though there were times where some professors would use power-point presentations when teaching, they would always make the notes available to students in printed form.

"Lecturers compile their own handouts or notes, usually printed or handwritten and they ask us to make photocopies so we could have copies of our own. And also, we have libraries, even though we did not have a lot of books in there so we could go and borrow books"

Others were very intentional in the avoidance of digital texts because they did not own a digital reader, or they were not readily accessible to them. The eight students agreed that there was little to no exposure to digital texts before school in the United States. Those who had little exposure explained that it was outside of school and because of the little readings that they would do on their smartphones.

Participants interviewed were also asked to juxtapose their educational experience in their home countries and their experience here in the United States. All international students highlighted that the use of digital texts here in the United States is way more advanced as everything is and can be done online. When asked how that makes them feel, ten students said that it was an uncomfortable and enlightening experience. Participants used words like "uncomfortable," "hard to adjust," "hard experience," and "not used to" as they explained their

sentiments towards the advanced use of digital texts in their university. Some students highlighted how complex digital texts made the execution of their duties as teaching assistants. Most of the teaching assistants admitted that initially, they could not use Blackboard because it was new to them and they did not know how to navigate the application. Students in the sciences, particularly Mathematics and Bioinformatics students mentioned that their difficulty with digital texts was heightened because of program specific software that they had to use in their various course work. For example, students in these courses had to be conversant with software such as MATLAB, Python, and R for their everyday course work. Students had to grapple with difficulty of using digital technologies in general and also becoming familiar with software or applications used in the various departments. As Riley explained:

"Using digital texts is out of my comfort zone… but maybe if I apply a little more time, I will be used to it." She also added that "I had not mastered the software R and I have to use it for my assignments and stuff all the time and it makes the work extra hard."

Other challenges also arose from having to use Blackboard as teaching assistants. Most of the students explained how hard it was for them to use Blackboard because they had never used anything like it prior to coming to the United States. When asked about challenges, this was what one of the students said:

"since I am a TA, I also have to learn how to use Blackboard as an instructor, not only as a student. It took time for me to learn how to post grades, take attendance. It is a steep learning curve.."

International students interviewed highlighted that due to their previous experience with digital experience or the lack thereof, they faced quite a number of challenges as novice users of digital texts. Students mentioned the inability to interact with text, eye strain, poor comprehension

and recall, and headaches as some of the challenges of using digital texts. Others explained that the experience of using digital texts was out of their comfort zone.

"I did not find any major challenge; I just find it to be uncomfortable. How to get started is the problem, it's a long process to pick a laptop, locate the file and read. Another thing that makes digital texts uncomfortable is annotation and making reference. Another challenge is eye strain"

Another student highlighted that they could not pinpoint particular challenges but that it was a learning process which they did not know where to start from.

"I feel the challenge is not knowing where to begin when using digital texts"

She explained that when school started for her, everything moved so fast that there was no time to get the hang of things. She also could not ask other students for help because she felt that everyone was busy with their own work and according to her, that was the main challenge with digital texts. This is what some of the students had to say when asked to mention challenges that they encounter when using digital texts:

"It is not advisable to look at the screen for a long time because of eye strain, distraction and not being able to underline or jot something down on the computer."

The second question this study seeks to answer is the communicative practices used when interacting with digital texts. Even though students definitely encounter challenges that usually make it hard for them to use digital texts, many of the participants interviewed highlighted that nothing can be done to avoid digital texts completely. As such, some of them have come up with techniques that make using digital texts much less complicated. Printing or turning digital texts into printed text was the number one technique mentioned when participants were asked to provide some strategies utilized when using digital texts. This means that most international students

interviewed tried their best to avoid digital texts as much as they could as a way of overcoming the challenges that came with using it. Slides were being printed out even when professors sent them to students digitally. By printing out everything, students were able to interact with the text by underlining, writing, and highlighting, an advantage that they believed was not available to them with digital texts. Consequently, being able to interact with text on paper means that students comprehend and recall better than when they read on screens. For example, Mills shared this when asked about the strategies used when using digital texts: "There is a way to avoid eye strain. These days devices come with the dark mode to enable you to use the device without hurting your eyes. About the distraction, if you are going to study, you need disconnect yourself from the internet."

Another strategy mentioned was dimming the screen and checking the resolution of the digital readers used. Students explained that the brightness of the screen can cause one to have eye strain and headaches because too much light is entering the eye.

"Dimming the screen helps me to deal with the eye strain. I also put my device on flight mode so I can concentrate on what I am reading." International students who mentioned that they dimmed the screen or changed the resolution found that they were able to read for longer periods on their digital readers, and that eye strain and headaches were also minimized. Disconnecting e-readers from the internet or putting them on airplane mode was mentioned as a good way to get rid of the distractions when reading digitally. Distractions were one of the reasons why some of the students interviewed did not enjoy using digital texts, so turning off the internet to prevent notifications from appearing on the screen when reading really helps keep one focused on the reading that is being done at the time. With regards to not being comfortable with digital texts, Abdullai advised that the only way to get comfortable is to continue to use digital texts. "Practice

makes perfect," he added. This is what one of the students had to say when asked how they are able to use and enjoy digital text:

"If you know you're struggling with digital, take it easy. Step by step, you cannot master it all in one day. You can also visit YouTube or Google if you are struggling."

With regards to not being comfortable with digital texts, one of the students interviewed advised that the only way to get comfortable is to continue to use digital texts. Practice makes perfect", he added.

The third research question wanted to find out what form of text international students preferred. Six international students said they preferred digital texts to printed text because of the portability and reliability it affords. One student explained that one can have dozens of e-books on an e-book reader and be able to transport it everywhere without trouble. Unfortunately, that cannot be said for printed text. Another student explained that in the case of adverse weather conditions like rain, e-books are unharmed. Also, printed text undergoes wear and tear after being used for some time. Because of this reason, he found it preferable to invest in e-books. There are other students who explained that even though they preferred digital texts, in times where they needed to prepare for an exam or quiz, they would choose printed text over digital texts. Below are quotes from students questioned about which text they prefer.

"I prefer digital texts because I have seen its advantages; I don't have to carry bulky notes, its faster, its more reliable.. in the long run, I think I will prefer digital texts"

Seven students preferred printed text to digital texts. The reason for the choice is that reading printed text is easier. One student explained that easier recall and comprehension is associated with the use of printed text. Moreover, printed text was the form of the text that has been used for years

by these students and using it does not require a lot of work to use unlike digital texts. Digital texts offer complexities that most students wish they would not have to deal with.

"I am used to digital texts, but I don't like using it. I prefer to read on paper"

"I prefer to use and buy a hard copy book than a soft copy book. I will buy the printed text and leave the digital texts."

Two students, even though they acknowledged how difficult it is to use digital texts, said that they did not have a preference for either printed or digital texts. One explained that both forms of text had their advantages and disadvantages and that it was a matter of practice. The other highlighted that the world is becoming more digital and as such very soon, we would all be forced to use digital whether we preferred it or not. For example, an international student explained: "I do not know which I prefer, they both have their advantages and disadvantages."

The last research question focuses on the expressive and prescriptive practices that international students employ when they encounter challenges with digital texts. To explain further, it is how international students deal with the challenges that arise from using digital texts. Eight of the students interviewed admitted that they do not take any steps to be able to deal with the challenges associated with the use of digital texts. When asked why they do not share their challenges with anyone else, some international students explained that they did not know who to inform and how sharing the information about these challenges can be beneficial. This means that these students do not believe that there are structures in place or people they can talk to when they experience difficulties. Others believed that it was a challenge that had to be endured and dealt with on one's own. Talking to other people about this challenge was useless because not everyone would understand, especially if they do not share the same experiences as them. In this case,

sharing is useless. For example, Tony from Nigeria answered "Why should I? I feel like I should just adjust."

Another reason for not discussing the issue with any one that could be of help was because there was no time to seek help. When school starts, people usually are busy with school work until school vacates. For example, one student felt that it would be a bother to fellow students, professors, or institutional bodies to talk about the challenges that arise from using digital texts. In other words, this student felt that all he had to do was adjust no matter how hard it is. Another student emphasized that they thought that there was no body or organization on campus that he could go and talk to about his challenges with digital texts so all he does is endure the struggle and try as much as possible to adjust to the system:

"I did not see my struggle with digital texts as an impediment to my education, so I did not see the need to discuss with anybody. However, I don't think there are bodies in place for people to talk to on campus about such things.. But I believe there should be…"

Apart from those who did not feel the need to talk to anyone about this problem, there are others who resort to YouTube and Google to help them find solutions to their everyday problems with digital texts. For example, Riley explains that:

"If there is something I don't know like I have to use a particular software like I need to do something on excel or like now I'm taking a lot of programing classes and it is so hard. If I have to learn something specific, I watch videos.. I mean YouTube is a very good friend of mine." Resorting to the internet to help find tips and tricks that remedy digital texts challenges has been proven to be very helpful to some of the international students. Moreover, students in the Sciences and other departments who have particular software tend to use these search engines to help them navigate these applications. In addition, others stick to grapevine communication as a way of

dealing with the challenges associated with the use of digital texts. Students admitted that they resorted to sharing their challenges with friends and older students who are most often also international students in their departments. Sometimes, by sharing with fellow international students, tricks that have been tested by other students are shared, and some problems are solved. Even though students admitted that they do not always find solutions to their problems, they explained that talking to their fellow international students who know, share and understand their struggles makes them feel good, as one student explained: "I spoke to a friend who is also an international student but it everybody is on a moving train.. In the moving train, everybody acts like they have got their shit together"

4.4 THEMATIC ANALYSIS OF INTERVIEWS

In the analysis of interview data, I looked at the 15 interviews together as a whole and noticed some similarities and differences that are present in the data collected. Although international students are very different from one another, in the interviews, there are some similarities that cut across their responses. These similarities have been categorized into themes to enable understand the phenomenon under study. The themes I explain here are previous experience and the use of digital texts, how international students learn to use digital texts, previous experience and preference for digital or printed text and converting digital text to printed text as an alternative

4.4.1 Previous experience and the use of digital texts

An important element of this study was to find out how much technology international students had been exposed to prior to their education in the United States and the extent to which technology was incorporated in their previous educational experience in their home countries or wherever it is that they might have attended school. Research reviewed showed that in African countries, technology used in education is very minimal or in some extreme cases non-existent.

The reason for the minimal use of technology in education are limited access to internet, the lack of stable electricity, and the lack of resources to provide digital readers for students (Adam 2003; Asunka, 2008; Eicker-Nel & Matthee, 2014). It is very interesting to note that international students who were interviewed confirmed this to be the reality for most international students. The majority of students interviewed said that printed text was the most used form of text in primary and high school. This means that in the formative years, most international students did not have access to digital texts in school. For those who had their undergraduate education in their home countries, they were somewhat exposed to digital texts. Even though there was exposure to digital texts, most students interviewed confirmed that it was very minimal and printed text was still the most widely used form of text. In other words, international students are not used to the advanced level of technology that they experience in U.S. colleges because the system in their home countries is far different. Some of the students admit the use of technology in education is more advanced in these quotes:

"Over here at UTEP, it's more advanced. I think. Getting to learn how to use Blackboard, trying to meet up with deadlines, then everything is done online. You submit your assignments online, your notes are online, assignments are done online, so it is quite different, nothing is never really printed except the professor likes printed format.."

"The use of digital texts in Nigeria is not as much as it is here"

From the data collected, it can be inferred that previous experience with digital texts is an indicator of how international students use digital texts and how comfortable they are when they use digital texts. Moreover, an international student who has used digital texts and has become acquainted with digital texts will love to use digital texts and have fewer challenges with digital texts as compared to an individual who has had no exposure to digital texts at all. Students

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confirmed this when asked whether they believe that their past experiences with digital texts have had an effect on the way that they have adjusted to the use of digital texts in the university, they agreed that if they had been exposed to the digital earlier on their educational career, they would have mastered the use of digital texts and the challenges that they would have to face would be a whole lot less than what they have to deal with now. For example, a student explains how easy it is to adjust to the frequent use of digital text in the United States because they had prior exposure to it.

"Yes, if you have never seen it, you would not know. Because I have that background, it is better and easier"

In terms of struggle with digital texts, international students who had been exposed to digital texts previously, are much more conversant with digital texts and have come to know and understand what one has to do to be able to enjoy the use of digital texts. This does not mean that these students do not have any challenges when using digital texts but rather, they are able to use it if they cannot have access to printed text, which is the preferred and most loved form of text by international students. For example, Mills and Richard explained that due to their experience with digital texts previously, they have come to know ways in which they can use digital texts and get the best results. Mills said:

"Develop love for e-book. These days technology is finding ways to curb issues with eyes, headache, etc. There is dark mode that helps. Another main issue with digital texts is distraction so you can disconnect yourself from the internet to be able to use it to your benefit."

Richard's previous use of digital texts had exposed him to the various advantages that one enjoys with digital texts such as portability, reliability and easy accessibility.

Because of frequent use, they discovered ways to use digital texts for optimal results. Richard and Mills even went ahead to share tips that he uses when using digital texts:

"Instead of flipping through the e-book, you can make the Adobe Reader read it for you while you listen."

After comparing previous experiences with the experience in the US college that international students are currently enrolled in, international students used language like steep learning curve, enlightening experience, more advanced, out of my comfort zone, learning experience and many more to describe their experiences. This means that the reason why they describe the experience that way is because this experience is a deviation from their norm or what they are used to. International students have to learn completely new things that they are not familiarized with when they use digital texts, whereas with printed text, usage does not require any special skills or strategies because it is what they are used to and have used for a long time.

Another reason why previous experience means ease of use with digital texts is because most international students interviewed made mention of the fact that they were not introduced to applications like Blackboard prior to coming to the United States. Because of this, they did experience challenges with the use of Blackboard when undertaking their TA duties. For example, Grant explains:

"The first time I use Blackboard, I had to record some grades, but I did not know where to even begin and, I spoke to a friend, who told me that the professor had to add me on Blackboard as a TA…"

Because change is hard, international students have to constantly deal with the hurdles of adapting to technologies that are new and unfamiliar, in addition to many other forms of cultural adaptation. This means that to fully understand the challenges of international students with digital texts,

attention has to paid to their past experiences with digital texts. International students' experiences with digital texts affects their adaptation to digital texts and their comfortability using it. Preference for a particular form of text is just a matter of convenience, accessibility and comfortability.

4.4.2 How international students learn to use digital texts

It has already been established that most, if not all international students have little to no experience with digital texts prior to their coming to the United States. It is also a known fact that most international students use digital texts as both students and instructors as most of them are teaching assistants. Because of this, most international students find ways to adapt to the more advanced use of technology in education that most universities and colleges in the United States have. Through data collected, I have encountered ways in which international students learn how to use digital texts and how successful the approaches that they use are. The two main ways in which international students learn to use digital texts are self-help and collaboration.

Based on data collected, one of the main ways that international students help themselves when it comes to digital texts is figuring things out on their own, also known as self-help. The majority of students interviewed for this study explained that they get a hang of the use of technology by exploring while using the text. Those who were teaching assistants also explained that they learned how to use Blackboard while on the job and exploring things on their own. Responses from these students indicate that they learn how to use digital texts on their own with no external help. Students from the Sciences who use software specific to their courses also learn using what I would call "self-research." Self-research is figuring it out one's own and also enlisting search engines such as Google or YouTube when faced with difficulty. Students who had a little exposure to digital texts may find self -help less strenuous as compared to those who had not been

introduced to digital texts previously. This is what students had to say when asked to explain how they learned to use digital texts:

"If I am struggling or there is something I do not know how to do, I usually watch YouTube videos and they help a lot. I mean YouTube is a really good friend of mine"

"I usually use the internet when I am dealing with challenges. Like when I am using Word or Excel and I do not know how to do something in particular. I use Google. If it is very complex, I use YouTube and just follow the video. That helps me a lot."

Another means through which students learn to use digital texts and overcome challenges when using digital texts is through collaboration. International students often turn to their cohorts, colleagues or friends and sometimes instructors when they struggle with digital texts. Sharing struggles and difficulties with friends was the number one way that most international students figured out ways to figure things out when using digital texts. Students who were older usually gave younger students tips on how to explore digital texts with less difficulty. It is interesting to note that most international students felt comfortable talking to their fellow international students about their challenges rather than U.S. American students. A few of the students interviewed also mentioned having sought help from professors which they had taken classes with. In administering their duties as teaching assistants, most international students also seek help from the professors that they have been assigned to work with. Riley explained:

"I also ask other friends, ask people, older students when I need help."
Other students shared the same sentiments as Riley and admitted to having asked other students for help. Tony admitted that even though it is beneficial to ask for help from peers, he mentions that sometimes it is better to not ask for help because it makes you feel like the only one who has

not figured it out or is struggling. To avoid that embarrassment, he just keeps his struggles to himself.

"I spoke to a friend who is also an international student but it everybody is on a moving train.. In the moving train, everybody acts like they have got their shit together"

Even though most students chose self-help or collaboration as a way of finding solutions to the difficulties they face when it comes to digital texts, students like Tom found that it is unnecessary to talk to anyone about challenges that arise when using digital texts. He admitted that it was just a new environment that he needed to adapt to and there was nothing that could help unless he adjusted to it.

"Why should I? I just feel like I just need to adjust. It's a new environment and I just need to adjust…"

4.4.3 Previous experience and preference for digital or printed text

Another interesting theme worth discussing in this study is the way that previous experience dictates what form of text international students prefer to use when studying. Previous experience for most international students is that they were exposed to printed text and used more of printed text more than digital texts. Even though some of the students interviewed did mention that they were exposed to digital texts prior to their coming to the United States, they admitted that the use of digital texts was very minimal and later in their educational careers. For example, Tony and Mario stated when asked about their previous experience with digital texts that they were not exposed to digital texts until later in their graduate school career.

"I started my graduate school in Nigeria, and I worked with a lot of journals and so most of my study materials for my research was online." Tony stated this as his response.

Mario answered "In my university, the professor will print and sell copies at the department, so everything was hardcopy. However, in graduate school in Ghana, I started using my desktop for reading and also some professors started letting us use soft copy in class"

It is quite interesting to note that international students' preferences are based on their experiences with both digital and printed text. Those who had been exposed to digital texts in their high school and undergraduate classes said that even though they had challenges with using digital texts sometimes, they preferred using that over printed text. When asked why they preferred digital texts to printed text, they explained that digital texts afford some advantages that printed text does not. Some of the advantages of digital texts include portability, reliability and durability.

"Reading online is easy because when I am reading I can copy and paste a line and find information on it easily. If I am to use printed text, I have to use the library or find another book to obtain extra information. Digital text is very reliable and that is why I will go for it over print. Students described that digital texts are much more portable as compared to printed text as it allows one to have several books on one device without being heavy to carry around. This is what Richard had to say when asked why he preferred digital text to printed text

"For me, I prefer e-text because it is portable compared to having voluminous books which sometimes scares me. I may have 1000 books on one device which I can access at any time." Carrying voluminous books from home to class is a hassle that most students did not want to deal with. Also, another student explained that digital texts is a more durable alternative to printed text as it can exist for ages without the risk of getting destroyed and can be accessed at any and every time. These are some of the reasons why some students prefer digital text.

However, students with little or no experience with digital texts tend to prefer using printed text because it is what they are used to and what they are most comfortable using.

Comfortability with printed texts comes from having used for a long time and the simplicity that it affords. Some students explained that recall and comprehension is better with printed text than digital texts and that is the reason they prefer to use digital texts. For example, Nancy explained that she would rather read from paper than read online because she feels she understand better when she uses printed text. Others explained that with the specific courses that they are reading they can only use printed text because of how complicated it is to use digital texts. For example, Alice, a graduate student from the Mathematics department explained that:

"If I am doing something Math related, I prefer to use print text because I am the kind of person who likes to write a lot, which is something you do a lot when you are studying Math. Because how can you write Math formulas in an e-book?"

There are some students who had minimal exposure to digital texts who said they preferred digital texts because they have been introduced to it and have seen firsthand how much digital texts makes life easy. Grant explained that with digital texts, information is spread much easier and faster than when using digital texts. Two other students said they preferred digital text even though they had not been exposed to digital text previously and did not really know how to use it effectively. Aside these two students, it can be said that there is a positive relationship between previous experience and preference. International students' experiences with both digital and printed text dictates their choice when it comes to picking a preference between the two forms of text. As one of the participants Tony explains, "you become what you interact with the most."

4.4.4 Converting digital to printed text as an alternative

Given that the environment in U.S. colleges requires one to be comfortable and well versed in the use of digital texts, most international students tend to limit their use of digital texts whenever and however they can. The use of digital texts in U.S. colleges is more advanced such

that almost everything is done online, but most of the students interviewed try to limit their use of digital texts because it doesn't give them the results that they require, or they are simply uncomfortable with using it. Some students admitted, during the interviews, recall and comprehension are affected when they use digital texts. To explain further, they find that when they use digital texts, they are unable to understand and recollect what they have studied. Since the goal of getting an education is to remember and apply information learned, it is quite futile if one cannot comprehend and recollect what has been studied.

Comfortability is a big factor when it comes to the use of digital texts because students have very busy and strenuous schedules so they would want to feel comfortable when engaging with the text to avoid undue stress.

"For me, it is not that I have a particular challenge, I just find it uncomfortable to use digital texts. The process with using digital texts is just too complex and uncomfortable."

When students are not comfortable in their academic career, it can take a toll on their academic performance and in some cases, their general well-being. Therefore, international students take precautions to avoid situations that cause them to feel uncomfortable or to simply not enjoy the process of being in school.

To avoid this discomfort, I found that most students interviewed try to convert digital texts to printed text by printing it out on paper. This is a common way for international students to avoid digital texts as much as possible.

"I will always end up printing. I want to be able to underline and have the text around me. I want to be able to detach the pages as I get done with them. It is just my thing. I want to be able to squeeze and throw them away when I am done. And plus, it is even easier to read on paper."

"I always print some portions out when giving digital texts because I want to be able to underline"

Even though about ten of the students admitted to printing digital texts out as part of their day to day activities as students, students who enjoyed using digital texts also admitted to printing out digital texts when they have a quiz or exam that they need to prepare for. For example, Mills admitted that when he has a test or exam, he likes to print out his study materials.

"I prefer digital texts unless I have a text or exam I need to prepare for and I have not really given myself time to, that's when I will print it out."

Other students like Alice explained that the course that she is reading does not permit her to use digital texts, so she ends up printing her study materials. Since she is studying Mathematics she feels that Mathematics is learned better when one can interact with the text, even though she prefers using digital texts because of the portability it affords.

International students have therefore found a way to reduce the amount of digital texts that they deal with in school. However, there are times that digital texts cannot be avoided. For instance, when professors ask students to post discussion posts on Blackboard, submit assignments online, international students have no option but to engage with digital texts. In the cases where it is not a must to engage with digital texts, international students print to avoid using digital texts. It is therefore important that international students learn how to properly engage with digital texts because it cannot be avoided entirely. Since international students are fond of converting digital texts into printed text, it is expedient to note that this means students will print more and this comes at a monetary expense. International students who have to print are more likely to use more money for printing than the average student who can engage with digital texts with no problems or issues. This is important factor to note because even though in this particular institution where students

were interviewed, print credit are allocated to students based on the number of credit hours taken, international students are more likely to exhaust these print credits and would have to top up more to be able to print. This can be a disadvantage because in cases where a student does a lot of printing, this can be an expensive lifestyle to keep up with as a student. Aside monetary expenses, the environment is also affected tremendously when students print their texts.

4.5 APPLYING CRITICAL CONSCIOUSNESS THEORY AND CRITICAL RACE THEORY

Understanding international students' previous lived experiences is the first step in achieving critical consciousness of the problem, according Paolo Freire's critical consciousness theory. The background of international students is very instrumental in understanding their strengths and weaknesses. Drawing attention to the problem by discussing the problem with the people involved creates an awareness that is deeply understood and provides a basis for better solution to the problem. Freire believes that the culture of silence enables uneven distribution of power and oppression in educational institutions. The uneven distribution of power in this case is evident when time and effort is not put towards understanding international students' previous experiences in education and how the experiences affect their adjustment into educational institutions that are very different from what they are used to. From the data collected during interviews, it is evident that there is a lot of information about this problem that is not available to educational institutions because of the lack of awareness. The only way to alleviate international students' struggles with digital text is listen to their stories and understand their perspectives. Another way to reject the structures of oppression and domination that exists is to reject the stereotype that all students are the same and can use digital text without difficulties. Aside the disadvantages that most people who use digital texts encounter, international students have greater difficulties with digital texts that should not be overlooked. Freire's critical consciousness theory

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which is aimed at remedying social injustices in educational institutions is called critical pedagogy. Critical pedagogy delves deep into critically scrutinizing habits, myths, clichés, opinions and understanding root causes, social contexts, ideologies and the consequences of these in educational institutions. This study does a good job unearthing international students stories and struggles to find the root causes of the challenge with digital text. According to Freire, this is an important step in solving the societal power imbalances and removing oppressive structures.

Also, this study brings to the limelight the experiences of international students in their various home countries. It also highlights the heterogeneity of international students in the sense that exposes the differences between international students from African countries and international students from other countries. Even though the study only focuses on international students from African countries, it can be inferred that international students from other developed countries may have different experiences with digital text. Since international students from Africa are mostly black, highlighting the experiences of these students and exposing the system of ignorance that is embedded in the academic society becomes to a higher extent an issue of addressing racism. As one of the tenets of critical race theory, this study does a good job challenging the dominant narrative that all students can use digital text without difficulties.

The next chapter of this study will provide a summary of the goal of this study, a discussion on the findings of this study, an analysis in line with the theories on which this study is grounded and provide recommendations to the challenges faced by international students when using digital texts. The limitations of this study and recommendations for future research are also explored.

Chapter 5: Addressing the challenges of international students when using digital texts

5.1 RESEARCH SUMMARY

This research examined critically the challenges that international students from African countries face when navigating between digital and printed text across various disciplines in a university in the United States. This study drew from international students' previous experiences with both forms of text in their home countries and how the transition plays out for these students in the U.S. Technology in education has become a very fast-growing phenomenon, especially in first world countries where access to digital readers and other mediums which make technology in education easier are very common. It is very important to examine how African international students handle the transition from a place where the use of technology in education is very minimal or non-existent to a system where technology in education is more or less becoming the norm.

Literature reviewed for this study showed that indeed technology is not used much in education in most African countries. Asunka (2013) in his study showed that the usage of digital texts in the University of Ghana is not very common. This study shows that instructors in Ghanaian universities would rarely recommend course materials in electronic forms, when print alternatives are available. The same can be said for countries such as South Africa and Nigeria (Eicker-Nel & Matthee, 2014). Technology is not integrated in education in African countries because in Sub Saharan Africa, it is estimated that only 1 in 250 people have access to the internet as against the global average of 1 in 15 (Asunka, 2008 citing UNESCO Institute for Statistics, 2007). This means that with fewer people having access to the internet, the use of digital texts and online learning in educational institutions depends on the available information and communication infrastructures in place. Other reasons include the lack of stable electricity in most African countries and the

expensive cost of digital readers. Juxtaposing the educational system of the United States with that of African countries, the difference is very prevalent. Educational institutions in the United States have successfully incorporated technology enabled instruction in their academic work because it has mainly helped in expanding access to quality higher education (Asunka, 2008). The growing presence of various electronic devices on which students can read is also another reason why digital texts are very common. Keeping in mind the differences between the U.S. and African countries in terms of education, and the increased influx of international students in the United States, there is the need to explore the challenges that arise due to the differences.

This study is deeply rooted in my experience with digital texts as an international student from Ghana. From my own experience as an international student in the United States, adjusting to the use of digital texts in the form of e-books, online applications such as Blackboard, in the educational system was challenging for me. The shift from using printed text in Ghana to the use of digital texts in the United States was a big change. I also observed that other students also shared similar challenges with me when it came to the use of digital texts. My experience and the experience of other international students sparked an interest to examine this issue at a deeper and more critical level. Against this background, I decided to explore the challenges of international students when using digital texts, the communicative strategies used by international students when using digital texts, and the preference of international students between digital and printed text.

5.2 RESEARCH FINDINGS

This part of the chapter provides a brief summary of the findings of this study. Findings are discussed based on the research questions that the study sought to provide answers to.

1. What are international students' previous experience with digital texts and some of the challenges faced by international students from developing countries when exposed to digital texts?

The findings for this study suggest that most international students had minimal exposure to digital texts before pursuing degrees in the United States. Some of the students interviewed had no exposure to digital texts in their home countries. The main form of text that international students used and are familiar with is printed text. Because of this, most of the international students interviewed described the use of digital texts as uncomfortable, steep learning curve and a hard process. Most students admitted that their main challenge was from the fact that it was something new that they had not worked with before. The other challenges students face when using digital texts is eye strain, poor recall and comprehension and headaches.

The students interviewed who had a little exposure to digital texts described the level of digital texts used in their classes as way more advanced than what they had been exposed to. Aside having to use digital texts as students, most students explained that some of their challenges came from the fact that they had to use digital texts as teaching assistants. For example, most expressed the difficulties they had to deal with when using Blackboard as teaching assistants. Students in the Sciences also discussed difficulties with program specific software they needed to use in their programs.

2. What are some of the communicative practices used by international students from African countries when transitioning from print to digital texts?

Even though students definitely encounter challenges that usually make it hard for them to use digital texts, many of the participants interviewed highlighted that nothing can be done to avoid digital texts completely. As such, some of them have come up with techniques that make using

digital texts much less complicated. Printing or turning digital texts into printed text was the number one technique mentioned when participants were asked to provide some strategies utilized when using digital texts. By printing out everything, students are able to interact with the text by underlining, writing and highlighting, an advantage that they believe is not afforded on digital texts.

3. Do international studies from African countries prefer print or digital texts?

When asked for preference between the two forms of text, some students admitted that they preferred digital texts even though using digital texts comes with some challenges. The choice was based on some of the advantages that digital texts affords such as portability and easy accessibility. It is interesting to note that those who had previous experience with digital texts were among those who choose digital texts over print. Those who said digital texts added that in the case where they had to prepare for an exam or a quiz, they would choose to use printed text. Majority stated that they preferred printed text because it is what they are used to and using printed text requires little to no special skills.

4. How do international students deal with challenges that arise from using digital texts? (The expressive and prescriptive practices of international students).

Some of the students interviewed admitted that they do not take any steps to be able to deal with the challenges associated with the use of digital texts. When asked why they do not share their challenges with anyone else, some international students explained that they did not know who to inform and how sharing the information about these challenges can be beneficial. Others resorted to discussions with friends who were also international students in times of difficulties. Even though they do not always find solutions to their problems, they enjoyed discussing challenges with individuals who were in the same plight and understand how they feel. Resorting to the

internet to help find tips and tricks that remedy digital texts challenges has been proven to be very helpful to some of the international students.

5.3 EXPLAINING FINDINGS THROUGH THEORETICAL FRAMEWORK

5.3.1 Paolo Freire's critical consciousness theory

As Freire argues there are structures of domination and oppression that exists in institutions such as schools, family, etc. and conscientization about these issues and change are the ways to create a change in these issues (Freire, 1970). This study first creates awareness of international students' challenges by focusing on students' lived experiences with both printed and digital texts. Using the Paolo Freire critical consciousness theory as framework, there are three principles on which critical pedagogy is based. These three tenets are reflection on individual's culture or lived experience, development of voice through a critical look at the world and society, which is rooted in dialogue with others and transforming the society toward equality for all. The reflection of culture and experience was achieved in this study by placing emphasis on international students previous experiences and highlighting where they are from. Highlighting their previous experiences displays the role culture and experience has in understanding this issue. Students are not the same and as such some students require special attention and needs. Thus, reflection on culture and lived experiences exposes social inequality and rejects the norm that all students have the ability to use digital texts without any challenges because digital texts is popular in U.S. colleges. The development of a voice through dialogue is emphasized through how common these challenges are among international students from various African countries. Through this commonality, the social inequality in the educational institution is emphasized resulting in a call to change the narratives. Paolo Freire's critical consciousness theory was beneficial in uncovering

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student's experiences as well as what needed to be done to improve the now experiences of students with digital texts.

5.3.2 Critical Race Theory

According to Kohli (2012), Critical Race Theory (CRT), developed in the 1970s in the field of law, was used to draw awareness to racism by highlighting the experiences of people of color. Since this study focuses on international students from African countries who are people of color, the study emphasizes on exposing structures in place that oppress students of color consequently having an effect on the standard of education. The goal of this study is to challenge the dominant narrative that all students are able to use digital texts without any struggles. This study requires that international students are taken into consideration when decisions are being made about educational materials that are used in and outside the classroom. Critical race theory was beneficial in this study because of the value it places on individual's experiences and the power of story to provide in-depth understanding and eradicate social inequality.

5.4 IMPLICATIONS OF RESEARCH FINDINGS

The research findings of this study have shown that most international students lack prior knowledge and experience with digital texts, and this affects the way that digital texts is used by international students. The absence of this knowledge and experience puts these students at a disadvantage because the use of digital texts in US college is at a more advanced level. Aside from not being able to use digital texts optimally in their day to day activities as students, international students have to deal with the various disadvantages that people deal with when they use digital texts such as eye strain, headaches and light sensitivity (Jeong, 2012). Research states that aside from eye strain and headaches, digital texts readers explained that reading on digital readers was more time consuming than printed text since there are a lot of distractions that hinder concentration

and slow down the reading process (Liu, 2005). Therefore, international students' burdens with digital texts are far greater than that of an average student.

Aside from not being well equipped to use digital texts as students, research findings also show that most international students have to learn how to use digital texts for their duties as teaching assistants. A lot of the students struggled with completing simple tasks such as grading and uploading study materials on learning management systems, when asked by the professors that they assisted in their duties as teaching assistants. Their inability to incorporate technology into their instructional duties is a further indication of international students' lack of knowledge in using digital texts. International students in this study sought help from colleagues and the internet on how to use digital texts in their duties as teaching assistants.

Moreover, this research study also brought to light that orientations do not provide knowledge and basic technological skills that students need to be able to function in an educational system that uses a lot of advanced technological systems. When asked whether international students had received tutoring on how to use digital texts during orientation, all participants answered that they had not received any form of training. This means that international students are left without help, to figure it out on their own. Not having anyone to understand and help with international students' struggles with digital texts causes them to be uncomfortable and not enjoy using digital texts. In the cases where students can avoid using digital texts, they do so by transforming digital texts into printed text by printing PowerPoint slides, chapters of e-books, etc.

There are several ways that this issue affects other students who do not identify as international students. The issue of international students not being able to interact with digital text without difficulties goes beyond the borders of being from a place where digital text is not popularly used. Class disparities or economic standing of students and can also dictate which text

students have access to and which they prefer. People from backgrounds where they can afford digital readers and have access readily to digital text are more likely to get comfortable with digital text and prefer it to printed text. Those from under-privileged backgrounds who may not be able to afford digital readers may prefer to engage with printed text because it is simpler to use and readily available to them. Aside class disparities, this issue also borders on the lines of generation. Baby boomers and generation x are most likely to want to engage with printed text because that is what they are used to. Millennials and generation z are more comfortable using digital text because technology is known to have been introduced during these times, making them the most exposed among all generations. Therefore, addressing this issue does not only improve things for international students from African countries, but also all students who identify as members of the above-mentioned groups and beyond.

5.5 RECOMMENDATIONS

Now more than ever, it has become important to address students' difficulties with digital text because all educational institutions have switched to online instruction as a mitigation strategy aimed at reducing the spread of the corona virus (COVID- 19) in 2020. Because of this, students who may have struggles with digital text are under undue pressure to adjust to this big change. Many believe that the shift to online learning will be here for a long time as the spread of novel virus which hit many countries in the year 2020, keeps increasing. Understanding the challenges of international students when using digital texts is not the only thing that this study seeks to accomplish. Providing recommendations that will alleviate international students' struggles with digital texts is an important aspect of this study. From the study, the main reason that international students are facing challenges when using digital texts is because they do not have previous exposure or experience with digital texts. Without previous experience, digital texts are basically

somewhat new to international students. To give international students a head-start in U.S. colleges, trainings that provide technological skills and experiences for international students are very essential. These trainings are supposed to be built with special needs of international students in mind (Patcha, 2018). Having the needs of international students in mind will help personnel who are in charge of these trainings structure instructional material towards the needs of international students and also engage in active learning. These trainings can be scheduled during orientations, which are most international students' first point of contact. These skills can also be habitually reinforced within the first semester of arrival. Students interviewed mentioned that some form of trainings in the beginning of their degrees would have been helpful in providing skills that would have helped make the use of digital texts a lot easier. Also, making video modules available online for students on how to complete simple tasks when using digital text would also be helpful in reducing international students' struggles with digital text.

One important recommendation for pedagogy is the need for professors to use a blended-learning approach which uses both printed text and electronic text to help international students to better navigate the educational system in the U.S. Since the influx of international students into U.S. American universities has reached an all-time high and is still increasing, professors should take into consideration international students when selecting course materials in the form of textbooks for their classes. Professors should make sure that electronic textbooks are also available in printed form to enable international students to make the choice as to which one they prefer. Students, especially international students will learn to appreciate a combination of printed text and digital texts, even though they might always prefer printed text over electronic text (Singer & Alexander, 2016; Dobler, 2015; Falc, 2013).

Finally, printing allowances of international students should be significantly higher than that of U.S. American students since international students are more likely to print out e-books or slides when they can to make reading easier and more comfortable for them. In the case where printing allowance is allocated for every student, as it is done in this particular U.S. college where the study took place, international students interviewed complained that funds for printing are hardly enough since they tend to print more than the average student.

5.6 RESEARCH LIMITATIONS

It was challenging to be able to reach international students in the four-year college setting because there are not a lot of international students that were open and willing to take part in this study. International students are minorities in this educational institution and most others in the United States, so the decision to focus on international students from African countries further reduced the population of the study. Using a snowball sampling technique, I was able to interview 15 international students for this study. Because of the number of participants interviewed, the sample size does not fully represent all international students' experiences. However, this study provides a deeper understanding into the experiences and challenges of international students, particularly those from Africa, when using digital texts. The small sample size allows for a case by case interpretation of the data collected.

Another limitation is that previous experiences of students interviewed is not an indicator that all students from African countries have similar experiences. Students interviewed were from the following African countries: Ghana, Nigeria, Kenya, South Africa and Cameroun. Data from participants from these five countries is not an indication that all other students from African countries have the same experiences. Since there are over 50 African countries, experiences and exposure to digital texts may differ among international students. However, the data collected from

students from these countries do suggest that printed text is the most common form of text used in these African countries.

Regardless of the limitations stated above, this study was successful in understanding students' previous experiences and challenges with digital texts. Findings will be beneficial to both students and the leaders of educational institutions.

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Appendix

Where are you from?

Undergraduate or Graduate student?

How long have you been a student at UTEP?

What was it like studying in your home country?

Tell me more about what it was like studying in your home country?

In what forms were the study materials you used?

Were you using more of print or digital text in your home country?

What have been your experiences in using e-text here at UTEP?

If hard /easy? How hard/easy is it? (Potential follow-up question)

What are some of the things/challenges that make it hard for you to use electronic text?

How do you deal with the challenges that arise from using digital text as an international student?

Are there any steps you take as an international student to provide solutions to these challenges?

Like talking to somebody, an organization, etc. (Follow up question)

What strategies do you use when reading digital text?

What are some of the things you do to make it easier for you to use electronic text?

Do you think you could ever get used to using digital/e-text?

Do you prefer reading on paper or reading on a screen?

Vita

Nadia Boahemaa Kyeremeh was born on December 1, 1992 to Henry Kwabena Kyeremeh and Grace Kyeremeh. She graduated from Wesley Girls High School in Ghana in the year 2011. She entered University of Ghana in fall of 2011, and graduated in Spring 2015 with a Bachelor of Arts in Psychology and English (Second Class Honors). She completed her national service as a front desk executive in the year 2016.

In the spring of 2018, she enrolled in the University of Texas at El Paso to pursue a Master's in Communication. While pursuing a master's degree in Communication, she worked as a teaching assistant at the Communication department. After graduation, Nadia will pursue a doctoral degree in Communication at the University of North Dakota.