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Investigating the Impact of Information Communication Technology (ICT) Illiteracy Levels on the Academic Performance of First-Year Students: A Case of Emmanuel University

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ABSTRACT

Information Communication Technology (ICT), gives University students a better understanding of how an academic work should be presented and submitted for assignments, exercises, examinations, research work and others. The impact of ICT on students' academic performance in early stages of University Education includes benefits like developing the ability to use the University's academic standards of writing or presenting class work or assignments, seminars, and also research-related presentations. The benefits of using ICT outweigh its challenges once one acquires the skill, though society may view the use of ICT as unattainable. This study investigated the impact of Information Communication Technology (ICT) illiteracy levels on the academic performance of first year students at Emmanuel University. Based on SDT, ICT Engagement Theory, it is suggested that students' interests, positive social interactions, autonomy and competence related to ICT increase their intrinsic motivation. This enables them to challenge themselves with self-driven technology use, which can generate conditions conducive to optimal academic performance. Results of the study revealed that lack of knowledge in ICT affects the academic performance of first year university students in many ways. The study recommends that universities should focus on adequately orienting or training first year students in the use of various types of ICT and encourage that they keep practicing the skill to become more skillful and experienced.

INTRODUCTION

There has been a revolutionization in the way people live, work and communicate due to Information Communication Technology (ICT). In the modern education sector, universities rely heavily on ICT to deliver course content, conduct assessments, and communicate with students (Aziz, A., & Naz, A, 2019). Even though ICT has become an integral part of modern-day education, many first-year university students still struggle with basic ICT knowledge and skills. This lack of ICT literacy can have a significant impact on their academic performance and overall university extra-curricular activities. Additionally, the digital divide increases this problem, with some students having better access to technology and resources than others. ICT illiteracy among first-year students can also impact their potential for success in a digital society (Bawa, P.2016). This research paper investigated ICT illiteracy levels' impact on first-year Emmanuel University students.

Purpose of the Study

The main purpose of this study was to investigate the impact of ICT illiteracy levels on the academic performance and experience of first-year students at Emmanuel University. The study investigated the extent to which ICT illiteracy affects the academic performance of first-year students. It also determined factors contributing to ICT illiteracy among first-year students at the institution. Furthermore, the study aimed at giving

or suggesting solutions to this effect in order to minimize the impact of ICT illiteracy amongst first year students at Emmanuel university.

Problem Statement

ICT illiteracy is a growing problem among university students, particularly those in their first year since majority of them did not have a chance to learn ICT at secondary level. Bawa, P. (2016) noted that many students are unable to effectively use basic ICT tools such as email, learning management systems, and online research databases. This can result in poor academic performance, missed deadlines, and reduced engagement with course materials. Furthermore, ICT illiteracy can impact students' ability to navigate the digital world and affect their future job prospect. The expectation of Emmanuel University to students in first year is that they follow the assessment procedures of writing and presenting typed assignments in a standardized manner in accordance with the academic policy on assessment. It has been observed that most students delay to submit assignments or present their assignments with a lot of errors. This is why this study was conducted to investigate the cause.

Research Questions

The research will be guided through the use of the following questions:

1. What is the level of ICT illiteracy among first-year students?

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2. To what extent does ICT illiteracy affect the academic performance of first-year students?

3. What are the factors contributing to ICT illiteracy among first-year students?

4. What solutions can be considered to help minimize the ICT illiteracy among first-year students at Emmanuel University?

LITERATURE REVIEW

Literature review explains the literature that is available to support the topic of discussion in project research or an academic writing. It guides the writer or researcher important points that can be a source of linkage to the current ideas or new knowledge. Therefore, this section presents literature on the use, importance and general concept of the use of computers or ICT related tools in higher learning institutions. The scope shall cover the world views, African views and Malawi views on the impact of ICT illiteracy levels on academic performance of students.

Outside Africa

Developed countries such as the United States of America, Canada, the United Kingdom, and Australia, have a significant amount of literature available on the impact of ICT illiteracy on first-year university students. For example, ICT develops students' new understanding in their areas of learning (Chai *et al.* 2010). And Koc (2005) mentioned that using ICT enables students to communicate, share, and work collaboratively anywhere, any time.

Current research has indicated that ICT assists in transforming a teaching environment into a learner-centered one (Castro Sánchez and Alemán 2011). Since learners are actively involved in the learning processes in ICT classrooms, they are authorized by the teacher to make decisions, plans, and so forth (Lu, Hou and Huang 2010). ICT therefore provides both learners and instructors with more educational affordances and possibilities.

In today's technologically advanced world, information communication technology (ICT) literacy has become a crucial skill for individuals in various fields. As universities worldwide increasingly rely on digital tools and platforms, it is essential for first-year students to possess adequate ICT literacy skills. This literature review aims to explore the impact of ICT illiteracy on first-year students enrolled at any university, outside Africa, within Africa, and in Malawi. Information and Communication Technology (ICT) includes computers, the Internet, and electronic delivery systems such as radios, televisions, and projectors among others, and is widely used in today's education field. Kent and Facer (2004) indicated that school is an important environment in which students participate in a wide range of computer activities, while the home serves as a complementary site for regular engagement in a narrower set of computer activities. Increasingly, ICT is being applied successfully in instruction, learning, and assessment.

ICT is considered a powerful tool for educational change and reform. A number of previous studies have shown that appropriate use of ICT can raise educational quality and connect learning to real-life situations (Lowther *et al.*, 2008; Weert & Tatnall, 2005). As Weert and Tatnall (2005) have pointed out, learning is an ongoing lifelong activity where learners change their expectations by seeking knowledge, which departs from traditional approaches. As time goes by, they will have to expect and be willing to seek out new sources of knowledge. Skills in using ICT will be an indispensable prerequisite for these learners.

The Introduction of digital devices and technology in the modern society has brought much excitement and as well as fear. Many people are using modern technology for personal career advancement while others are using it to deceive others through fraud and many other ways. Institutions of higher learning for example receive students with different technological abilities and inabilities. As noted in the literature, knowledge in computers has imperceptibly created two major groups or classes of people; digital natives and digital immigrants (Ahn & Jung, 2016; Kirk *et al.*, 2015; Metallo & Agrifoglio, 2015; Nelissen & Van den Bulck, 2018). Whether the individual was born before or after the mainstreaming of computer knowledge, both personal and professional lives' challenges have made it almost mandatory for all persons to have some level of literacy in computer knowledge (Mohammadyari & Singh, 2015). For many years up to recent times, the use and presence of smart phones has outweighed that of laptops and desktops or iPads and Palm tops. There are many people that use smart phones every day either on personal business or academic work. Over the years, people have gradually become more confident and comfortable with smartphone technology while desktop computers assumed a secondary role, a phenomenon that is consistent with visions of the digital future (Pantic, Pentland, Nijholt, & Huang, 2007). As previous studies show, over 80% of university students are using smartphones (Akyina, Manu & Dzamesi, 2019; Manu, Akyina, Appiagyei, & Opoku, 2018; Briz-Ponce, Pereira, Carvalho, Juanes-Méndez, & García-Peñalvo, 2017; Pratama, 2017). It is interesting to note that the number of students in universities that own personal computers are much lower than those who own smart phones. This could be attributed to many factors like poverty levels versus means of earnings for parents of students. And undoubtedly, the smartphone is like a small computer that can be used to perform functions similar to a laptop or desktop computer. However, despite the promise of "ubiquitous computing" (Pantic, Pentland, Nijholt, & Huang, 2007) ushered in, partly, by smartphone technology, there is a need to sustain, if not improve, the teaching and learning of desktop computer applications among university students as this is a pre-requisite for information literacy and lifelong learning (Madigan, Goodfellow, & Stone, 2007; Yeboah, Dadzie, & Owusu-Ansah, 2017). Several studies have examined attitudes to, and confirm a shift away from, desktop computing

(Allothman, Robertson, & Michaelson, 2017; Madigan, Goodfellow, & Stone, 2007; Napoli & Obar, 2015; Tsetsi & Rains, 2017). Tsetsi and Rains (2017), for instance, conclude in their study that marginalized populations, including minority groups, less educated people, and younger people, were prone to smartphone-dependence. They aver, on the other hand, that this dependence proved itself a barrier to digital integration amongst these groups and lowered their chances of empowerment.

Social networks are spreading rapidly with millions of users, especially among young people in the EU countries. Use of social networks in the educational process can be considered a potentially powerful educational tool because today's students spend much time in online networking activities practically every day. Previous research has shown that social network Sites (SNS) "support educational activities by enabling interaction, cooperation, active participation, information and resource sharing, and critical thinking" (Ajjan and Hartshorne, 2008; Arepattamannil, and Santos, 2020; Goldsmith-Pinkham and Guido, 2013; Selwyn, 2007, Mazman and Usuel, 2010). Students today demand more independence, networking, interaction, and opportunities in their learning and some of them consider Learning Management Systems a traditional and conservative learning tool (Forouzesh, and Darvish, 2012; Oureshi, Raza, and Whitty, 2015).

The direct link between the use of ICT in students' studies has been the focus of extensive literature during the last two decades. While some scholars believe that ICTs improve the students' study habit, others do not support this view. online with the above, Valasidou and Bousiou (2005) stated that students frequently use ICT resources especially internet for their studies, and that internet has huge impact in improving students' study habits. Leuven *et al.* (2004) against this view, stated that there is no evidence for a relationship between increased educational use of ICT and students' performance. In fact, they find a consistently negative and marginally significant relationship between ICT use and some student achievement measures. Still, in support of Valasidou and Bousiou (2005) Abdulla Y. Al-Hawaj, Wajeeh Elali and E.H. Twizell (2008) stated that ICT has the potential to transform the nature of education: where and how learning takes place and the roles of students and teaching takes place and the roles of students and teachers in the learning process. Karim and Hassan (2006) also noted the exponential growth in digital information has changed the way students perceive study and reading and in how printed materials are used to facilitate study. Based on the extended use of ICTs in education, the need appeared to unravel the myth that surrounds the use of information and communication technology (ICT) as an aid to teaching and learning, and the impact it has on students' study habits and improvement to learning. Therefore, the present study aims to examine the impact of ICT on university students' academic studies.

Within Africa

Recent studies in Ghana were concerned with students' competency in ICTs (Buabeng-Andoh & Issifu, 2015; Dery *et al.*, 2016; Nketiah-Amponsah *et al.*, 2017); and perception of stakeholders towards ICTs in education (Edumadze *et al.*, 2017; Gyamfi & Gyaase, 2015; Sarfo & Ansong-Gyimah, 2010). While studies on students' ICT competencies focused on students' competencies in a cross-section of computer applications such as email and word processing, the participants of these studies were mostly experienced university students. This study focused on first-year students of a public university recognizing the peculiar needs of first-year students (Gontshi & Owusu-Ansah, 2015), thus providing further evidence of the need to provide targeted tuition in computer applications to this group of students. According to Ghana Government Policy on ICT in Education In 2001, Ghana saw the need to incorporate ICT into the main educational stream in order to be globally relevant in this 21st century. This led to the first workshop of all sector stakeholders 'under the consultative process for the Ghana ICT for Accelerated Development (ICT4AD) Policy in 2001'. A number of issues were discussed pertaining to how ICT could be integrated and strengthened in pre-tertiary educational institutions across the country in an equitable manner. Following that workshop, several other meetings were also held. All these subsequent meetings and workshops were all geared towards developing a resilient policy framework in guiding ICT implementation across all educational institutions throughout the country. It is not until 2006, when the actual draft document of the policy framework for ICT was developed. In the same year, a number of sector stakeholder consultations were held leading to its promulgation in 2009 by the then Minister of Education (Ministry of Education Ghana, 2015). The main aim envisaged by the policy framework was: "To enable graduates from Ghanaian educational institutions – formal and non-formal - to confidently and creatively use ICT tools and resources to develop requisite skills and knowledge needed to be active participants in the global knowledge economy at all times" (Ministry of Education Ghana, 2015). Three pillars formed the ultimate 'strong hold' on which the entire ICT policy was developed. These are; "ICT as a learning and operating tool; ICT as integrated into the teaching and learning and ICT as a career option for students" (Ministry of Education Ghana, 2015). In this way, students are provided with the requisite skills that will make them successful in this 21st century workplace; by this they have the opportunity to find jobs or become entrepreneurs in the field of ICT (Ministry of Education Ghana, 2015). However, in Africa, for example Ghana, much has not been done by the government and policy makers though they have acknowledged the tremendous benefits ICT could bring to the nation as evident in ICT policies in education. Aside the government's efforts in providing ICT resources to schools, other institutions

and donors have also supported by supplying ICT resources like computers, laptops, internet and other associated materials to senior high schools. For instance, China, in 2016, spent 400,000 Ghana Cedis (approx. USD 100,000.00) in renovating an ICT laboratory for Ejisuman Senior High School (SHS) in the Ashanti Region and, also subsequently, donated fifty brand new computers to the school (Malik, 2017). KPMG, a very famous auditing firm in Ghana also renovated a classroom into a state-of-the-art ICT laboratory and presented twenty computers to the Dzorwulu Junior High School in the Greater Accra Region (Nyavi, 2016). MTN Ghana also partnered with Huawei to provide a 200-seating capacity ICT facility stocked with reading materials and twenty computers to the Juaben SHS at a cost of GHC 602,000. The facility also has free internet connectivity to boost research and teaching (Adogla-Bessa, 2016). A study conducted to investigate the 'Status of implementation of the ICT Curriculum in Ghanaian Basic Schools' revealed that technological resources for teaching and training of students were "woefully inadequate" (Acquah, 2012). The study indicated that Projectors (89.3%), Internet Connectivity (79.8%), Computers (77.4%), and ICT Laboratories (70.2%) were some of the most inadequate ICT resources in Ghanaian schools. Another study conducted at a senior high school within the Lower Manya Krobo District indicated that there were few computers available for students for studying ICT. Out of 140 students involved in the study, 137 of them affirmed that they do not have sufficient computers for studying ICT (Adebi-Caesar, 2012). Commonly Used Computer Applications in Schools and Universities There are many educational and non-educational applications that are available at the disposal of students to support their direct learning and indirect learning activities (Patterson & Patterson, 2017). Examples of these educational applications include but not limited to Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Word lens, Molecule, Electronic Mail (e-mails), and Statistical Package for Social Sciences. Whilst non-educational software which could also be used for entertainment and other activities other than education include but are not limited to WhatsApp, Facebook, Twitter, computer games and Instagram, Mensah (2017) asserts that students used variety of computer applications for educational purposes and leisure. However, he added that the Ghanaian students preferred leisured-based applications to education-oriented ones. Further, he indicated that the most frequently used web-based applications were Facebook, online games, music downloads, video downloads and porn sites with 99%, 56.1%, 96.9%, 87.1%, and 24.1% prevalence rates respectively. In comparison, the education-oriented applications were Microsoft PowerPoint (or its equivalent), Microsoft Word (or its equivalent), Microsoft Excel, Statistical software (e.g. SPSS), Exchange of information via E-mail, and Information search (e.g. Google Scholar) with the following prevalence 47.4%, 25.8%, 34.5%, 5.7%, 58.8%,

and 62.4% respectively; Boni (2018).

According to Hennessy, Harrison, and Wamakote (2010), integrating ICT into education in Africa comes with a number of challenges in the broader scope. This, they regard as spectrum of physical and cultural factors. These factors include intermittent power supply, inadequate technology infrastructure in terms bandwidth, internet accessibility, applications and hardware. Furtherance to the above challenges, teacher' factors such as level of education and literacy rate, lack of participation in professional development, and fear of technology (technophobia) also play a role as barriers to integrating ICT into classrooms. Aside those factors are issues relating to shortfall of ICT resources, learning materials and ICT curricula. It has been indicated that the following factors challenged the smooth implementation of ICT into classroom in a study conducted among 48 teachers (Uma & Arulchelvan, 2012). These factors include: lack of time (78%); lack of infrastructure (82%); and Lack of skills (65%). Challenges facing incorporation of ICT into education is not only restricted to acquisition of ICT resources but also qualified human resource and adequate time allocation for practical lessons and tuition in ICT.

With increasing use of information and communication technology in education, students entering university need a basic level of computer proficiency to be able to access course materials and complete assignments. For example, at the University of Cape Town (UCT) all new first year students are required to write an online computer skills test, so that those who lack the necessary skills can be identified and provided with basic learning. (Baugh, 2004). In addition, at the University of Rwanda (UR), the familiarity and experience with technology for incoming students is not clearly known. Dorman, S.M (2000) suggest that Universities need to understand this phenomenon for efficient education planning and management.

In Malawi

There has been an increasing uptake of ICTs across Malawi, and at national level, this development may be attributed to the proliferation of smartphones or Internet enabled phones and Internet data bundles which are somewhat subsidised by mobile network service providers (Chaputula, 2012; Mtingwi and Van Belle, 2012). It is worth to acknowledge that several studies have been conducted at MZUNI on the use of ICTs in teaching and learning. This is because Mzuzu University has powerful Open and Distance Learning Centres in different regions of the country. More challenges that need to be solved include intermittent power supply, which makes Internet access difficult (Chaputula, 2012) and the very considerable cost of the Internet connectivity (eLearning Industry, 2016). Malawi's reliance on only one source of electrical power is certainly a significant challenge. Many companies have tried to bring in solar energy as a source of power, but during rainy season and cold season when sunlight is not enough, solar electricity supply becomes a challenge.

The usage of ICT in higher educational institutions helps students to avail their required information in a short time from anywhere (Oliver, 2002). In an academic environment through ICT, students can have easy access to electronic information i.e. electronic books/journals, databases, search engines, and web 2.0 (Meerza and Beauchamp, 2017; Wilson *et al.*, 2014; Harvey, 2012; Okojie, 2010). ICT helps students to innovate, enrich, accelerate and extend their skills to strengthen and change their learning pattern (Davis *et al.*, 2009; Yusuf, 2005; Davis *et al.*, 2011; Chan, 2002; Tearle, 2004; Al-Ansari, 2006).

After initial support from the United Nations Economic Commission for Africa (UNECA), which assisted with the development of a national ICT policy framework report, the Government of Malawi adopted a National ICT for Development Policy in December 2005. The policy seeks to address an array of problems faced by the Malawian economy and society which include: Inadequate market information flow especially on small domestic markets “Brain drain” in the ICT sector due to low remuneration (Essentially, the brain-drain is at two levels: from Malawi to other countries especially within the SADC region, and from the public sector to the private sector), Inadequate institutional capacity at national, sectoral, and organizational levels, Negative attitude towards technology change, Underdeveloped telecommunications infrastructure especially in rural areas. Its vision is for an ICT-led Malawi and its mission is to facilitate the creation of an enabling environment for efficient, effective, and sustainable utilization, exploitation, and development of ICTs in all sectors of the economy in order to attain an information-rich and knowledge-based society and economy.

Based on a constructive learning approach, ICT helps students focus on higher-level concepts rather than less meaningful tasks (Levin and Wadmany 2006). McMahon’s study (2009) showed that there were statistically significant correlations between studying with ICT and the acquisition of critical thinking skills. But in regards to Malawi, there are a number of challenges students in universities face in ICT skills. There is Limited Access to Digital Learning Resources such that ICT-illiterate first-year students have an uphill task in accessing and utilizing digital learning resources. This includes online textbooks, research articles, e-library resources, and learning management systems. Limited access to these resources can hinder their ability to engage with course materials effectively. As Reid (2002) has indicated, ICT offers students more time to explore beyond the mechanics of course content allowing them to better understand concepts.

In addition, there is communication barriers in the sense that ICT literacy plays a crucial role in facilitating effective communication between students, instructors, and support services. Watts-Taffe *et al.* (2003) found that teachers can act as catalysts for the integration of technology

through ICT. ICT-illiterate students may struggle with online communication tools such as email, discussion forums, and virtual meetings. This can hinder their ability to actively participate in academic discussions, seek clarifications, or collaborate with peers (www.researchnetmw.net)

METHODOLOGY

The study was hybrid as it combined both qualitative and quantitative approach research. The qualitative research involved the interview and historical documents. In addition, the qualitative methods focused primarily on the kind of evidence (what people told the researchers, what they did) that enabled the researcher to understand what was going on. While Quantitative methods emphasized objective measurements and the statistical, mathematical, or numerical analysis of data collected by using administered questionnaires to the students purposively selected. The interviews were conducted to all 45-day (generic) students at Emmanuel University. The study involved all 45-day (generic) students at Emmanuel University, one Librarian and one English Lecturer. Since the population is 45 students, the sample size remained 45 because the number is less than 1000 as guided by Patton’s theory of sample size.

Sampling Method

This research was a combination of both qualitative and quantitative in nature. It used a questionnaire’s approach tool to collect and analyze data. The study began with a questionnaire or survey to determine the prevalence of ICT illiteracy levels among first-year students at Emmanuel University. The data collected was analyzed using descriptive statistics (Lee, J. 2010). Next were semi-structured interviews which were conducted with a subset of survey participants to gain a deeper understanding of the impact of ICT illiteracy on academic performance. Finally, the research reviewed existing literature on strategies for addressing ICT illiteracy among university students.

Data Collection Methods

This study used both Primary and Secondary Data. Primary data was in the form of Administered Questionnaire and Interactive Interviews. While Secondary Data was collected in reviewed available documents.

The Questionnaire targeted and was administered to 45 students while a Librarian and a Lecturer was interviewed separately. The reason why a Questionnaire in general was used is that it is one of the doubtless primary sources of obtaining data in any research endeavour on top of the following advantages as has been put down by Seliger & Shohamy (1989), Robinson, (1991) Lynch (1996), Nunan (1999), Gillham (2000), Brown (2001), that questionnaires are one of the efficient means of collecting data on a large-scale basis; They can be sent simultaneously to a great number of people; the inquirer can fairly and easily gather data in field sites; Respondents anonymity makes them to share information more easily; They are a time-

efficient way of collecting data from many people; They are cost-efficient.

On the other hand, questionnaires have some disadvantages which should be kept in mind whenever they are used as Gillham, (2000) and Brown, (2001) say: ‘Sometimes the answers are inaccurate and questionable; There is usually low return rate when sent by post or email; Ambiguity and unclarity of some questions might lead to inaccurate and unrelated responses; Some questions may cause misunderstanding; Wording of the questions might affect the respondents’ responses.’ The interactive interview is therefore essential because it caters for areas that need immediate clarification.

Data Analysis

The data for this research was analyzed using thematic analysis. Thematic analysis is a method for identifying, analyzing and reporting patterns or themes within the data collected (Bryman, 2004). This method was chosen by this study because it is flexible and a good method to unravel or loosen the surface of reality (Braun and Clarke, 2006). After data from all the sources was reviewed then content analysis was done which led to the categorization basing on the responses from respondents. It is from this categorization that themes emerged. Themes that came out very clear were as follows:

- Level of computer knowledge and skills
- Effects of computer knowledge on academic performance
- Factors contributing to lack of computer knowledge
- Ways to minimize lack of computer knowledge.

RESULTS AND DISCUSSION

The study revealed that out of 45 students interviewed only 2 did computer training in secondary school. The rest have had no Training because of the following reasons:

Level of Computer Knowledge and Skills

- The study confirms that there are very few students in the first semester of first year at the university with knowledge in computer skills and technology.
- It was revealed that only one student had full computer knowledge in the first semester of the year. This signals Emmanuel University to a need of in-service training on the use of ICT (Yildirim 2007). The results are also an indication that government and the private sector need to support schools by procuring more computers, providing iPads, providing electric or solar power supply to complement computer laboratories to operate effectively. Most schools are not connected to the national electricity grid especially those in rural areas.

Table 1: Factors contributing to computer illiteracy levels for first year students at Emmanuel University

Factors contributing to computer illiteracy		
	Frequency	Percent (%)
Lack of computer studies lessons	18	40
Lack of computers	13	28.9
Not interested in computer studies	1	2.2
No response	13	28.9
Total	45	100

The table above show figures in frequency and percentage on the illiteracy levels based on the responses of the students interviewed. According to the report from ministry of Education 2022 Malawi Education Statistics Report on form four graduate figure, it can easily be analyzed that there are many factors contributing to illiteracy levels in the country. Looking at the low numbers of schools offering information communication technology, it is clear and obvious that most student populace that would be accepted into universities and colleges at first year would be of little knowledge and skill. If rural electrification programme is well funded and implemented throughout the country, if every school was offering information communication technology studies as a compulsory subject with well-equipped laboratories, illiteracy levels would have reduced. In some instances, the subject in mention is made to be optional when those who decide not to learn it will still graduate from secondary and go to universities where they will find assignments, research and other academic related work which demand

the use of this type of technology. This is an equivalent scenario if primary schools enroll learners straight in grade one or standard one. If grade two students do not perform well, grade two teachers are most likely going to blame grade one teachers for not having done a good job in teaching grade ones. In a similar instance, to avoid the blame game that might arise in colleges and universities by lecturers for some students not having the knowledge of information communication technology, if the government or the private sector cannot manage to provide for all primary and secondary schools with qualified teachers, well equipped computer laboratories, electrification of the computer laboratory buildings, there should be a deliberate programme of preparation to start assembling computers or ICT related tools and machinery in the country to make the supply of ICT gadgets possible. This might take time, but using students studying for computer engineering at Malawi University of Science and Technology (MUST) would be an aid deal. If Malawi is to achieve the agenda 2063, “the Malawi

we want” policy, then there is need to start entrusting higher learning institutions to help in complementing government to reduce some of the challenges like illiteracy levels in some higher learning institutions in the country. Lecturers in institutions should also take the role of writing project proposals in their departments on topics that relate to the importance of computers, smart phones and internet to students in higher learning institutions. This might attract the attention of some corporate institutions to help donate computers or fund such projects.

Effect of Computer Knowledge on Academic Performance

The study shows that majority of first year students are affected by lack of computer knowledge in their academic preparations which includes Power Point Presentations and writing of assignments as well as proper use of the internet. This gives pressure to improve scores on examination results (Liu and Szabo 2009).

Factors Contributing to Lack of Computer Knowledge

- It was interesting to note that majority of the students attributed the lack of computer knowledge to lack of computer studies lessons at secondary schools for some learners.
- While others said that this was due to lack of smart phones and computers even from their homes. This has led to insufficient skills for managing learning. (Frederick, Schweizer and Lowe 2006).
- In some schools, there are no ICT Laboratories, while in some schools, there is no electricity connectivity.
- Malawi secondary schools follow the system of subject combination. The issue of subject combination in as much as it is very beneficial to students of different academic abilities, poses a threat to ICT general knowledge for students who may want to proceed to University education as the results have shown in this research. This is because others may not be given subject combination with ICT due to their pass marks at form two.
- ❖ Some students explained that in some instances, students are meant to choose between computer studies and Life skills. This makes the study of computer Studies optional posing this challenge of high illiteracy levels related to ICT in universities.

- Students further explained that learning ICT in some instances would start in form 3 which is not enough time to master or familiarized themselves with ICT knowledge and skills.

- Some students also stated that other students are told by their friends that ICT Malawi National Examination Board (MANEB) examinations are very tough, hence choosing another option.

- Student X reported that: “Schools where there are computers, most students like playing games than doing academic work or learning other helpful skills. This is how most computers have been damaged because others become careless in the due course. This of course calls for proper institutional management for computer laboratories and even personal cell phones or iPads.”

This would explain misplaced use of ICT related resources in some schools which mostly might have been donated by well-wishers can easily send away well-wishers.

Ways to Minimize Lack of Computer Knowledge

- Majority of the students suggested that the university should be conducting computer lessons to first year students as a way of providing effective, timely, and continuous training to improve ICT skills and manage a technology-rich classroom (Hutchison and Reinking 2011);
- While others opted for buying more computers for the university as shown in the figure below which will improve student learning (Al-Bataineh *et al.* 2008).
- Others responded that when writing acceptance letters for students, there should be a statement that all first years should bring either a computer or a smart phone to help in group communications like WhatsApp, emails, zoom lectures, checking information from student portals and others. This is because some parents who are not in the computer age do not understand when children ask them to buy such expensive gadgets like laptops. The current University trend is that the University offers an introductory package of computer skills to those interested first year students. Because it is optional, most students do not attend. To others, once they acquire minimal skills, they stop attending computer lessons. A comment from the library section currently responsible for orienting students in computer skills said that:

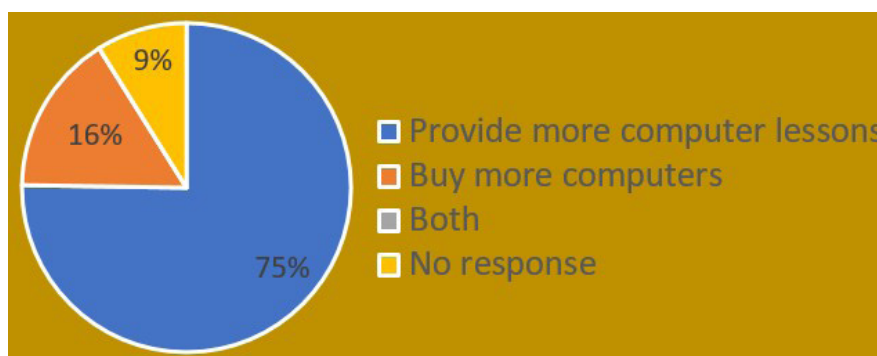


Figure 1: Ways to minimize lack of computer knowledge

“Most students take the ICT orientation programme less important because it is not an examinable module. They only see its importance when they start writing assignments.”

Lecturer X who teaches first years also stated that:

“It sometimes becomes very disappointing to receive some assignments with unjustified pages, no page numbers, spelling errors as well as no proper formatting. This, lecturer x said is as a result of high ICT illiteracy levels.”

The pie chart below shows figures on the response of participants on ways that can minimize the lack of computer knowledge to students at Emmanuel University and other higher learning institutions. It has to be noted that these are responses specific to Emmanuel University students.

Education Statistics compiled a Report that comprised of figures about total number of schools offering Information Communication Technology lessons and those that are connected to the internet (Ministry of Education 2022 Malawi Education Statistics Report).

The report shows that Education management information systems (EMIS) has a record of total number of schools in the country as 7,750. Out of this total number, 127 schools are the only ones offering ICT lessons. This was explained in the percentage of 1.9%. The report further recorded 170 schools connected to the internet representing a percentage of 2.5% (ibid). see unaltered exact extract table below from the Ministry of Education 2022 Malawi Education Statics Report.

Ministry of Education 2022 Malawi Education Statistics Report on ICT in Primary Schools

The ministry of Education 2022 through the Malawi

The Following Table is an Exact Extract From Ministry of Education 2022 Malawi Education Statistics Report

Table 2: Number of schools that offer ICT lessons and Schools that connected to the internet

District	Total Number of Schools	Number of School that offer ICT Lessons	Percentage of School that offer ICT Lessons	Number of Schools connected to the internet	Percentage of Schools connected to the internet
Chitipa	180	2	1.1%	2	1.1%
Karonga	186	2	1.1%	2	1.1%
Rumphi	208	2	1.0%	3	1.4%
Mzimba North	287	2	0.7%	5	1.7%
Mzimba South	323	2	0.6%	3	0.9%
Mzuzu City	67	5	7.5%	7	10.4%
Nkhata Bay	210	1	0.5%	2	1.0%
Likoma	10	0	0.0%	0	0.0%
Kasungu	388	4	1.0%	4	1.0%
Nkhotakota	174	0	0.0%	0	0.0%
Dowa	254	1	0.4%	1	1.7%
Ntchisi	157	0	0.0%	0	8.8%
Salima	179	3	1.7%	3	3.2%
Mchinji	228	1	0.4%	20	0.7%
Lilongwe City	314	14	4.5%	10	3.9%
Lilongwe R. East	283	1	0.4%	2	0.7%
Lilongwe R. West	283	8	2.8%	11	3.9%
Dedza	267	5	1.9%	5	1.9%
Ntcheu	254	8	3.1%	8	3.1%
Mangochi	339	6	1.8%	7	2.1%
Balaka	174	1	0.6%	1	0.6%
Machinga	202	7	3.5%	6	3.0%
Zomba Urban	23	1	4.3%	0	0.0%
Zomba Rural	202	1	0.5%	1	0.5%
Blantyre City	282	18	6.4%	18	6.4%
Blantyre Rural	200	0	0.0%	1	0.5%
Mwanza	66	0	0.0%	0	0.0%
Chikwawa	203	9	4.4%	24	11.8%

Nsanje	112	2	1.8%	4	3.6%
Chiradzulu	98	5	5.1%	1	1.0%
Thyolo	212	1	0.5%	3	1.4%
Mulanje	183	0	0.0%	1	0.5%
Phalombe	99	15	15.2%	13	13.1%
Neno	94	0	0.0%	2	2.1%
Total	6750	127	1.9%	170	2.5%

The above information for primary schools is a clear sign that there is great need to maximize the use of ICT for primary schools which act as the basis for secondary education which in turn lead to a computer literate first year university students.

Secondary School Enrolment: (direct extract from ‘Ministry of Education 2022 Malawi Education Statistics Report)

If you look at the figures above of students enrolled in junior secondary and senior secondary, numbers keep

Table 3: Number of students by Sex, proprietor and form

Form	Sex	Private	Public	Grand Total
Form 1	Male	11365	49393	60758
	Female	11544	48929	60473
Form 2	Male	11620	47150	58770
	Female	11646	45908	57554
Form 3	Male	10704	40171	50875
	Female	10849	36397	47246
Form 4	Male	12914	41912	54826
	Female	12645	37955	50600
Total		93287	347815	441102

reducing. Analyzing from this, it is likely that enrollment in university for first years would reduce due to different reasons. However, if all the form four students graduate with computer knowledge and skill, performance for first year students wouldn't be a problem at university level.

LIMITATIONS

The study had its own limitations. One of the limitations was that the study was conducted in a period when students were having end of semester examinations. It is possible that some students might not have given adequate information because of rushing to either go for studying or going home for others who had finished their last papers. The second limitation was that the research was done on a single site (Emmanuel University) which might give a biased picture of the recommendations made for other universities.

CONCLUSION

The study attempted to answer the research questions through the objectives by using a case study design within qualitative and quantitative approach. The study used questionnaires and face-to-face interviews. Knowledge and skill in ICT provide ability and competency for students in institutions of higher learning not to struggle with obtaining information for assignments and research. ICT makes it easy for many academic activities to be achieved. Many students with no or little knowledge

about Information Communication Technology would most likely submit academic tasks either late or not even submit. ICT should not only be understood in a desktop, laptop or palmtop, but rather gadgets that would qualify to be in the category of operating with machines, tools or gadgets that are technological in nature and that have the capacity to help students or anyone access, store or return information in an easy way. We would not rule out the fact in this case that some students' failure rates in some Universities in terms of low marks for assignments are attributed to low ICT illiteracy levels.

Summary of Findings

The study found out that students and members of staff who were given the questionnaires and interviewed respectively, had different views and reactions. The first reaction was on the level of computer knowledge which majority indicated that they have very little ICT knowledge. The second was on the effect of lack of computer knowledge on academic performance which a number of students said that of failure to write assignments. The next was on the factors that led to lack of computer knowledge and majority gave the reason as being lack of computer studies before coming to university. Out of the 45 first year students of Emmanuel University that were interviewed, 23 were from rural secondary schools while 22 were from urban secondary schools. The last issue was on what they think the university should do to help those

with little computer knowledge. The response was that the university should be conducting computer lessons to students.

Implication of the Study

The knowledge and skill of ICT is important especially to the modern world. Just as preschool is a back born of primary school, it is necessary for first year university students to have prior knowledge of ICT, or introduce a module for a semester or one academic year to enhance effective computer knowledge and skill. From this study, it is clearly showing that poor knowledge and skill in computer information and technology can easily lead to poor student grade performance. The findings of the study have implications for practice. As the findings suggest, computer knowledge has a critical role to play in the academic performance of first year students. In order for first year students to achieve in their academic performance, there is need to expose them to computer studies in their early stages of their schooling, e.g. primary school and secondary schools.

Recommendation Based on the Findings and Discussions

Emmanuel University and All Other Universities to:

- Establish a department for ICT and computer studies
- Introduce ICT lessons as compulsory for all first-year students
- Conduct ICT lessons to all students in the first year for the whole academic year (two semesters)

Suggestions for Ministry of Education

- Introduce computer studies as a compulsory subject in all primary and secondary schools.
- Buy more computers in schools to enable primary, secondary, college and university students have access to computer knowledge and skills.
- Create computer laboratories in all secondary schools.
- Introduce ICT course in all Training Colleges and universities.
- Train more teachers in computer skills.
- Lobby for more computer aid to Malawi from the donor community.

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