

ICT SKILLS OF POST-GRADUATE STUDENT TEACHERS AT BISHOP STUART UNIVERSITY

Richard Twebaze

ABSTRACT

This paper was based on a study carried out among 50 Post-Graduate student teachers pursuing a Masters or Post Graduate diploma course in Education. The findings showed that 76% of the participants rated their ICT skills as either low or moderate. While the majority rated themselves highly on word processing, the majority had little or no knowledge on the use of ICT to analyse research data. It is recommended that universities should include a compulsory course unit on research data analysis using ICT. It is further recommended that serving teachers should be given in-service training courses to enable them improve their ICT skills in order to meet the demands of the 21st century.

Keywords: ICT skills, Post-Graduate, word processing,

Introduction

Many scholars argue that the world is currently on the verge of or is already ushered into the fourth industrial revolution, characterized by artificial intelligence. The precursor to the current revolution, the third industrial revolution was characterized by the widespread use of electronics and information technology (Schwab, 2016).

Throughout the world, skills in the use of Information Communication Technology are becoming essential from as far back as pre-school. Teaching and learning at all levels is shifting to the use of online sources and platforms. E-learning is gaining popularity because it is said to be more effective, is not limited by time and space, has capacity to reach more people, is cost effective and is a real and possible solution to teacher shortages (Hurley, 2022). Moreover, E-Learning is more suitable in the current fast paced world where many people desire to combine work with studies.

In a world where working and studying from home is increasingly becoming preferred, there is an urgent need for teachers to be equipped with ICT skills in order for them to remain relevant in the new normal.

While more and more people are inevitably getting exposed to the use of ICT, there are still challenges especially in the developing world because of limited availability of equipment and infrastructure, but also because of a poor attitude to change especially among the older students who lived part of their lives in the predigital era.

It is therefore important for more studies to be carried out to understand the nature of the challenges among the older and even younger students regarding acquisition and use of ICT skills in order to enable to current and future generation to be part of the new world where information and technology are the key pivots of all development.

Literature Review

According to Itslearning.com (2016), ICT skills for teachers in the 21st century include knowledge of use of basic programs like Ms word and Power Point, ability to back up files, ability to run on-line projects and social networking skills. Similarly, Patankar & Jadhav (2014) noted that teachers need skills in using the internet, wireless networks, cell phones and other communication technologies. Other skills identified as crucial for teachers include word processing, internet use, file navigation, use of e-mail, presentation software, spreadsheets and elearning platforms.

Wong A.Y & Daud, K (2018), in a study done in Malaysia, noted that teachers need to work on their attitudes towards the use of ICT, use of ICT in planning and designing teaching materials and use of ICT in teaching and assessment. However, it was found that many teachers considered that use of the internet to search for teaching content was extra work that was a bother to the teachers. It was also found that most teachers, especially the senior ones, did not like to change and were not willing to learn and improve their ICT skills.

In a study carried out in Ghana (Edu, J. et. al. 2018), analysis of the data collected revealed that teachers' ICT skills were at the moderate level. The study also revealed that teachers' uses ICT for general and personal purposes more than they use it for pedagogical or work purposes. In terms of ICT integration in classroom lessons, it was found that, teachers hardly use technology in their lessons because of not having ICT integration skills as well as lack of resources in the Basic schools. The study

recommended the need for regular in-service training programme for teachers with a direct focus on ICT integration and ICT usage for teaching and learning.

Murithi & Yoo (2021), in a study carried out among teachers in Kenyan public schools found that most of the teachers received only basic computer literacy training. It was also found that although teachers perceived the use of computers as necessary, they faced difficulties integrating technology in their lessons.

In a study involving teachers in the Swedish nine-year compulsory school in the province of Västra Götaland located in the south-west of Sweden, Catarina, P. (2012), found that positive attitudes related specifically to ICT as a useful tool for teaching and learning and a strong sense of self-efficacy in using computers in education seem to influence the use of ICT the most.

Niyosha M. H (2013), in a study done in Malaysia found that the level of ICT among teachers was moderate to high. The findings also revealed that females used ICT more than males and younger teachers used ICT more than older teachers.

Meenakshi (2013), reported that many teachers are reluctant to use ICTs, especially computers and the internet. Some of the reasons for this reluctance include poor software design, skepticism about the effectiveness of computers in improving learning outcomes, lack of administrative support, increased time and effort needed to learn the technology and how to use it for teaching, and the fear of losing their authority in the classroom as it becomes more learner-centered. In terms of using internet and other ICT as a resource for lesson preparation, most of the teachers

interviewed, admitted to never or rarely using it, while very few used the internet to gather information sporadically or regularly.

Meanwhile, according to National centre for Education Statistics (2020), in 2018, half of U.S. eighthgrade teachers reported using ICT at school when teaching every day, which was not significantly different from the ICILS average of 48%. However, the U.S. percentage was lower than the percentages of teachers in Moscow (76%), Denmark (72%), and Finland (57%)

According to Kassimu & Peter (2014), there were several challenges facing effective implementation of ICT curriculum in primary schools in Dar es Salaam. The challenges found included unwillingness of some teachers to teach ICT, lack of interest to teach ICT, lack of ICT literacy among teachers and pupils, lack of pedagogical knowledge and limited access to ICT facilities by most teachers and pupils.

Habibu & Al Mamun, A. (2012), in a study aimed at finding out the difficulties faced by teachers in using Information and Communication Technology (ICT) in classroom teaching-learning in technical and higher educational institutions in Uganda reported that the major barriers were lack of genuine software, inadequate computer in the classroom, low speed internet, lack of motivation from both teacher and student side to use ICT, lack of proper training skills, unavailability of latest ICT equipment, lack of expert technical staff, poor administrative support, and poor course curriculum.

There are various challenges which need to be considered by policy makers, planners, educators and

education administrators to determine the optimal level of integration of ICT in Teacher Education Program which include limited infrastructure, qualified staff, finance, teaching materials and commitment of various stakeholders; Pathak, A.R and Patil, D.Y (2020).

Krish & Zabidi (2007) noted that many teachers and lecturers alike have progressed from the experience of learning in the classroom to teaching in the classroom accustomed to traditional methods of learning. A sudden change from what is familiar to something different and new may result in resentment or rejection.

According to Israkhan (2021), many teachers still prefer printed books because they believe that ICT devices are likely to distract the attention of learners and this is likely to lead to wastage of time.

Efforts to Equip Teachers with ICT Skills

There have been numerous efforts in the recent past to equip Ugandan teachers with ICT skills. Muleme (2014) reported that an estimated 300 teachers were trained in ICT in a program funded by Uganda Communications Commission under the rural development fund and that schools without mains electricity were given solar powered computers. The Spy Uganda (2019) similarly reported that there was a country wide effort by UCC to improve capacity building in ICT skills among teachers in Uganda.

Despite the efforts, Bbuye (2015) pointed out that in Uganda at that time, only 45% of secondary schools that had ICT infrastructure did not adequately use the

infrastructure due to lack of skills and low ICT literacy levels of school managers, teachers and students.

Similarly, Kisakye (2015) noted that ICT usage in Uganda had a long way to catch up. It was noted that while almost every school had a computer laboratory, when you visit the schools, you find the computers covered in dust and the students are warned not to touch them lest they spoil them.

Elsewhere in the developing world the situation appears to be more or less the same. Enu, *et al* (2018), in a study carried out among basic school teachers in Ghana noted that integration of ICT into teaching practice was at a risk of being compromised if teachers possessed little or no knowledge of ICT. Findings of the study showed that teachers' skills in ICT were at the moderate level and it was reported that teachers mainly used ICT for general and personal purposes such as chatting on social media and entertainment rather than for pedagogical purposes.

Importance of ICT Skills for Teachers

The importance of ICT skills for teacher in the 21st century need not be over emphasized. Bhattacharjee, B *et.al* (2016) noted that ICT skills help teachers to access unlimited sources of up to date and accurate information that can help them in teaching. Similarly, Khalifa & Baig (2018) established that ICT was of great importance in effective professional development among teachers.

Teachers with good ICT skills are also more likely to find a lot of useful information on modern and effective teaching methods and resources in form of published papers and textbooks, pictures, videos and

animations. In a world where on-line teaching is gaining a lot of popularity due to its economy and efficiency, any teacher without sufficient ICT skills is likely to find it difficult to cope. The use of ICT certainly makes learning more fun and memorable and also enables the teacher to link up with fellow teachers around the world.

Problem Statement

ICT skills among teachers and students in the current times are inevitably essential. However, a significant digital divide still persists between developed and developing countries in terms of both physical resources and the capability of teachers to effectively utilize even the few available resources (Newby, 2013). The purpose of this study was to establish the extent to which post graduate students possess basic ICT skills so as to come up with recommendations on what needs to be or can be done to improve the situation.

Objectives

This study was guided by the following objectives:

- a) To find out the extent to which post graduate student teachers in Uganda are equipped with ICT skills
- b) To find out the challenges faced by post graduate student teachers in Uganda in acquiring ICT skills.
- c) To suggest measures improving ICT skills among post graduate student teachers in Uganda.

Methodology

The study employed a cross sectional survey design. All 48 students in a semester one post graduate class that included students pursuing Master of Educational Management Administration and Planning and Post Graduate Diploma in Education were asked to participate in the study. Data was collected using online questionnaires, interviews and observation.

Findings

The findings of the study showed that 71.4% of the participants were male while 28.6% were females. The majority of the participants (62%) were secondary school students while 10% were Primary School teachers. The remaining 18% were administrators in educational institutions and departments.

While almost all participants said they had an active personal e-mail address, only 23% said they used their email address always. 14.3% said they used their email address often, 19% occasionally, while 42.3% said they used their email addresses only sometimes.

Asked whether they had received any formal training in ICT prior to joining the course they were currently pursuing, 57.1% answered yes while 42.9% said they had not received any training in ICT. The majority of participants (76%) reported that they had not received any formal training in ICT as part of the course they were currently pursuing while only 24%

reported to have received some formal training in ICT as part of the course they were currently pursuing.

Asked whether they had easy access to a computer whenever they needed to use one, only 57.1% of the participants said they always had easy access while 47.1% said they had access only sometimes. Of all the participants, only 38% said they owned a personal computer. However, 95% of all participants said they owned a smart phone that they used as their main ICT device.

Table 1: Summary of Findings on Basic ICT Competency Levels among Post Graduate Student Teachers

	Very Low	Low	Moderate	High	Very High
Overall ICT Skills	9.5%	3.3%	33.3%	14.3%	9.5%
Use of Ms Word	14.3%	23.8%	14.3%	33.3%	14.3%
Use of Ms PowerPoint	19%	23.8%	14.3%	33.3%	14.3%
Use of Excel Spreadsheets	19%	28.6%	28.6%	23.8%	4.8%
Use of SPSS for Data Analysis	61.9%	19%	18.3%	0%	0%
Interpreting SPSS Results	47.6%	19%	5%	9.6%	0%
Use of Online Questionnaires	19%	23.8%	23.8%	24.8%	9.5%

Ability to print a document	25%	10%	10%	20%	35%
Ability to share a document as an email attachment	9.5%	19%	23.8%	14.3%	33.3%
Ability to download documents from internet	4.8%	14.3%	4.8%	28.6%	47.6%
Ability to use zoom for Lectures	4.8%	4.8%	14.3%	28.6%	47.6%
Typing speed	0%	42.9%	23.8%	23.8%	9.5%
Ability to create, store and retrieve document on a computer	4.8%	19%	14.3%	14.3%	47.6%
Ability to use phone as an ICT device	0%	14.3%	19%	14.3%	52.4%

While majority of respondents said they were confident about their ability to type, store and edit documents, most of them felt their abilities in the use of Excel and SPSS for data analysis were very low. Most respondents found the use of power point for presentations and how to generate charts.

ICT Usage among Teachers

In this study, it was deemed necessary to establish the source of ICT skills for the teachers that participated in the study. The findings showed that 47.8% attained the skills they had through self-training and practice while 26.1% said they learned from friends and colleagues at work. Another 26% said they had attended a self-

sponsored formal training in ICT. None of the participants said they had attended a formal training course organized by their employer.

Regarding ownership of ICT gadgets, all the participants reported that they owned and used a smart phone. While 65% said they always used their smart phones for ICT, 35% said they used the smart phones for ICT only sometimes. However, only 74% said that they owned a personal computer and the majority said they had recently acquired personal computers for purposes of the post-graduate course they were currently pursuing.

On whether teachers always searched the internet in order to access teaching content, 61% said they always did so while 39% said they did so only occasionally. Those who searched the internet only occasionally said that they still relied mainly on traditional hard copy text books as a source for teaching content.

47.8% of the teachers who participated in the study said that they had ever used ICT equipment during actual delivery in the classroom while the remaining 51% said they had not used any ICT equipment. When probed further on which ICT

equipment teachers used most while teaching, the teachers mentioned their mobile smart phones.

On the use of projectors in teaching, 61% of the teachers said they had never used one and did not know how to use it because neither they nor the schools owned one. Only 4% of the teachers said their schools had projectors while 36% said they had used projectors only during workshops, seminars or presentations during their time of training.

On the use of computers to store and process students' data, 54% said they had never stored or processed students' data on a computer while 40% said they only did so occasionally. Only 6% of the teachers said they always stored and processed students' data on a computer.

Asked whether they used computers to prepare and produce students' reports, 41% of the teachers said they always used computers since their schools possessed a computerized system of producing academic reports. The remaining 59% of the teachers said they still relied on the manual system of producing reports for their students.

Asked about the use of e mail to communicate with their supervisors or fellow teachers at work, only 13% of the teachers said they always used e mail to communicate with their supervisors while 41% said they did so only occasionally. The remaining 46% said they never used email to communicate with their supervisors or fellow teachers at work.

When the teachers were asked about the general attitude among teachers on the use of ICT in teaching and at work, 35% said the attitude was poor while 34% said it was moderate. Only 31% said there was a

positive attitude on the use of ICT in teaching and doing administrative work.

On availability of ICT facilities at the workplace, 43% said there were sufficient ICT facilities while 57% said the facilities were insufficient. Meanwhile, 48% of the respondents said the ICT facilities in their schools were readily accessible by students and teachers while 52% said that even the available ICT resources were not readily available to students and teachers. The average computer to student ratio was established to be 13 students to 1 computer.

On the quality of ICT equipment in the schools, 57% of the teachers said the quality of ICT equipment was substandard while 43% said the quality of ICT equipment in their schools was good.

Only 48% of the teachers involved in the study rated availability of electricity in their schools as high while 52% said reliability of power supply was poor.

Discussion, Conclusions and Recommendations

The findings of this study showed that up to 76% of the teachers who participated in the study rated their ICT skills as either low or only moderate. This compares unfavorably with the statistics in the developed world. Where they have a medium or high level of computer skills.

It is worth noting that the findings of this study showed that the majority of teachers did not have any skills in the use of SPSS to analyze research data. Considering that the participants were post graduate students who are required to research as part of their course requirements, this was a point of concern.

Recommendations

Recommended that Universities should include data analysis using ICT as part of the course or make proficiency in data analysis using ICT a pre-condition for admission.

It was heartening to note that more than 50% of the teachers said they could use their phones as ICT devices and were able to attend meetings and lectures on zoom. This number however needs to improve further since the use of ICT is inevitably on the increase going forward.

As a matter of urgency, government and institutions need to invest money and efforts to ensure that the attitude of teachers towards the use of ICT in teaching and management keeps improving. In particular, Universities need to ensure that students offering post graduate courses are equipped with skills to enable them use ICT to analyse research data.

Change of attitude needs to go along with creating an enabling environment for teachers to access the necessary technology. This requires acquisition of up-to-date equipment sufficient for teachers and students, ensuring reliable and sufficient power to run the gadgets and availability of experts to train staff and maintain equipment.

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