



A DEMOGRAPHIC PERSPECTIVE ON UNIVERSITY LECTURERS' USE OF INFORMATION COMMUNICATION TECHNOLOGIES IN TEACHING

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Abstract:

The study sought to establish the use of information technology in literacy instruction by university lecturers. The focus was on the main demographic factors which significantly impact on the use of Information Communication Technologies (ICTs) in literacy instruction. The following variables were of interest: age, gender, highest qualification attained, work experience, tenure and employment status. The research was carried out at Great Zimbabwe University (GZU), a university in Masvingo Town, Zimbabwe. A descriptive survey was used as research design. Interviews and questionnaires were used as data collection instruments to eighty (80) lecturers from the Robert Mugabe School of Education and Culture based at GZU. The current study rides on the knowledge gap that previous studies had a tendency to look at primary and secondary school practitioners' use of ICT and yet the problem could be at institutions of higher learning. The research looked at GZU's perspective or policy to the use of ICT, teaching /learning outcomes for both students and lecturers, impediments to the use of technology and uses of technology by both lecturers and students. Quite significant therefore, is the fact that the research empowers all stakeholders to redirect their efforts to address the use of technology to enhance literacy instruction in institutions of higher learning. The results of the study revealed that there is less use of ICTs by lecturers in teaching and learning at the Robert Mugabe School of Education and Culture, Great Zimbabwe University. Variables such as age and gender were seen to affect the use of ICTs. Educational and academic qualifications and use of ICTs had an inverse relationship whereby an increase in one's educational/academic qualifications showed a decrease in the use of ICTs. It is recommended that the university has to come up with a clear policy to guide lecturers on the use of ICTs in research, lecture preparation and presentation and assessment. Members of staff (Lecturers) were to frequently attend refresher workshops and seminars on the use of ICTs in education. It is also envisaged that personal computers and laptops

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are availed to teaching members' offices and computer laboratories. This would result in effective teaching and research.

Keywords: information communication technology (ICT), literacy instruction, higher education, information literacy

1. Introduction

Great strides have been made in the development of instructional technology the world over and Zimbabwe is no exception. ICT resources have been made available to the education sector at a tremendous rate. Dambudzo (2016) defines Information Communication Technologies (ICTs) as all technologies used to pass information from one person to another. In 2005, the government of Zimbabwe adopted an ICT policy and in a way was directed by the Nziramasanga Education Commission Report of 1999 which advocated for the use of ICT for teaching and learning. According to the World Economic Forum's Global Information Report, Zimbabwe ranks 105th out of 115 economies 2005-2006, based on a networked readiness index, which measures the degree of preparation of a nation to participate in and benefit from ICT developments (Shafika, 2007). Zimbabwe's Internet connectivity also benefitted immensely from the setup of the East African Submarine Cable System (EASSy) which is a submarine optical fibre system running along the east coast of Africa. This increasingly massive availability of digital and networked tools has the net effect of transforming the teaching and learning process in universities. Literacy instruction simply put, is about sending and receiving information during teaching and learning. It involves innovative text formats (multiple media or hybrid texts; Lemke 1998), a new reader expectations (reading nonlinearly; Warschauer, 2006, and new activities (website publication). They extend traditional literacy experiences with comprehension of information on the Internet; effective use of search engines to locate information; evaluation of Internet sources; communication using e-mail, texts, and chats; and the use of word processing programmes (International Society for Technology in Education, 2007).

Individual universities are responsible for the provision of ICT hardware. The traditional classroom practice has shifted greatly towards ICTs. According to data published by the Pew Research Center (2011) use of technology in education has reached staggering levels. 89% of four-year public universities offer online courses; 50% of college presidents predict that in 10 years, most students will have taken courses online; 62% of college presidents predict that in 10 years more than half of the textbooks used will be digital; 57% of college graduates have used a smart phone, laptop or tablet to some degree during class; most institutions do not have clear policies regarding use of such gadgets; for most institutions it is up to the individual instructors to manage such uses. (Taylor, Parker, Lenhart and Patten, 2011, pp. 1-2). This all points to a growing trend towards the use of ICTs in literacy instruction.

A remark by the former president of Zimbabwe (R.G. Mugabe) during his address at the 32nd Independence Anniversary instituted that Zimbabwe had set to establish at least one state university in each of its ten provinces (Herald, 18 April 2012). This would see a surge in student enrolments and also an increased need to use opportunities provided by ICT facilities. Many countries, Zimbabwe included, recognise the increasing role of technology in students' lives. They emphasize the development of technology-integrated curricula that are developmentally appropriate for young people (Plowman, Stevenson, McPake, Stephen and Adey, 2011). The technological innovations have caused educators to come up with new ways to disseminate information. Experience has shown that lecturers also face difficulties in using new technology for literacy instruction. These include problems with resources (lack of technology, time, or technical support), lecturer knowledge and skills (inadequate technological and pedagogical knowledge), leadership (institutional policies), attitudes and beliefs (not valuing or being fearful of the use of new technology) and assessments (traditional rather than matching new literacy's expectations; Hew and Brush, 2007).

ICT acts as a powerful change agent in the higher education landscape. Already there has emerged a need for educational institutions to ensure that graduates are able to display appropriate levels of information literacy, "*the capacity to identify and issue and then to identify, locate and evaluate relevant information in order to engage with it or to solve a problem arising from it*" (Oliver, 2000). Integration of ICT in education assists to educate students to participate in the rapid growth process of the 21st Century. The use of ICT offers powerful learning environments and can transform the learning and teaching process so that students can deal with knowledge in an active, self-directed and constructive way (Volman and Van Eck, 2001; De Corte et al, 2003). There have been great technological advances for use in literacy instruction. These information communication technologies (ICTs) include among others; electronic textbooks (E-books), simulation technology, gamification, computerised grading, flipped classrooms, active learning classrooms and Learning Management Systems (LMSs). The use of technology in literacy instruction has many advantages as the study sought to unravel. These may include access to instruction to normally deserving clients who are often excluded (for example; those with disabilities), those who have not engaged with technology before due to their backgrounds, preparing students for future workforce, reducing tuition costs related to traditional methods of instruction and enhance student learning and achievement among others. Adika (2003) analysed Internet use among faculty members of universities in Ghana. Research results show that in spite of the benefits of the Internet, its use among faculty is still very low.

2. Demographic Factors and ICT Use

2.1 Age

Research results according to Helpguide (2004) found out that older Americans are exhibiting better computer behaviour than in the former years. This is noted not to be a

global trend as observed by Hernes et al. (2000) in Norway where a share of teachers who state that they have a good command of the use of the Internet is negatively correlated with age. About 77% of the teachers who are 25 years or younger stated that they have a good command of the use of Internet, compared to 25% of teachers who are 56 years older. Also, around 63% of the teachers who are 25 years or younger versus only 32% of the teachers who are 56 years or older have a positive attitude towards the use of the Internet in their own teaching

Prensky (2001) believes that younger teachers are ICT natives who were born in a digital world and since they have been exposed to ICT more than older colleagues, they use ICT tools more confidently (Peerar and Van Petegen, 2010).

2.2 Gender

Jones et al. (2009) found that males spent more time online and were more likely to go online overnight than females. Confidence using web platforms and programmes is higher among male participants in Huang, Hood and Yool's (2012) survey of technologies for learning. It was further noted that females utilise mainstream information gathering tools and express higher confidence interacting through email or social media platforms. Lower levels of computer use by female lecturers have been reported in studies with regard to lecturers' gender and ICT use (Volman and Van Eck, 2001) due to female teachers' limited technology access, skill and interest.

2.3 Educational Level

Individuals with higher levels of education used the Internet more frequently; only 61% of individuals without a high-school diploma used the Internet while 94% of individuals with some college and 97% with a college degree or higher were Internet users. (Pew Research Center, 2012).

2.4 Tenure

Adika (2003) notes Fortin (2000) who explored faculty members' use of and their information seeking behaviours and activities on the Internet in his doctoral study at Angelo state University. He found differences between tenured and tenure-track faculty members on the perceived value of the Internet to meet their research and classroom information needs. Tenure-track faculty members reported a higher average Internet use per week than tenured faculty members.

2.5 Work Experience

Some previous studies found out that more experienced lecturers had used ICT in their teaching. For example, Egbert, Paulus and Nakamichi (2002) found that teachers who used Computer-Assisted Language Learning (CALL) activities were often those teachers who had experience with CALL. Also, Teo (2008) found that the years of computer usage is positively correlated with level of computer confidence. Studies on teacher's teaching experience and age have reported that teacher ICT use, experience and age are inversely

associated meaning that more experienced teachers and older teachers tend to use computers less frequently (Van Braak et al, 2004; Bebell et al, 2004) some studies have attributed this to veterans' limited computer proficiency (Bingimals, 2009) and readiness to use ICT in their classes (Inan and Lowther, 2010)

Shuqair (2009) descriptively examined the usage and related advantages of the Internet to the teaching members at Damascus University. He found no statistically significant differences due to teaching experience or academic rank. Mohammed (2007) also found similar results in his study applied to 161 teaching members at Hashemite University in Jordan. No statistically significant differences were found due to teaching experience but were found due to sex and academic rank.

3. Statement of the Problem

Traditional methods of instruction are time consuming and expensive in the preparation of teaching notes and aids. There are various students with individual differences who are always excluded in the teaching and learning in ordinary classes, some students from poor backgrounds as well as those from rural areas also find themselves in the university class with new technologies, the instructional technologies also prepare learners for future careers and ICTs enhance academic performance. This is also compounded by the nature of the composition of lecturing staff where we have the old and the young who appreciate ICTs differently. In respect of the foregoing points, the study focuses on university lecturers' use of technology in literacy instruction at Great Zimbabwe University, Masvingo Province in Zimbabwe.

3.1 Objectives of the Study

The research seeks to:

- Identify the key demographic factors that influence university lecturers' use of technology for instructional literacy,
- To estimate a model that explains the use of ICTs,
- Suggest ways in which lecturers and students benefit from the use of technology.

3.2 Research Sub-Questions

- How does institutional ICT policy enhance the use of technology by lecturers?
- What is the impact of the use of technology for lecturers?
- What is the level of acceptance of information technology by university lecturers?
- What are the challenges faced by lecturers in the use of technology?
- What recommendations can be suggested to attenuate the negative impact of not using ICTs in literacy instruction?

4. Theoretical Framework

This study is hinged on Lev Vygotsky's Socio-cultural theory/ social constructivism which stresses that learning and development are a social process and learners construct knowledge which is relevant to a particular society within a given culture. Vygotsky (1978) posits that social interaction within cultural artefacts forms the most important part of learners' psychological development. In the same vein ICTs have become part of the modern society and cultural tools or artefacts of the 21st century. Vygotsky further states that the role of education is to provide children with experiences which are in their zone of proximal development (ZPD), thereby encouraging advancement in the students' acquisition of knowledge and development. Zone of proximal development is the gap between the actual development level as determined by independent problem solving and the level of potential problem solving as determined through problem solving under adult guidance or in collaboration with more capable peers (Vygotsky, 1978:86). In this case the lecturers are the knowledgeable others who set up tasks using ICTs to assist students in discovery learning and development of higher mental functions. For Vygotsky, the environment in which children grow up will influence how they think and what they think about.

Bruner (1960) also expanded Vygotsky's ideas and brought out the importance of scaffolding learners. Slavin (2012:42) defines scaffolding as, "...support for learning and problem solving, which might include cues, reminders, encouragement, breaking the problem down into steps, providing an example or anything else that allows the student to grow in independence as a learner". The duty of the lecturer is to use the available ICTs in the students' ZPD to scaffold them and allow the students to climb to the next rung of the educational ladder and assist them in problem solving.

5. Research Methodology

5.1 Research Design

The study used both the qualitative and the quantitative approaches. The research design was descriptive study which is quantitative approach. Descriptive statistics were used to analyse the participants' responses and gauge the effective use of ICTs in teaching and learning by displaying charts and providing results in percentages and frequencies. The researcher gained insight into observable facts from participants' perspectives in their natural settings (McMillan and Schumacher, 2006).

5.2 Population and Sample

The study was carried out using a random sample of eighty (80) participants comprising of eighty (80) lecturers at GZU from the Robert Mugabe School of Education and Culture. At the time of the study there were about one hundred and five (105) lecturers and only eighty (80) were randomly selected as part of the target population. Stratified random sampling was used to randomly select the participants. The sampling technique was

deemed necessary because the sample was selected in such a manner that all members of the population had an equal or known chance of being selected. Makore-Rukuni (2001) posits that it operates on the principle of fairness since the population has identifiable characteristics and exposes all participants to an equal opportunity of being selected. In addition, Ahmed (2009) alludes that the principal objective of stratification is to reduce sampling errors. The population was heterogeneous and was grouped into homogeneous stratum according to departments. Of the five departments in the Robert Mugabe School of Education and Culture, each department constituted a stratum. From each department sixteen participants were selected. Purposive sampling was also employed in selecting departmental participants. Purposive sampling is a method of sampling where the researcher deliberately chooses who to include in the study based on the ability to provide necessary data (Parahoo, 2007).

5.3 Data Collection Instruments

Data was gathered through questionnaires with the target population comprising eighty (80) lecturers. These instruments were used to obtain data on the use of technology in literacy instruction. The questionnaire with two sections was used to collect information on lecturers' adoption and use of ICTs in literacy instruction and demographic data.

5.4 Data Presentation and Analysis Plan

After collection of data the demographics were cleaned, edited and coded. The following codes were adopted:

Table 1: Demographics for University Lecturers

Variable	Range	Code
Age	30 – 40	0
	41 – 50	1
	51+	2
Gender	Male	0
	Female	1
Academic Qualification	Bachelors degree	0
	Masters	1
	Doctorate	2
	Professorship	3
Work Experience	0 – 5 years	0
	6 – 11 years	1
	12 – 16 years	2
	17+	3
Tenure	Tenured	0
	Not Tenured	1
Employment Status	Full-Time	0
	Part-Time	1

This paper adopted a Binary Logistic Regression Model to identify and measure demographic factors that influence adoption and use ICTs in literacy instruction.

Correlational analysis was used to test the relationship between the dependant and independent variables. Furthermore, the researcher performed diagnostic tests to check for violations of assumptions of constant variance and linearity among variables.

The P-value was used to determine the significance of the coefficient terms for the regressions. The coefficient of determination, R^2 was used to measure the strength of independent variables in explaining the variations in the dependent variable. The data collected for the study were binary in nature therefore, Binary Logistic regression technique was used to conduct the analysis and STATA 12 statistical software was employed. A Chi-Square Test of association was used on categorical demographics factors; gender, highest qualification obtained and employment status.

5.5 Model Specification

The study made use of binary linear regression as statistical instrument to analyse the demographic determinants of use of ICTs in literacy instruction. The general binary regression model was formulated as follows:

$$Y_{it} = \beta_0 + \sum \beta_i X_i + \varepsilon_i \quad (1)$$

Where,

Y_{it} is the dependant variable,

β_0 is the constant term,

β_i are the coefficients of the independent variables,

X_i are the independent variable, and

ε_i is the error term capturing impact of variables excluded.

The generic model is further decomposed to:

$$IctUs = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon_i \quad (2)$$

Where,

β_0 = the intercept (constant);

IctUs = Information Communications Technology use,

X_1 = Age,

X_2 = Gender,

X_3 = Highest Qualification,

X_4 = Work Experience,

X_5 = Tenure,

X_6 = Employment Status,

ε_i = error term.

6. Ethical Considerations

Participants will be informed that their participation is voluntary, and they may withdraw at any time if they are uncomfortable. The purpose of the research shall be

explained, and participants will be assured of strict confidentiality and anonymity regarding presentation of data.

7. Discussion of Findings

7.1 Response Rate

Table 4.2: University Lecturers' use of ICT in teaching

Variables	Categories	Frequency		Percentage	
		Ability to use ICTs	Inadequate use of ICTs	Ability to use ICTs	Inadequate use of ICTs
Age	30 – 40	1	5	1.25	6.25
	41 – 50	11	26	13.75	32.5
	51+	16	21	20	25
Total		28	52	35	65
Gender	Male	12	19	15	23.75
	Female	16	33	20	41.25
Total		28	52	35	65
Qualification	Bachelors	1	1	1.25	1.25
	Masters	14	24	17.5	30
	Doctorate	12	24	15	30
	Professorship	1	3	1.25	3.75
Total		28	52	35	65
Experience	0 – 5 years	2	1	2.5	1.25
	6 – 11 years	4	9	5	11.25
	12 – 16 years	12	32	15	40
	17+	10	10	12.5	12.5
Total		28	52	35	65
Tenure	Tenured	21	41	26.25	51.25
	Not Tenured	7	11	8.75	13.75
Total		28	52	35	65
Employment Status	Full Time	21	37	26.25	46.25
	Part Time	7	15	8.75	18.75
Total		28	52	35	65

Source: Researchers' Own Computations.

From the above table, 65% of the respondents who testified proved that they did not use ICTs in literacy instruction while 35% used ICTs. Those who do not use ICT in their work could be as a result of frustrations of lack of knowledge of ICT packages that they can use as well as lack of technical and material support. Some evidence has shown that when users feel that they are well supported in a variety of ways, they will be more inclined to use the system. (AbuShanab et al., 2010; San Martin and Herero, 2012). The high rate of inability to use ICTs in literacy instruction was rampant in the Robert Mugabe School of Education and Culture of Great Zimbabwe University. Research on the instructional uses of technology, however, have revealed that educators often lack the knowledge to

successfully integrate technology in their teaching and their attempts tend to be limited in scope, variety and depth. (Spector et al, 2014).

Of those in the 30-40 age groups 1.25% were able to use ICTs while 6.25% were unable to use ICTs. This could be a result of the education system that they went through which was also not dependant on ICTs use.

7.2 Correlational Analysis

The results of correlation tests are depicted by a correlation matrix table below:

Table 4.3: Correlation Matrix

	ICT	Age	Gender	Qual	Exper	Tenure	Employ
ICT	1						
Age	0.1748	1					
Gender	-0.0619	0.0830	1				
Qual	-0.0705	0.0548	0.0924	1			
Exper	0.0577	0.1503	0.0475	0.1444	1		
Tenure	0.0439	-0.0469	-0.0015	0.1682	-0.0489	1	
Empl	-0.0411	0.1113	-0.1422	0.0642	0.0644	0.0034	1

Source: Researchers' Own Computations.

Table 4.3 above shows the correlation between the explanatory variable and the independent variable. According to Brooks (2008), correlation between two variables measures the degree of linear association between them. Values of the correlation coefficient vary between positive one and negative one.

A correlation coefficient of positive one indicates that there is perfect positive association between the two variables while a correlation coefficient of negative one shows a perfect negative association between the two variables. A correlation coefficient of zero on the other hand, indicates that there is no linear relationship between the two variables. From the table gender, educational qualifications and employment status were inversely related to the dependent variable while the remainder (age, tenure and experience) of the explanatory variables were positively correlated to the dependent variable.

For any violation of this assumption (multicollinearity) to occur the correlation coefficient between any two variables must be outside the -0.8 to 0.8 range (Gujarati, 2004). From the above table all correlations are within the prescribed range for non-violation of the assumption of multicollinearity. Therefore, there was no presence of multicollinearity.

7.3 Interpretation of Logit Results

Table 4.4: Stata Logit Result

	Coefficient	Std Error	P. Value	95% C.I
Age	0.8235	0.4273	0.054	-0.0141 1.661
Gender	-0.3679	0.5203	0.007	-1.3787 0.651
Qualifications	-0.2559	0.3938	0.516	-1.0278 0.515
Work Experience	-0.4139	0.3174	0.092	-1.0361 0.208
Tenure	0.6836	0.5434	0.208	-0.3814 1.748
Employment Status	-0.3141	0.5698	0.581	-1.4309 0.802
Constant	-0.6065	0.9176	0.509	-2.4050 1.191

Source: Researchers' Own Computations.

$$\text{IctUs} = -0.61 + 0.8235\text{Age} - 0.3679\text{Gender} - 0.2559\text{Qual} - 0.4139\text{Exper} + 0.6836\text{Tenure} - 0.3141\text{Emplo}$$

7.4 Age

The coefficient of variable age has a p value of 0.054. At the 10% level of testing the p value is less than 0.1. This suggests that there is enough statistical evidence to conclude that age significantly affects the use of ICTs in literacy instruction. There is a positive relationship between age and use of ICTs. Holding all other variables constant, a unit increase in age will result in 0.8235 increase in the dependant variable. This is in contrast to other research findings. Van Braak et al, 2004; Bebell et al, 2004; Inan and Lowther, 2010 reveal in their findings an inverse correlation between ICT use, age and years of teaching experience. They state that this supports the fact that ICT use decreases with age and teaching experience of teachers and those younger teachers incorporate ICT tools into their teaching more than their older counterparts.

7.5 Gender

The coefficient of the variable gender has a p value of 0.007. At the 1% level of testing the p value is less than 0.01. This suggests that there is enough statistical evidence to conclude that gender significantly affects the use of ICTs in teaching and learning at university level. There is a negative relationship between gender and use of ICTs. Holding all other variables constant, a unit increase in gender will result in a decrease of 0.3679 in the dependant variable. This is also similar to findings by Jones et al. (2009) who found out that males spend more time online and were more likely to go online at night than females. Huang, Hood and Yool's (2012) survey of technologies for learning concluded that confidence using the web platforms and programmes was higher among male participants. The results for the School of Education and Culture at GZU could be a result of the females' nurturing behaviour whereby after work they were involved in household chores which left them tired and unable to visit the Internet for research. Males on the other hand have more time to do research online and feel confident doing it.

7.6 Qualifications

The Logit regression result shows that academic qualifications have a negative coefficient of -0.2559 and statistically insignificant with a p-value of 0.516. The negative sign of the coefficient indicates an inverse relationship between academic qualifications and ICTs use. This, therefore, means that there is no adequate statistical evidence to support the negative relationship between academic qualifications and ICTs. According to the regression result a one unit change in academic qualifications, keeping other things constant, would result in a decrease of 0.2559 units on the dependent variable. This was unexpected and does not conform to literature as one increase educational qualifications it is expected that the use of ICTs also increases. The results are different from those of the Pew Research Center, (2012) which found out that individuals with higher levels of education used the Internet more frequently; only 61% of individuals without a high school diploma used the Internet while 94% of individuals with some college and 97% with a college degree or higher were Internet users. The other reason could be that when these participants attained their doctorates, they also were not using ICTs.

7.7 Work Experience

Work experience has a negative coefficient of -0, 4139 and statistically insignificant with a p-value of 0,092. There is a negative sign on the coefficient which indicates an inverse relationship between work experience and use of ICTs. According to the regression results, a unit change in work experience keeping other things constant, would result in a decrease of 0,4139 units on the dependent variable. This was so at the Robert Mugabe School of Education and Culture because as one gains experience on the job he/ she is less likely to adopt new ways of executing tasks. The lecturers concerned may be comfortable doing their work using the traditional methods of teaching. New members of the school (less than 16 years work experience) are more likely to embrace the use of ICTs in teaching and learning. Teo (2008) notes that this is at variance with previous research where it was found that the years of computer usage is positively correlated with the level of computer confidence.

7.8 Tenure

The coefficient of variable **tenure** has a p-value of 0,208. At the 10% level of testing the p-value is greater than 0, 1. This suggests that there is enough statistical evidence to conclude that tenure is insignificant in affecting the use of ICTs in literacy instruction. Holding all other variables constant, a unit increase in tenure will result in 0, 68836 increase in the dependant variable. This in contrast to literature review as evidenced by Fortin's (2000) study where differences were found between tenured and tenure-track faculty members on the perceived value of the Internet to meet their research and classroom information needs. Tenure-track faculty members reported a higher average Internet use per week than tenured faculty members.

The results shown for members of the Robert Mugabe school of Education and Culture could be a result of the fact that members do not really put much in their tenure

status and they put almost same emphasis in their work. Tenured members still use the Internet for research and lesson delivery in pursuit of further promotion and tenure track members also use the same in preparation for tenure.

7.9 Employment Status

The Logit regression result shows that employment status has a negative coefficient of -0,3141 and statistically insignificant with a p-value of 0,581. The negative sign of the coefficient indicates an inverse relationship between employment status and ICTs use. It also means that there is no adequate statistical evidence to support the negative relationship between employment status and use of ICTs.

8. Conclusion and Recommendations

Based on the findings of this study, persistent poor or non-use of ICTs in literacy instruction due to lack of technical knowhow, attitudes and lack of supporting materials and equipment as a result of the studied demographics should not continue indefinitely.

It is recommended that the university must come up with a clear ICTs policy to guide lecturers on the use of ICTs in research, lecture preparation, lesson delivery and assessment to enhance their performance as well as that of students. There is also need for lecturer preparatory programmes to meet minimum technology standards. Members of staff could be allowed to attend workshops or seminars on ICTs use in education. Technology use should also be deeply integrated with instruction rather than to isolate them in one or two modules for example ICCT100 –Introduction to computers. This could also mean that the use of technology in literacy instruction should be extended to the whole university curricula.

Conflict of Interest Statement

Mavezera Tinashe Fradreck declares no conflict of interest.

Human Rights Statement and Informed Consent

All procedures followed were in accordance with the ethical standards of the responsible committees on human experimentation and with the Helsinki Declaration of 1994 and its later amendments. Informed consent was obtained from all participants for being included in the study

Animal Rights

This article does not contain any studies with animal subjects performed by the author.

About the Author

Mavezera Tinashe Fradreck is a University Lecturer in the Department of Educational Foundations. He has a Masters Degree in Educational Psychology. His research interests

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