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An assessment of computer and ICT skills among business subjects learners at Botswana Open University: Implications of ICT in business development.

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ABSTRACT

Of recent the Government of Botswana has considered information and communication technology (ICT) an important enabler for economic and social development and for enhancing the competitiveness of domestic business. This paper presents a study that focused on assessing computer and ICT skills of Business subject's learners at Botswana Open University's (BOU) Open Schooling. The study investigated levels of computer and ICT skills among Business subjects' learners in open schooling. It aimed to find out levels of computer skills; existence of ICT skills and perception of business subject learners on adoption and use of ICT skills for teaching and learning. Sample size of 223 participants from Botswana Open University's five regions was studied and data were collected using a survey questionnaire containing quantitative questions and was tested for reliability and validity using Cronbach alpha coefficient, and confirmatory factor analysis respectively. Rules of thumb for reliability and validity were done on 50 items. Non-probability snowball sampling technique through drop pick method was used. The findings showed that majority of the respondents had good computer typing skills, understood the basic functions of the computer hardware and think that it is essential for BOU's open schooling to start offering study units online as opposed to printed books, and learners were good at navigating the internet. The study also revealed that respondents needed improvement in use of ICT tools for learning their business subjects and that the tools would enhance their understanding of the subject matter. Lastly future research and policy implications of ICT in business development are discussed.

Keywords: Information technology, business development, ICT skills, innovation, BOU.

1. Introduction

Education in Botswana is free, but not compulsory. The Ministry of Education has authority over all of Botswana's educational structure except universities. The structure mirrors that of the United Kingdom: there is universal access to primary and junior secondary school, but a process of academic selectivity reduces entrance to the senior secondary schools and university. However, educational curricula incorporate pre-vocational preparation in the junior and senior secondary schools.

Botswana, like all other countries in the world, invests heavily in the provision of secondary education. According to Ministry of Basic Education report of 2018, (MOBE), there were currently 208 junior secondary schools and 32 senior secondary schools each equipped with a computer laboratory whose main purpose was to teach all students computer awareness. However, due to soaring numbers, the labs were not fully utilised for junior schools and for senior school only those students taking computer studies were using the labs further illustrated the report. Botswana Open University's Open Schooling gets learners from conventional secondary schools; those learners who are not able to proceed to next levels of their studies either at form 3 and/or form five. This is done in a way to allow learners upgrade and bring them back to school those who might have dropped from school due to various personal reasons.

Several policies that support the use of ICT in Botswana education exist. The Revised National Policy on Education of 1994 (RNPE) and the Report of the National Commission on Education of 1993 (RNCE) advocated for the inclusion of computer literacy in the Botswana education system. Recommendations 32c and 42f of RNPE emphasise the importance of computer awareness at both junior and senior secondary school level. Following the outcomes of RNPE 1994, the Botswana national curriculum across the spectrum of education system (primary to senior secondary) was revised to incorporate the use of ICTs across a range of subjects in schools. Recommendations 32c and 42f of RNPE emphasise the importance of computer awareness at both junior and secondary level. The curriculum provides for computer awareness (CA) at junior secondary level, and for computer studies (CS) at secondary level (RNPE, 1994).

As a result, most schools predominantly secondary schools, have been furnished with ICTs equipment as well as provisions made to roll-out ICTs through the Ministry of Basic Eduction (MOBE) to all classroom operations. The bacgkround to the country's educational system is very important because BOU's Open Schooling gets most of its learners from the government conventional schools at Junior or senior secondary pathway as a way of progressing into secondary education. Botswana Open University has five regional campuses and offers both tertiary education and secondary school

equivalency. The 2017 enrolment of Business Subjects leaners across the five regions stood at 1,310 JC (Commerce and Accounting & Commerce and Office Procedures) while BGCSE stood at (Commerce 891; Accounting 229 & Business Studies 17), all totaling 1,137.

Its worthy noting that the country does not have sufficient quantities of teachers who are trained in using technology for teaching and learning and this has resulted into lack of student centric classrooms as alluded by Batane, (2013).

Christensen (2014) notes that, for a revolution to take place in education, changes have to occur that will disrupt the status quo. This means that disruptive innovation like the use of ICTs in teaching and learning will change the way the world learns. The status quo in classrooms lacks constructivism teaching; a teaching method that embraces technology update as when a teacher positions himself/herself as being a facilitator and not a fountain of knowledge as hailed by the traditional teaching the world is used to. The ignorance among general public regarding teaching with emerging technology and understanding the discipline of teachers who teach with technology has seemingly grown in the Botswana reports Batane, (2013).

Nenty (2009) observes that quality teaching in Botswana has been lost. Moreover, the quality of text books, teaching methods not matching the 21st Century learners, teachers' experience, teachers' motivation, lack of parental involvement in the teaching/learning process has contributed to the poor teaching Botswana is faced observes Nenty, (2009). Noticeably, What results in poor quality teaching in most schools in Botswana is lack of technology application in classrooms as a means of democratizing education, notes Batane (2013).

Batane (2012) concurs with Nenty (2009) on the absence of technology led innovations in Botswana educational institutions, which would enhance teaching and translate into expectations of the 21st Century classroom. The ministry of education has not encouraged its partners to look at emerging technology innovations as one of the possible teaching modes in Botswana argues Nenty, (2009). Despite government policies encouraging growth of ICTs uptake in Botswana's educational systems, there still remains a gap leading to failure in harnessing emerging technology in Botswana schools as the fear by schools for technology to be in the hands of students keeps growing. According to Batane (2013) maintaining school policies that keep technology out of schools is worrisome. Evidence abounds that when students are not allowed to use modern technology like learning from YouTube videos, enrolling in MOOCs, or using Open Educational Resources (OERs) is an over reaction based on ignorance that leads to loss of valuable teaching opportunities. The majority of schools in Botswana don't have enthusiastic users of technology teaching and learning (Republic of Botswana, 1997).

Himmelreich (2013) argued that education was in danger of becoming irrelevant unless it adapted to new ways of teaching and learning. Notably, exposure to digital technology has made today's children neurologically different to those of last century and education needed to respond or become irrelevant maintains Himmelreich, (2013). According to Jones (2007), through technology, students have access to resources that are not available within their physical grasp. These promises encouraged the Botswana government to introduce computer use in schools so that learning improves and some of the problems in education, such as teacher-centered learning, are redressed as stated in the 1994, Revised National Policy on Education (RNPE) contrary to what is on the ground. In addition, harnessing technology in Botswana schools has remained static to the teaching fraternity due to managerial resistance that exist in most schools maintains Batane, (2013).
Lombardi (2011) argues that in most cases, one finds teachers who practice teaching with technology spending a lot of energy to find resources and others reinventing the wheel and that most teachers as they embrace emerging technology for the 21st century end up devoting all their energy to technology instead of educational goals. Moreover, technology ought to be used as means not as a subject on its own. As an example, there are some skeptical voices regarding the impact of online education compared to the traditional teaching methods in Botswana and world over.

Batane (2013) agrees with Lombardi (2011) on problems associated with technology practicing teachers in that in Botswana, there was a problem of policy issues when it comes to technology application in schools. BOU's open schooling needed to think about 'digital immigrants', which is the older generation compared to, today's students. It can be argued whether more technology should be incorporated into the classroom of today or not in Botswana. One teacher was once reported in the

Daily news of 27th November 2013 of facing suspension after he allowed students to come with mobile phones to his social studies class.

Dyman and Oestmann (2006) maintain that ICTs help young people become sophisticated problem solvers and that if technology were harnessed well in the classroom being physical or virtue, teaching instruction would be more motivating and constructive. This is a problem that calls for research to find lasting solution for quality education in Botswana. Teachers are still relying on their traditional ways of teaching rather than helping students develop the modern skills that would enable them to thrive in the presence of age of disruptive innovation states Himmelreich, (2013). Schools need to recognise that they are not only providers of information and that education needs to change or it will become irrelevant by the passage of time and Open schooling in BOU is not an except to this notion.

Using ICTs in teaching and learning requires better service models that are built around improved educational programme quality states Christensen and Johnson, (2011). Therefore, there is increasing pressure to Botswana Open University's open schooling to turn education modern so as to align it to the demands of the 21st Century. Raths (2014) maintained that social media was expanding learning beyond the school day with content and meaningful interactions on specific topics and if open schooling was to adopt that, navigation of its learning resources would be easy as learners would adopt emerging technologies with easy. When combined with meaningful engagement, technology in form of social media can be a powerful tool to reinforce learning, establish effective communication abilities, and provide the career and life skills every student in Botswana would use in the 21st Century; however that can only be achieved if institutions of learning fully understand what computer and ICT skills learners possess and how they use these skills for teaching and learning.

1.1 Problem Statement

There is widespread belief that ICTs can and will empower teachers and learners, transforming teaching and learning processes from being highly teacher-dominated to student-centered, and that this transformation will result in increased learning gains for students, creating and allowing for opportunities for learners to develop their creativity, problem-solving abilities, informational reasoning skills, communication skills, and other higher-order thinking skills posit Hamilton-Ekeke and Mbachu, (2015); Batane (2016).

If educational institutions fully understand and appreciate the computer and ICT skills the learners posses, then they stand well to offer the right technology to the learners. Data is scanty and largely based on assumption on the levels of computer and ICT skills open schooling learners of business subjects have at BOU.

The study sought to find out how the open schooling learners navigate learning in open and distance learning mode given the assumption that they are fully equipped with some ICT skills in abundance.

1.2 1 General Aim of the Research

The main aim of the study was to investigate what computer and ICT skills the business subjects learners possessed for teaching and learning at BOU's Open schooling.

1.2.2 Research Questions

The variables investigated in this study werecomputer skills, ICT skills and utilisation of the skills among business subjects' learners in Open Schooling.

The following three research questions were posited for this study:

i. What arethe levels of computer skills among Business Subjects learners at BOU's Open Schooling?
ii. What percentage (%) of business subjects learners at BOU's open schooling posses 21st Century ICT skills necessary for teaching and learning?
iii. How do learners enrolled in business subjects at BOU's open schooling perceive the value of ICT skills for teaching and learning?

1.3 Significance of Study

The main purpose of this study was to investigate how business subjects learners enrolled in open schooling utilize their ICT skills in their learning using open schooling methodology.

This study is very important because the 21st century's student teaching and learning underscores that ICTs have potential to speed up, enrich and deepen basic ICT skills posit Hamilton –Ekeke and Mbachu, (2015). The business subjects enrolled learnes in Open Schooling are given a chance to express their views, insights and suggestions regarding their way of learning, ICT skills they possess, facilities they are comfortable learning from and other academic issues towards the improvement of teaching and learning in Open Schooling.
It is also worthy underscoring that nowadays young people need new skills to learn, which include the use of technology, networks and communication.

ICT skills are increasingly required in the proffessional field and are even becoming essential. The labour market and future labour market demand competent and skilled professionals that can respond to its current demands.

2. Methodology

The study sample was guided by Zikmund, (2001) who argues that if sample is chosen properly, in quantitative method, data can be statistically identical to the population and conclusions for the sample can be inferred to the population. The study was descriptive in nature and snowball sampling technique was used so as to ensure that various groups are adequately represented within the strict limitations of research fund and time constraints.

A sample size of 223 participants was studies and data were collected using a survey questionnaire, which was tested for reliability and validity using Cronbach alpha coefficient, and confirmatory factor analysis respectively. The survey questionnaire was self-administered by the researcher using a drop-pick method during the learners' tutorial sessions, and data collected, was analysed using descriptive statistics and objectives tested with SPSS version 23.

The respondents were asked to choose from the following description ranges: 1 = very good; 2 = good; 3 = acceptable, 4 = poor and 5 = very poor. To assist in the interpretation of the results, the researcher used the following interpretive scale for the results: at most 1.50 = very good; 1.51 – 2.50 = good; 2.51 – 3.49 = acceptable; 3.50 – 4.49 = poor; and at least 4.5 – 5 = very poor.

2. Results

This section of study presents the results of the study. The first section presents the demographic information of the respondents, followed by level of computer skills on business subject learners.

2.1 Demographic details

This section of the paper presents the demographic information of the respondents.

Table 1 Summary of the demographic information of the respondents

Variable	Categories	Frequency	Valid percentage
Gender	Male	97	43,5
	Female	126	56,5
Age group	Below 16 years	21	9,5
	17 to 20 years	172	77,5
	21 to 25 years	15	6,8
	Above 26 years	14	6,3
Current level of study	JC	181	81,2
	BGCSE	42	18,8

Region your Centre is located	Gaborone	81	41,1
	Maun	37	18,8
	Kang	41	20,8
	Other	38	19,3

The results of the study revealed that majority (56.6%) of the respondents were females. This clearly means that the female respondents dominated the male respondents. The majority (77.5%) of the respondents are within the age group of 17 to 20 years. The results further revealed that 81.2% of the respondents are currently in JC level. Lastly, the results revealed that 41.1% of the respondents indicated that their Centre is located in Gaborone.

2.2 Level of computer skills

Table 2 presents the responses to the questions relating to the level of computer skills on business subject learners. The respondents were requested to respond to two questions thereof.

Table 2 Level of computer skills on business subject learners

Questions	**Mean**	**Standard deviation**	**N**
How would you rate your typing skills on the computer?	2,36	0,986	220
How would you rate your ability to search business subjects' content from the computer's internet?	2,32	1,020	220
Overall scale	2.51	0.939	220

The results in Table 2 revealed that the respondents rated their typing skills on the computer and their ability to search business subjects' content from the computer's internet "good" (item scores between 1.51 and 2.50) with the standard deviation of 0.986 and 1.020 respectively. This clearly means that the respondents are good in typing and searching for information on the internet. The overall mean value for level of computer skills on business subject learners scale was found to be 2.51, with a standard deviation of 0.939, which is classified in the "not sure" category.

2.3 The ICT skills of the students

Table 3 presents the responses to the questions relating to students' ICT skills.

Table 3 Students' ICT skills

Statements	**Mean**	**Standard deviation**	**N**
I understand the basic functions of the computer hardware.	3,51	1,004	210
I use ICT tools to learn my Business Subject(s)	2,82	1,148	213
I enjoy learning by reading from the computer screen	3,42	1,265	212
I use social media networks such as *whatsapp* and *Facebook* tolearn my business subject(s)	3,05	1,346	211
I have an online friend I have never met physically.	3,13	1,390	210
I am comfortable in browsing the internet (www) to collect learning materials in my business subject.	3,49	1,246	213
I am able to use a phone app to search business subject materials for my study.	3,46	1,247	211
I think that it is important for me to improve my use of ICT tools for learning my business subject	4,06	0,963	214
I think that using ICT tools and resources can enhance my learning of business subjects	3,81	1,029	209
I want Botswana Open University to start teaching us online	3,68	1,350	213

and stop printing study booklets			
Overall scale	3.86	0.696	214

The results presented in Table 3 revealed that the respondents indicated that they "agree" (item scores between 3.50 and 4.49) with four items. The items are "I understand the basic functions of the computer hardware", "I think that it is important for me to improve my use of ICT tools for learning my business subject", "I think that using ICT tools and resources can enhance my learning of business subjects" and "I want Botswana Open University to start teaching us online and stop printing study booklets".The respondents further indicated that they are "not sure" (item scores between 2.51 and 3.49) with the remaining six items used to measure reactions to their ICT skills. The overall mean value for ICT skills scale was found to be 3.86, with a standard deviation of 0.696, which is classified in the "agree" category.

3. Discussion of findings

The results of the study revealed that the majority of the respondents are females within the age group of 17 to 20 years. The majority of the respondents are currently in JC level and their Centre is located in Gaborone. The study found that the respondents of the study have good computer typing skills and they are good in searching for information on the internet. The results also revealed that the respondents of the study are of the view that they understand the basic functions of the computer hardware and they think that it is essential for them to improve their use of ICT tools of learning their business subjects. The respondents think that using the ICT tools and resources can enhance their learning of business subjects and the want Botswana Open University to start teaching them online and stop printing study booklets. The respondents further indicated that they are not sure that they enjoy learning by reading from the computer and they are not sure that they are able to use a phone app to search business subject materials fortheir studies. The respondents also indicated that they are not sure that they are comfortable in browsing the internet (www) to collect learning materials in their business subject. The findings concur with other reports from similar studies which argue that young people mostly in the age range of 15 to 20 years use the ICTs for entertainment and communication unlike for teaching and learning states, Dunne, Lawlor and Rowley, (2010).

The findings also augument study from Shanahan and Elliot, (2009) who posit that young people are categorised as active users of ICTs; mostly for entertainment and communication. This presents an opportunity to Botswana Open University's Open Schooling and policy planners in the University to innovate around pegagogy in the Centre and tap the enabling environment of the learners business subjects. It can be argued that modern times have presented an enabling ICT use and that potential has not been tapped. Batane, (2013) supports the finding of this study on that 75% of young people in Botswana use the internet and that young people aged 15-20 years use smart phones for entertainment and communication purposes as educators have not provided teaching and learning materials compatible with the gargets they use. The strength of computers and ICTs in education cannot be overemphasised as such trends provide various answers to all questions young people studying business subjects would be comfortable to get virtually as opposed to face to face tutorials.

5. Conclusion

The study concluded that technology ushers in fundamental structural changes that can be integral to achieving significant improvements in teaching and learning business subjects. Used to support both teaching and learning, technology infuses learning programmes with digital learning tools, such as computers and hand held devices; expands subject offerings, experiences, and learning materials; supports learning 24 hours a day, 7 days a week; builds 21st century skills; increases student engagement and motivation; and accelerates learning.It is time Botswana Open University start differentiating between occasional use of technology for supporting traditional methods of teaching and learning, which amounts to technocentrism and integrating ICT for improving the standards of teaching and learning. Open Schooling tutors need to be prepared for communicating and teaching through various media, and subject specialists in Open Schooling need to translate the tradtional teaching learning resources into online pedagogy. In this era of teaching and learning, learners need software for different media, online teaching and learning, distributed learning, use of web 2.0 technologies, open resources(OERs), Learner Management Systems and conferencing through various modes and as a way of matching the expectations from the learners.

The study gave a good insight use of computers and ICTs among business subject learners at BOU. Need is there to develop new environments that requires responsibility and self management of learners as they use ICT gargets on daily basis. Learners must be developed into good commucanicators, as well as great collaborators as they can work anywhere in Botswana collaboratively if ICTs are embraced by educators. An example BOU would use for open schooling learners would be using google drive for example; a group of students would contribute ideas and working on business studies topic at the same time. Each student having an integral role to play in the completion of the topic as the tutors would remain facilitators of teaching and learning.

6.Way forward/Implications

Based on the findings from this study, the following recommendations are made:

i. Training to be provided to tutors on pedagogy integration of computer and ICT tools and how to use them creatively, incorporating them into a participatory teaching approach in Open Schooling.
ii. Botswana Open University (BOU) management should urgently ensure that ICT facilities/infrastructure are available for learners' use;
iii. Open Schooling to integrate ICTs in to learning programmes so as to help learners improve necessary skills empowering them for the jobs of tomorrow. This helps learners prepare for a good future which is largely dependant on ICTs and computers;
iv. Botswana Open University (BOU) management should have ICT training centres in all five regional campuses for open schooling or involve ICTs in open schooling curriculum to enable learners use the opportunity to maximise their computer literacy, so they can accept and use ICTs in their everyday studies;
v. Botswana Open University (BOU) should organise ICT training programmes for students of business subjects, to expose them to useful ways of using the ICT tools and OERs, henceforth, boost their employability skills as opposed to generic ICT skills which the study pitched at high notch for learners;
vi. Botswana Open University (BOU)'s open schooling should introduce online registration to its cohorts like its done in tertiary so as to maximise the usage and ICT potentials;
vii. Reciprocating the study but focusing on all other subjects in Open Schooling with comparisons with findings from the study of business subjects.

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