STUDENTS'S PERSPECTIVES ON ICTS ACCEPTANCE AND USE IN HIGHER EDUCATIONAL INSTITUTIONS OF BOTSWANA: LIMKOKWING UNIVERSITY

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ABSTRACT

Knowledge and skills development in the use of Information Communication and Technologies (ICTs) is progressively believed to be an important facet of preparation, for participation in an information society. ICTs have been gradually infused in educational training to improve the quality of learning and teaching. The use of ICTs to support learning, especially in higher education is becoming more and more relevant and crucial across the globe. However, several studies conducted on the use of ICTs in places of learning have continually shown irregular use of computers, lack of widespread change to teaching and learning approaches even when ICTs have been availed to learners-students. Therefore this study investigated learners-students's perspectives on how they accept, uptake and use ICTs in their learning at Botswana Limkokwing University. Data collection involved the use of face to face semi structured interviews, unobtrusive observations and questionnaires. The study was guided by the modified Technology Acceptance Model (TAM2). The participants involved two set of groups of students. Those who were enrolled in the Faculty of Information Communication and Technology (ICT) and non ICT faculties. The results show that students perceive ICTs very useful in their studies. They also perceive the ease of use of the ICTs because of the basic computing skills they learn at the beginning of their studies. The results also show that students have the motivation to uptake and continually use the ICTs. The study concludes that ICTs bring forth a positive change on learning and teaching environments. The study recommends that the ICTs provided to the students should be taken care of, resources should be availed and the ICTs need full monitoring, care and repairing from time to time. The study could be of help to those who have interest on

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educational matters and policies, government bodies regulating education systems and other private parastatals interested in educational issues and information regarding the use of ICTs in learning environments.

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1. INTRODUCTION

Technology is of increasing importance in generic workforce settings such as in schools, universities and at home (EISMG, 2002). Everyday activities have been transformed by ICTs and as a result there is a growing need for all citizens to acquire basic knowledge of ICTs (O' Connor et.al., 2007). Many countries have already formulated the explicit goal of achieving in the near future ICT literacy for all students completing secondary education (EISMG, 2002). To be effective however, these programmes must be well integrated into broader policy frameworks such as those aimed at strengthening educational systems, promoting lifelong learning and facilitating workforce skills empowerment.

According to Ottesen (2006), Baskin and Williams (2006) one of the major reasons stated for promoting   ICT integration in learning include the need to equip students with the skills to participate and thrive in an information society, and the need to create highly skilled and flexible workforces. The potential for improvement of the "quality of the learning experience" and the transformation of education are other factors driving ICT integration in learning (McNair & Galanouli, 2002).

Integration and infusion of ICTs in learning environments has led to optimistic beliefs about the profound changes in the teaching and learning practices among the educational researchers and policy-makers as well as learners. Indication from the studies which have been conducted so far indicate some changes occurring in learning when ICTs are integrated into classrooms. The outcomes of ICTs have often or in most cases regarded as the positive change (Ilomaki, 2008).

According to Ilomaki (2008) investigating ICT-related issues is strongly time-related. Distribution, use, and practices, as well as individual's ICT skills change rapidly as new

applications replace old ones, and new tools and applications come on the market every month. ICTs have quickly, within the last ten years, become a part of ordinary life (Ilomaki, 2008). Throughout the subsequent years, technology has transformed from technical to communicative connotation, due to the development of new applications in the Internet. Hence, the increasing use of ICTs. Ilomaki points further that the access of ICTs has tremendously improved among learners-students and teachers across all levels of education, both at home and at school. One of the attributing factors to the said improvement is of the deployment and know-how of the necessary skills pertaining to access and usage ICTs.

2. BACKGROUND TO THE STUDY

ICT in Botswana

Botswana as a member of World Summit on the Information Society (WSIS) has put in place some Information Communication and Technology for development (ICT4D) initiatives to attain and reach WSIS goal of defining a path for countries to reach the status of an information society. WSIS's principles include building of information infrastructure through telecommunications and investments in technology, achieving universal and equitable access to information technology and making information a common goal to everyone (WSIS, 2003a; Mutula et. al., 2010). Example of these aforementioned principles is of connecting ICTs and establishing access points to various places such as villages (rural areas), universities, colleges, secondary and primary schools, scientific and research centres, public libraries… (WSIS, 2003a). The government of Botswana has put in place some plans, policies and strategies to harness the power of ICTs to drive the socio economic development of the nation. These include Vision 2016, the National Development Plans (NDP7-10), National ICT Policy (Maitlamo). Botswana government has integrated in its National ICT policy, the Thutonet initiative, which is one of the ICT4D initiatives of availing the computers to secondary schools to bridge the digital gap between urban and rural students and to promote computer literacy (IST Africa, 2011: Joseph,2012). There is also a national e-learning committee tasked with formulating and promotion of e-learning in Botswana (Egov strategy, 2011) The ministry of education is trying to encourage its partners to look at e-learning as one of the possible teaching modes in Botswana with government and other stakeholders working towards achieving that vision (Lekopanye & Mogwe, 2014).

Limkokwing University is one of the private educational stakeholders who have put forth various blended learning technologies and interactive learning applications. Limkokwing has the faculty of ICT which offers ICT programmes. There is also the faculty of Multi-media which does the cross teaching with some of the ICT modules. Students enrolled in these faculties either do the diploma or bachelor's degree programmes. There are over 20 ICT labs which are fully functional and furnished with the computers and network infrastructure. The university also has the IT department which take care and services these computers labs and network related issues. The school library has also the computers which students access when accessing the e-library resources.

3.   LITERATURE REVIEW

3.1 Technological relevance to learning

According to Basalla (1987), all technology is a continuum of the present experiments and experiences of technology, stimulated by socio-economic and cultural factors. Computers were used elsewhere in society and these practices were also introduced into educational applications. The existing educational model and conceptions then formed the structure and the practices of using these applications (Ilomaki, 2008). Reiser (2001), points out that, at the beginning of major ICT use in education, two major trajectories arose in educational technology: computer-supported learning (also referred to as computer-aided learning and computer-based training) and the use of computer as a tool. According to Reiser, the first trajectory consisted of diverse types of educational softwares, which still has a resilient representation in learning objects. The second trajectory of using computers as tools for learning was also important then, and the most popular application was word processing. Some educational tools were also introduced, as well as the programming languages. Presently, computer-as-a tool trajectory is still thriving, and the improved usability of various softwares has helped to bring the same digital applications into education as elsewhere in the society. All the aforementioned trajectories were a journey of the 1980s (Reiser (2001).

According to Ilomaki (2008), from the beginning of the 1990's, the Internet revolutionarily changed the supply of technology, also education. The Internet offered a tool for delivering

learning material (e.g. learning objects), an environment for discussions and for publishing, it offered better e-mail applications, and it is a huge information source for searching. The Internet has greatly transformed several everyday operational and shared practices (Ilomaki (2008). Ilomaki argues further that the adoption of ICT was regarded an important even for national economies. However, with time, the overestimated expectations have come true but on a much lower level.

3.2 Technological acceptance

One of the attributing factors to the acceptance and adoption of technology could be 'affordance. According to Gibson (1979) affordance is something that an environment offers or provides; properties that the user perceives. John and Sutherland (2005) summarize the use of 'affordance' into three different approaches: affordances are about effectiveness, about perception, and about cognitive constructs. According to Turner (2005) affordance and use contexts are one. From a design perspective, affordance is not an intangible, elusive property of interactive systems, it might better be thought of as a boundary object between ''use'' and ''design for use''.

3.3 Technology Acceptance Model

When dealing with technology acceptance, use and adoption, several studies have examined and used Technology Acceptance Model (TAM). TAM was initially proposed by Davis in 1986. According to Legris, Ingham and Collerette (2003), TAM has been used to help explain and predict user behavior of information technology. TAM is considered an influential extension of Theory of Reasoned Action (Ajzen & Fishbein, 1980). TAM provides a basis of how external variables influence belief, attitude, and intention to use. This model posits two cognitive beliefs namely: perceived ease of use and perceived usefulness. TAM implies that, the actual adoption and use of a technology is influenced directly or indirectly by the user's behavioral intentions, attitude, perceived usefulness of the system, and perceived ease of the system. According to TAM, they are also external factors that affect the intention and actual use through mediated effects on perceived usefulness and perceived ease of use. Figure 1 depicts the original TAM (Davis, 1989).

Overtime, TAM evolved and TAM2 came in the picture. TAM2 is the extension of the original TAM. TAM was modified or extended to explain perceived usefulness and usage intentions including social influence (subjective norm, voluntariness, and image), cognitive instrumental

processes (job relevance, output quality, and result demonstrability) and experience. TAM2 comprises of only four constructs. There are two key differences between the original TAM and TAM2. Firstly, in the original TAM, the two constructs: "perceived usefulness and ease of use" affect attitudes toward using a technology, which in turn affect behavioural intention, and then actual use. In the modified model (TAM2), the "attitudes" factor and external variables are taken out to simplify the model. Secondly, a link joining perceived ease of use and behavioural intention to use is included in the modified model even though it is not present in the original TAM. This was done because many empirical studies of TAM have included this link and found a significant relationship between the two factors (Park, 2009).
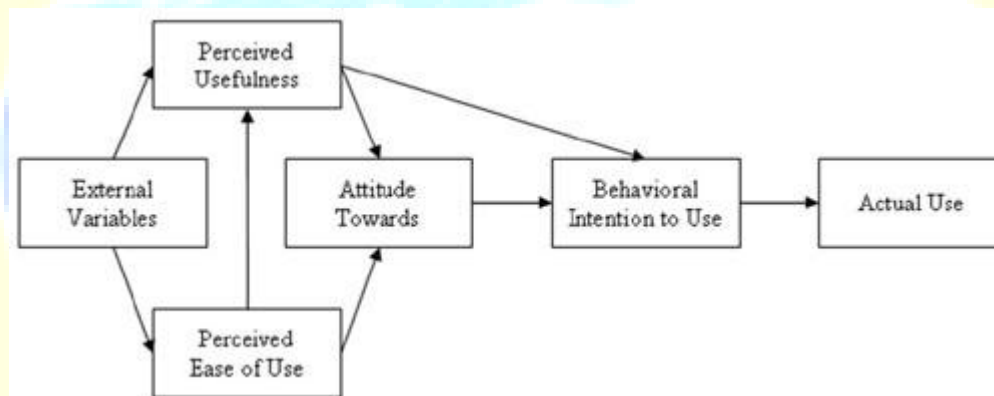

Figure 1: TAM (Davis, 1980)

4. STUDY OBJECTIVE

The purpose of this study was to investigate the students-learners's perspectives regarding their use, uptake and acceptance of the ICTs in their learning.

4.1 Interview Questions

The interview guide helped and provided a basis for the actual questions which were asked during data collection period of the study. The questions which were asked during data collection phases were designed to characterize university students-learners's use of technologies (both in formal and non-formal learning contexts) and also to analyse the students-learners's perceptions of the use of ICTs in different learning dimensions. The interview guide was made based on the TAM2 constructs as it was used to guide the study. It also seemed appropriate to use TAM2

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because of its relevance to the study since similar studies on the technology acceptance have used it. The interview guide consisted of the following four major questions listed below as:

1. How do students-learners perceive the usefulness of ICT in their learning?
2. How do students-learners perceive the ease of use of the ICT in their courses/learning?
3. How are students-learners, up-taking, using, accepting and adopting ICTs in their learning processes?
4. Are the students-learners willing to continue using the ICTs in their learning?

5. METHOD

This study employed a qualitative approach which was interpretive in nature. The intension was to gain knowledge and deep insights by understanding the direct experience of the students-learners with ICTs. The data was collected via face to face semi structured interviews and unobtrusive observations and a short questionnaire which was used to capture their geographical information. The method applied in this research was mainly based on theoretical sampling. Data collection was terminated when theoretical saturation was reached.

6. DATA COLLECTION

A series of semi-structured interviews and unobtrusive observations were made to gather data for the study. The reasons for using these methods for collecting data was mainly because the researcher wanted to gain knowledge of the participants experience with ICTs, their attitudes toward ICTs, and their intent of using ICTs in their learning. The interview is normally used in situations like this because of its ability to give rich insights into people's meanings, experiences, values, aspirations, attitudes and feelings. The semi-structured format provided a desired balance between consistency and flexibility in the investigation, and enabled the collection of specific information as well as deeper exploration of each participant's experience (Merriam, 1998).This also allows participants to be free in sharing out the information, they are not limited as in the structured interviewing. All interviews were recorded and transcribed to themes and categories according to the interview guide.

The unobtrusive observations were made as a follow up of the feedback obtained when interviewing the participants to cross check if what they said is actually happening on ground. This was done unobtrusively so that real true data could be captured without any bias as the participants could change and behave differently if they were aware that they were being

observed. Even though these observations were unobtrusive, all the participants were asked for their consent to participate in the study and they volunteered willingly knowing their rights and their ethics.

7. THE PARTICIPANTS

The initial sample comprised of 120 students who were enrolled for Introduction to computer skills, Principles of Web Design and Web Programming Techniques courses. The students doing Introduction to computer skills were first year students across all the faculties in the university. The Web design and Web technology courses were done by students belonging to the Faculty of ICT or Multimedia, doing second year or upper levels. These groups were selected because the researcher wanted to get various and diverse insights and understanding of both ICT and non ICT students's perspectives. The students ages ranged from the 17-35. The students were males and females, young and matured ones. This sample was representative of the gender balance and proportional age representation in the student-learner population.

8. ANALYSIS

The analysis was made based on the relevance to the research questions. Recurring concepts were grouped together and formed emergent themes and categories. This approach is consistent with a description of phenomenological data analysis from Creswell (1998) where data are "transformed into clusters of meaning", and "tied together to make a general description of the experience". Categorisation process involves the sorting of data into categories or groups with identifiable commonalities/recurring themes reflecting the purpose of research (Merriam, 1998; Bell, 2005).

9. RESULTS AND DISCUSSIONS

The objective of this study was to investigate the students-learners's perspectives regarding their use, uptake and acceptance of the ICTs in their learning. Supporting this objective were the following study guide questions which were asked to the student-learners.

  1. How do students-learners perceive the usefulness of ICT in their learning?
  2. How do students-learners perceive the ease of use of the ICT in their courses/learning?

3. How are students-learners, up-taking, using, accepting and adopting ICTs in their learning processes?

4. Are the students-learners willing to continue using the ICTs in their learning?

The results of this study were categorised in the following themes which were guided by TAM: Perceived usefulness, perceived ease of use of ICTs, ICTs uptake and continuous use of ICTs.

Perceived usefulness

Question 1: How do students-learners perceive the usefulness of ICT in their learning?

When asked how they perceive the usefulness of ICT in their learning, majority of the students said they perceive ICT **very useful** and **helpful** in most of majority of the tasks and assignments they carry out. They gave examples of the projects which are entirely dependent on ICTs, which were a proof of how ICTs are very useful to their learning process. They hinted out that some of the tasks cannot be done well using the traditional methods of learning. "Some ideas are better implemented and carried out using the help of ICTs…" One of the interviewees said. This point was repeatedly lamented by most of the students who were doing architecture and cited the softwares they use as examples (e.g. CAD). Similarly the students from the faculty of ICT also pointed this out and stated that most of their courses in their programmes of study require the use of ICTs: softwares, hardwares and Internet infrastructure.

Perceived ease of use

Question 2: How do students-learners perceive the ease of use of the ICTs in their courses/learning?

Majority of students, especially those who were not ICT students, who were doing the ICT modules as cross or inter faculty teaching highlighted that even though ICTs are helpful to them and easing their learning, they however have challenges of actually using the technology. They have indicated that most of the ICTs especially some of the softwares need or require the skills to operate them. They further stated that even certain modules requires them to further use ICTs based on certain specialised skills such as programming and networking skills. The students have indicated that those ICTs which do not require intense skills are easy to use, especially those which just requires basic ICT skills. The ICT students however hinted that they learnt the skills they apply in using the ICTs. The students have stressed that ICTs are ease to use if you have learnt the necessary skills to use such ICTs. Just like those non-ICT students, they have pointed out that without relevant necessary skills, the use of ICTs can sometimes be difficult.

ICTs uptake

Question 3: How are students-learners, up-taking, using, accepting and adopting ICTs in their learning processes?

The students have stated that most of their modules require them to use ICT on daily basis to do the assignments. They have indicated that, initially as first year students, they do an Introduction to computing module which equips them with the necessary ICT basic skills. As the semester progresses the other modules offered equips them with advancing ICT skills. Therefore the students pointed out that, they fully uptake and accept the use of the ICTs in their learning especially the Internet and various softwares they use as per their programmes of study. They have stated that they visit the e-library to do some online searches which help them complete their assignment well on time. They have pointed out that they use ICTs in various ways for example when typing their assignments, when researching, communication, printing their assignments, photocopying, binding, laminating their assignments, downloads as well as for pleasure and entertainment purposes.

Continuous use of the ICTs

Question 4: Are the students-learners willing to continue using the ICTs in their learning?

The students have highlighted that they will continue to adopt the ICTs and make use of them because most of their assignments are ICT driven. Whether they like it or not the circumstances propels them to use the ICTs. However, when asked if the circumstances were not forcing them, what were they going to do, some students especially non ICT students indicated that if their programmes of study did not require ICTs, they were going to do the assignments in a traditional way because the traditional way does not require skills. However majority of the students have pointed out that they will continue to use ICTs because of its advantages as compared to the traditional way of learning. They have stated that ICTs helps to speed up their efficiency in carrying out their school work. They have also stressed the importance of ICTs in research, especially the use of Internet as compared to just traditional way of accessing the books at the library.

They have shown that you can actually sit wherever you want without having to go to the library and access online and electronic content via wireless technology (WIFI).They have also

indicated that they can actually collaborate with their peers through the use of ICTs across the globe. Also, they use the ICTs such as the social platforms to communicate and share important information for their courses other than entertainment. However the students have pointed out that the continuous use will be only possible if provision of suitable and working ICTs resources are made available by the institutions for example, well working Internet subscription to online databases, working computers in the labs and trained personnel (lectures) who teach them on how to deploy and use the ICTs.

10. CONCLUSION

Conclusion that can be made from this study based on the students's perspectives is that, indeed there is no doubt, ICTs enhances and aid in the learning and teaching processes. From the results, it can be said that the current generation of students are essentially in a different situation from previous generations, with the large majority of students having ICT skills that are of a different type, often better and wider; even the time spent using a computer efficiently supports the improvement of ICT skills. It is obvious that for the younger generation using ICT is easy and ordinary, characterizing a life-style consisting of the functions of both working and learning, as well as functions of leisure time, like gaming or uploading and listening to music. In the past years, one only relied on the hardcopy prints provided by the libraries built from mortar and bricks. However, with today's advent of technology, a student can just sit on a table from home or wherever and have access to various kinds of information electronically via the use and help of Internet technology. A student can be able to do lessons and tutorials online through video or tele-conferencing with their lectures or their peers. Information is disseminated and assimilated in various ways and formats with the help of ICTs. Therefore it can be concluded based on the students's perspectives that indeed ICTs does bring change in their studies. ICTs enhance, improve and aid learning.

11. RECOMMENDATIONS

Students have voiced out that even though the technology is made available, sometimes it is not enough because it is left un-serviced and thus disrupting their lessons for example non-operational computers and network. Based on this challenge, a recommendation can be made that the university management's IT department fully service and check on all the IT related problems on daily basis. Routine monitoring should be made.

They have also pointed out that the computers sometimes are not enough for all of them, non-operational or have missing hardware such as the mice, damaged drivers hence this cause delays and leads to late submissions of their school assignments. The recommendation is that the management should try by all means to provide enough resources, they should use the registration and registry documents to see the number of enrolled students so that they can have a rough estimate of how to provide resources which will be enough for all of them.

They have also voiced out that some technology need certain expertise which sometime they need to be trained on them before they can actually use them. A recommendation can be made that before students are given certain systems or technology to use, they should be trained on using it, be given the skills.

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