EDUCATORS' PERSPECTIVES ABOUT ICT ENABLED TEACHING

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Abstract

The availability of Information and Communication Technologies (ICT) in education has not translated to pedagogical use in Higher Education Institutions (HEI), particularly in the developing nations context where use of ICT based paradigms like e-learning is invisible. This study investigated the educators' perspectives about ICT enabled teaching strategies by employing quantitative and qualitative data collection instruments. Findings revealed that despite valuing these strategies, educators have institutional and technological concerns requiring redress. Contrary to existing literature, generation gap, ICT literacy and individual values had no effect to the way the cohort perceives ICT based teaching. Instead, university's' structures, management decision making and the ICT implementation culture were major themes emerging from this study, as the source of the sporadic ICT utilization that translates to the second order digital divide, a problem of concern both in theory and practice.

Keywords

Pedagogy, Information and Communication Technologies; Higher Education Institutions, Educators' Perspectives, Developing Country, Second Order Digital Divide

1. Introduction

There is a widespread embrace of Information Communication Technologies (ICT) not only in business and social spheres, but also in higher education. This trend is attributed to the reduced cost of ICTs, their ubiquity and the leapfrogging of ICTs particularly in the developing world. The affordability, availability and ubiquity of ICTs have necessitated their integration in the teaching and learning practice. Most common ICT enabled paradigms are the electronic learning, mobile learning, blended learning and cloud learning. Although not originally intended for teaching and learning, the social media tools have found their way into education. For instance, YouTube is one such tool that has been effectively used in teaching and learning (Almoswai & Rashid, 2017), Being key for modernization, personal growth and social development, educators and students alike are engaging ICTs to enhance teaching and learning in the preparation of the labour demands and survival skills for the 21st century. ICT based education equips the current students affectionately known as the Cilliers (2017) "Generation Z learners" with the necessary technological Agena (2013) skills to compete and survive in the global digital environment. It is on this premise that the higher education institutions in the developing world have been compelled to jump on to the technological wagon and experience the ICT affordances currently enjoyed by the counterparts in the developed world. More so, one of the eight millennium goals (MDG)s make emphasis on the need for ICT integration in education for the betterment of the students' future. In the developing Africa's higher education is the brain drain crisis where experts migrate to the developed world in search of greener pastures, Al-Harbi (2011) increasing the need for ICT enabled teaching and learning as means to ostensibly ease the strain on the scarce educators in comparison to the increased student enrolments.

E-learning is the ICT based teaching and learning strategy that has enjoyed popularity in higher education. It is defined as an ICT based education strategy with the capacity to achieve pedagogical benefits (Mlitwa, 2007). There are several definitions of e-learning (Njenga, Cyril, & Fourie, 2010), however, in this research it is defined as the use of telecommunication technologies to deliver information communicated synchronously or asynchronously through electronic media (Al-Harbi, 2011). E-learning is a low cost, flexible strategy that facilitates task collaboration, cooperation, learner centeredness, learning material in various formats, reduced negative environmental impacts as well as learning that is time and space independent (Chen &

Tseng, 2012). E-learning is facilitated by Learning Management Systems (LMS) (Martín-blas & Serrano-fernández, 2009), a computer software used for creating, managing, delivering and retrieving course content such as Blackboard, SMILE, MOODLE, Sakai etc. These authors also show that the LMS have the capacity to handle content in different formats, real-time interactions, instant feedback, performance evaluation, assessment, communication, content, administration via the internet.

E-learning system tools can complement face-to-face (f2f) traditional teaching and learning settings in a blended paradigm form. The intention is to offer pedagogic richness, flexibility, increased cost-effectiveness, reduction in the need for classrooms, increased engagement, collaboration and increased higher quality learning (Carbonell, Dailey-hebert, & Gijselaers, 2013). Pedagogically, e-learning is the art of teaching learners to learn and an active process of knowledge production, transmission, acquisition and reproduction through activities (Mayes & Freitas, 2004). It is these affordances that have made both e-learning and LMS attractive ICT enabled teaching and learning strategies to higher education institutions. Despite the attractiveness and affordances of such ICT enabled teaching and learning strategies, their utilization in the developing African countries' higher education is still at its infancy (Bhuasiri, et al., 2012). ICTs are yet to be used for pedagogy in these contexts, nevertheless, Mbengo (2014) the educators' perspectives regarding the ICT enabled teaching are neither known nor consistent. This is a problem of concern to both practice and theory that is requires attention as indicated in the section that follows.

2. Problem Statement

The concerns of the developing African countries' educators regarding ICT enabled teaching strategies are scarce in literature (Mbengo, 2014), Despite the affordances of the ICT enabled teaching strategies like e-learning to provide important tools for the achievement of pedagogical goals (Heshmatpanah, Ali, & Neyestanak, 2011; Lonn & Teasley, 2009), their uptake is still low and invisible in comparison to their proliferation, hence the resultant second order digital divide problem. It is on this background that key subsequent question is asked.

2.1. Research Question

The key question answered by this research is:

What are the developing African country's educators' perspectives concerning the pedagogical value of the ICT enabled teaching and learning strategies"

This research question has the potential of establishing the perspectives on the ICT enabled teaching and learning strategies as told by the educators from the developing African country context. The perspectives will include their fears, concerns as well as their priorities.

This inquiry was also influenced by Dube and Scott 92014)'s earlier study with findings indicating an insignificant use of e-learning system tools in pedagogy. Similarly, Mcloughlin & Lee (2007) had noted that the e-learning platforms are not used in accordance with their intended pedagogical consequences, but rather as course information transmission tools than for pedagogy converting learners into passive consumers than active participants and co-producers of content. (Wang et al., 2013) also acknowledge that most educators' separate pedagogy from ICTs such as the e-learning systems when they design courses and they hardly use such platform features to create interactive learning activities. This research therefore makes an explanatory contribution that fills the gap currently existing in literature relating to the educators' perspectives about ICT enabled strategies as means for elevating pedagogy, which is scarce (Mbengo, 2014). Such an insight not only has a practical benefit to the researchers interested in ICT based education, but also has an empirical benefit to the university management and the current generation of students who are robbed of the returns from technological investment and frustrated by the ICT disconnect teaching methods out of synchrony with ICTs respectively. The findings also help the education management to make informed decisions regarding future technological choices and implementations that favour both the educators and students alike. It assumes that if the educators' fears and concerns are addressed, then the synergistic relationship between pedagogies ICT can be established and in turn, the prevailing second order digital divide could be reduced (Schmid et al., 2014).

It is on this premise that the research yielded the proceeding results after qualitative and quantitative data were collected based on questions guided by the morphogenetic approach.

3. Methodology

A mixed data collection and analysis approach was employed in this study not only for complementary purpose, but also to increase the validity of collected data. Thirty paper-based questionnaires were distributed to the educators currently teaching one of Zimbabwe's sixteen state universities. Since three of the thirty questionnaires had missing entries and outliers, only twenty-seven successfully completed questionnaires satisfied the data cleaning process, achieving a 90% response rate. The educators were randomly selected from the purposively sampled departments in six faculties. Follow up interviewees were conducted with five educators who voluntarily participated and found no offence in having their responses recorded on a voice recorder. The qualitative research approach enabled the capture of the educates' lived experiences with the ICT enabled teaching strategy. This was done to evaluate the validity as well as to achieve clarity, completeness and complementarity of the data collected through questionnaires, while the quantitative data were analyzed on a statistical package of social sciences (SPSS), qualitative data were analyzed on an ATLAS ti, yielding the results discussed in the subsequent section.

4. Findings and Discussion

The research findings denote the several educators' concerns regarding both the choice and implementation of the institutional e-learning system. The findings show that these concerns are because of the interplay between institutional structures and educators' the focal intended e-learning system users. This is contrary to the upward conflation theories with a belief in voluntarism where educators are considered the major players in the underutilization of e-learning systems through their negative attitude and low efficacy towards the technology. This also contradicts the deterministic school of thought, which believes that the underutilization of ICTs like e-learning systems is determined by solely the learning institution structures.

From the findings, it is neither the institutional structures nor individual educators alone who are the source of e-learning systems pedagogically concerns. It is however the relationship between these two structures which are of concern since their separate properties condition the continued use or the abandonment of the e-learning system tools. In this regard, we found that the case study institution, a university of science and technology has made all necessary efforts to make sure that the e-learning system tools and the compatible devices are available for use in

pedagogy. This is in addition to the affordability of both the computing devices and the e-learning systems technology that have reduced costs and open source respectively. The main issue of concern then is usability, which is also neither emanating from self-efficacy nor negative attitude as depicted in Table 1.1.

Table 1: *Educators' Attitude towards E-Learning System*

Attitude	Number of Educators	Valid percent
Positive attitude to ICT enabled teaching	24	88.9
Negative attitude to ICT enabled teaching	3	11.1
Total	27	100.0

Table 1.1 depicts that the surveyed educators value e-learning system in pedagogy. What is puzzling being the contradiction between e-learning system availability and usability as revealed in Dube & Scott (2014)'s findings that an insignificant number of the educators frequently integrate the e-learning system tools into the teaching practice contrary to the verified pedagogical benefits of ICT enabled teaching, which is well documented in literature (Soong, Chuan, & Chai, 2001).

When asked if the educators were ICT literate, they resoundingly professed both computer and digital literacy. Of the twenty-seen respondents, 95% were confident of the ICT literacy while only 5% confessed to their computer and digital illiteracy since they lacked the skills required for the effective use of ICTs teaching. Figure 1 shows the ICT skills level of the educators on a scale from Excellent ICT skills to no ICT skills.
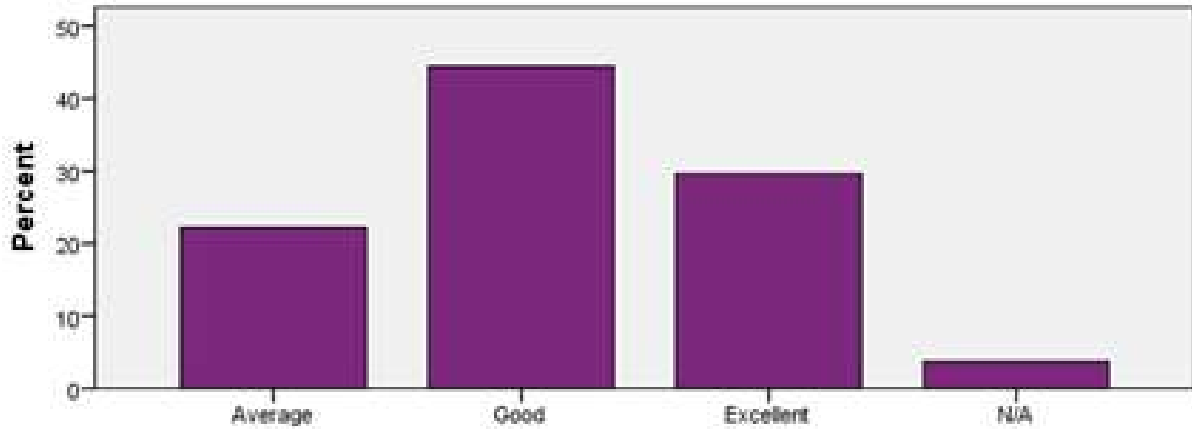
Figure 1: *Educators' ICT Literacy Skills*

As shown in Figure 1, the educators' perceptions and use of ICTs is not influenced by ICT skills and literacy. This is contrary to previous ICT acceptance studies indicating that the use of ICTs is influenced by the level of ICT skills differentiated by the generation gap. For instance, Prensky (2001) argues that the educators teaching at the universities qualify in the class of digital immigrants as opposed to the current generation of students they teach who passionately termed the "digital natives" due to their comfortably use of digital technologies. Prensky justifies this generation gap based on the presumed lack of ICT skills and digital illiteracy of the older generation of educators who are considered digital immigrants because they were born prior to 1980.

However, our findings contradict this view since Table 1.2 depicts 95% of the digital skilled and ICT literate educators lie in the so called digital immigrant category, but they are the same cohort who have tried to integrate the institution's e-learning system tools more than the younger educators in the digital native category. Both the digital immigrants and natives alike are no longer integrating ICTs in teaching, particularly the institutional e-learning system, despite their digital skills and ICT literacy an indication of the existence of underlying issues.

Table 1.2: *Age Versus the use of the E-Learning System in Teaching*

Age related use of the e-learning system			Sakai Use		Total
			Yes	*No*	
Age	26-35	Count	5	4	9
		% within Sakai Use	33.3%	36.4%	34.6%
	36-45	Count	4	5	9
		% within Sakai Use	26.7%	45.5%	34.6%
	46-55	Count	5	2	7
		% within Sakai Use	33.3%	18.2%	26.9%
	56-65	Count	1	0	1
		% within Sakai Use	6.7%	0.0%	3.8%
Total		Count	15	11	26
		% within Sakai Use	100.0%	100.0%	100.0%

Table 1.2 shows that of the twenty-seven respondents, fifteen have tried to integrate the institutional e-learning system in their teaching practice. However, although equipped with ICT skills, these educators; have since stopped integrating the ICTs in their teaching practice, an indication that something is not right. Whatever the issue is, it does not affect the so called digital immigrants alone but also the digital natives since in Table 1.2, only 33.3% of the educators who attempted the e-learning system are the presumed digital natives while 66.7% are the digital immigrants. This is evidence of that no correlation exists between age and the positive attitude towards the ICT enabled teaching.

Per the results in Table 1.2, 71.4% and 100% of the educators in the age categories 46-55 years and 56-65 years respectively actively engage the e-learning tools into the teaching practice while 55.6% and 44.4% in the 26-35 years and 36-45 years' age groups are using the e-learning system tools in teaching. The analysis of the collected quantitative data demonstrates that the educators neither fear nor despise the effectiveness of the e-learning system tools in education. Nonetheless the qualitative data has evidence of the concerns emanating from the interplay between individual educators and the institutional structures which appears to be an influential factor of concern as it has the capacity to enable or constrain the use of the available institutional e-learning system. For example, the respondents indicated that they preferred MOODLE to the Sakai, LMS, the current choice of the institution. the respondents were concerned about the rigidness of the Sakai as opposed to the flexible features of the MOODLE LMS. Sakai, an LMS that was implemented without prior consultation with the concerned educators, the LMS was not

properly customized and crushes frequently due to its failure to handle multi users. This disrupts teaching and learning, mainly the online tests and quizzes. The LMS was also criticized for missing a feature to stream audio and video lessons. All these problems are attributed to the management's top down approach in both the choice and implementation of the institutional Sakai LMS, without consultation, hence the conflict leading to the refrained usage of the technological investment.

Another issue of concern regarded the quality and adequacy training on how to use the institutional e-learning system. While the institution schedules training program for the educators on how to use the institutional choice of e-learning system in pedagogy, the respondents indicated that this is not adequate as shown in table 1.3.

Table 1.3: *Adequacy of E-Learning System Training*

		Percent	*Valid Percent*	*Cumulative Percent*
Valid	No	69.8	74.0	74.0
	Yes	24.5	26.0	100.0
	Total	94.3	100.0	

Another issue of concern regarded the quality and adequacy of training on how to use the institutional e-learning system. While the institution schedules training program for the educators on how to use the institutional choice of e-learning system in pedagogy, the respondents indicated that this is not adequate as shown in table 1.3. In addition to the training is the lack of user manual concern. Per the educators. Neither a user manual is nor online help is accessible to educators for guiding them use the institutional e-learning system manipulation or to solve encountered challenges. Furthermore, it takes time to get help from the department responsible for manning the e-learning system. However, per the institution authorities, there is a training program scheduled for once at the end of each semester during the vacation, which has always been characterized by low turn up. Accordingly, a user manual is also available as a soft copy for those who request for it. However, there is a shortage of staff to respond to the educators' problems with the e-learning system.

The educators were also concerned about the lack of recognition through incentives to motivating frequently and effective integration of the e-learning system tools in the teaching practice. However other educators indicated that they effectively taught through the traditional face-to-face mode than the ICT enabled one and therefore indicated that forcing the latter on them violated their academic freedom. In this regard, one educator had this to say:

"when physically present in the classroom during a lecture, I can observe each student to identify the signs of confusion or misunderstanding and further elaborate to such ones so that they move at the same pace with the rest of the class".

Similar sentiments were acknowledged by another educator asserting that *credibility is lost if students must operate on their own without the presence of the educator particularly when taking assessments because you will not be sure if you are assessing the actual student or a colleague did it on their behalf.".* Although in the research findings is evidence of the high value attached by the educators to ICT enabled teaching, several concerns have been raised that constrain the educators' successful integration of ICTs in teaching and learning within the learning institutions of a developing country.

5. Conclusion

The research quantitative and qualitative data revealed that despite having positive attitude towards e-learning as a pedagogical tool, they however had concerns that needed immediate redress. These included e-learning system selection, implementation, training, user support, lack of incentives, user manual and academic freedom. From their perspectives, these concerns are biased towards blaming the institutional structures. The educators' sentiments are acknowledged in Vehovar, et al., (2006) suggesting that nonusers of ICTs would be more willing to engage with new technology if their assumptions, fears, and preconceived ideas about ICTs are properly addressed. However, our analysis indicates that not only the institutional structures but also agential structures (educators) have a major role to play in either promoting or resisting the integration of e-learning system tools in pedagogy**.**

5.1. Limitations

The study was limited in scope. The sample size was too small to make valid generalizations. Twenty-seven educators are an insignificant number in comparison with the population of more than four hundred educators. It is also possible that the random sample of educators who participated in the study share similar perspectives of the IT based teaching that are different from those educators who did not participate in the research. Furthermore, the perspectives and beliefs of five educators who were interviewed are not representative of what can be called the shared meanings of the educators' lived experiences with the ICTs.

5.2. Further work

The preceding limitations would need to be addressed by conducting a study on the perspectives of the developing African countries' educators' perspectives of ICT based teaching that are drawn from not only a larger sample size, but also from multiple cases to achieve more valid generalization.

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