

Assessment of Perceived Ease of Use and Instructional Use of ICT by Lecturers in Technical Training Institutions in Kenya

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ABSTRACT

In the past ten years, Information Communication Technology (ICT) has become an essential part of our learning and development in education. The rapid development of these new technologies coupled with the worldwide challenge to educate all children has led to a global reform and development of teacher education and motivated educational Institutions to redesign and restructure their teaching methods to enable students equip themselves for the future. The main purpose of this study therefore was to explore the relationship between Perceived Ease of Use and instructional use of ICT by Lecturers in Technical Training Institutions in Kenya. The study adopted the quantitative research design. A sample size of 629 respondents was drawn from a total population of 2909 Lecturers in Technical Training Institutions in Kenya. Data were collected using questionnaires. The quantitative data obtained from the administrated questionnaires were analyzed using descriptive statistics. The findings indicated that use of ICT by lecturers' is perceived to greatly improve instruction. The study recommends that lecturers be encouraged to use ICT for instructional purposes because it greatly improves the passage of instruction.

Key Words: Instructional Use, Information Communication Technology, Perceived Ease of Use, Technical Education, Kenya

INTRODUCTION

The field of education has been affected by Information Communication and Technology (ICT) which has undoubtedly affected teaching, learning, and research (Yusuf 2005). Furthermore, Al-Ansari (2006) posits that a great deal of research carried out has proven the great benefit ICT has on the quality of education. According to Davies and Tearle (1999), Lemke and Coughin (1998), ICT has the potential to accelerate, enrich, and deepen skills, to motivate and engage students, to help relate school experience to work practices, create economic viability for tomorrow's worker, as well as strengthening teaching and helping schools change. Some educational Institutions in Kenya, have subscribed to e-resources consortiums e.g., Kenya Library Information Services Consortium and Kenya Education Network that have boosted access to educational resources. Some Institutions have also gone ahead to start offering e-learning, increasing access to education through instructional use of ICT. Kenyatta University a chartered public university in Kenya can be a reference point in regard to embracing e-learning as it offers virtual learning to Open, Distance and e-Learning students (Kenyatta University).

According to Pelgrum (2001), many school leaders still perceive the lack of ICT-related knowledge of teachers as a major obstacle to the realization of their ICT-related goals. The literature describes the kind of skills teachers may need when integrating ICT in new student-centred learning approaches. However, identifying which competencies each teacher needs to acquire is far from simple, as this depends very much on the circumstances of their particular school. According to Davis, *et al* (2009), personal teaching styles also play a major role and, 'one size fits all' approach does not usually work. Therefore, the need to recognize that substantial learning can take place while teaching, and even learning, from students this can easily be achieved through use of ICT.

Global organizations have joined forces with national governments, ministries, and Institutions in implementing ICT in different sectors. Institutions of learning are reforming their systems to accommodate new media of learning. Within this framework, Africa is seeking to establish and improve its competence in ICT. In 2002, African states established the NEPAD (New Partnership for African Development) whose objectives strongly focus on the dual strategies of ICT Development (ICTD) and ICT for Development (ICT4D). The World Summit for Information Society (2003), identified a significant role of information and communication technologies in strategies for African development.

On ICT integration in Technical Training Institutions in Kenya, a draft ICT lecturers' competencies framework and e-resource Centre have been established. Eight (8) technical Institutions have started offering Cisco Networking Academic Programmes meant to provide trainees with industrial-valued certificate in skills to repair and maintain computers. A sensitization workshop and training of teachers on the application of ICT to teaching, learning, and management has also been undertaken. As a way of enhancing greater application of

ICTs in Technical and Vocational Education and Training (TVET), the Ministry of Education Science and Technology has developed a strategy for ICT integration in TVET; connected 43 TVET Institutions to internet; started e-learning in some programmes and integrated digital literacy course in TVET curricula (Education Sector 2013/2014-2015/2016 Medium Term Expenditure Framework, 2012).

Continuing education models that will meet workers' lifelong learning needs have to be relevant and flexible to provide just-in-time learning without distance. ICT can play a crucial role in removing distance from education and in developing a lifelong learning culture in TVET. In spite of these potentials, little is known regarding the instructional usage of ICT in Technical Training Institutions in Kenya. Therefore, it is against this background that the present study based on to assess perceived ease of use and instructional use of ICT in Technical Training Institutions in Kenya.

The institution instructional environment impacts on students learning differently. These critical issues exist in the physical, academic and social dimensions of the institution. Research studies indicate that students are negatively affected by poorly equipped learning environments. This problem requires urgent attention as it affects the quality of instruction. Prior empirical studies have strived to explicate the determinants and mechanisms of users' adoption decisions on the basis of the Technology Acceptance Model (TAM) (Davis, Bagozzi, and Warshaw, 1989; Taylor and Todd, 1995; Venkatesh and Davis, 2000) with the conviction that the adoption process influences successful use of particular technology systems (Karahanna, *et al.*, 1999; Liao, *et al.*, 2009).

In East Africa, Zigama (2010) investigated the factors affecting primary school teachers' attitudes towards the use of ICT in education in Rwanda, and found out that primary school teachers on overall had a positive attitude towards the utilization of ICT in education. A few studies have been conducted in Kenya on acceptance of instructional use of ICT. While investigating the factors influencing teacher educators' level of Information Technology Integration in teaching in Primary Teacher Training Colleges (Chemwei, 2013) found that that the level of adoption of ICT and integration were low in Kenya. Furthermore, Wanjala (2010) carried out a study on factors affecting the integration of computers in mathematics instruction in secondary schools in Kenya and found out that teachers' attitudes, self-confidence, perceived usefulness/relevance, accessibility, pedagogical practices and policy formulation were among the determinants to teachers computer technology use.

It is difficult and may even be impossible to visualize future learning environments that are not supported, in one way or another, by ICT. With the widespread adoption and use of ICT in the world, especially by the youths who are at times referred to as the 'digital generation', it is clear that ICT will affect the complete learning process today and in the future. From the above review, it is evident that little research has been done on Perceived Ease of Use and instructional use of ICT. Therefore, the researcher in this study, tried to address this gap by investigating Perceived Ease of Use and instructional use of ICT by Lecturers. The researcher aimed at reporting the perception of lecturers towards Ease of Use of ICT in Technical Training Institutions in Kenya. Therefore, it is against this background that the present study is based on to assess perceived ease of use and instructional use of ICT in technical training institutions in Kenya.

The findings of the study will provide insightful reference for educational policy makers, and would benefit a cross-section of education stakeholders, researchers, and scholars in Kenya. The study would also add knowledge to the area of educational policy. Therefore, it is against this background that the present study is based on to assess perceived ease of use and instructional use of ICT in Technical Training Institutions in Kenya. The specific objectives of this study were to:

- i) Establish Lecturers, ease of learning to operate ICT;
- ii) Determine Lecturers' flexibility of interacting with ICT;
- iii) Examine the mental effort required by Lecturers' to interact with ICT; and
- iv) Assess the effort required by Lecturers' to become skilful at using ICT.

METHODOLOGY

This study was conducted on Lecturers in Technical Training Institutions in the Republic of Kenya. The research adopted the quantitative research design as it tried to identify broad trends in a population, and in the end generalize the findings over a large population who are Lecturers' in Technical Training Institutions in Kenya. The quantitative research design for the present study was adopted because it seeks to gain insight into an occurrence as a way of providing information on the perceived ease of use of ICT in Technical Training Institutions which were many in Kenya.

The characteristics of the design were non-experimental and dealt with variables in their natural settings. According to Polit and Hungler (2004), views that are also echoed by Cohen, *et al* (2018), research methodology is a way of obtaining, organizing and analyzing data and thus methodology decisions often depend on the nature of the research questions. In this study, the methodology refers to how the research was done and its logical sequence. In the present study, all Lecturers in Technical Training Institutions in Kenya

were targeted to take part in the study as respondents. According to Gray, *et al* (2017) population refers to all the elements that meet the criteria for inclusion in a study. In other words, population is the aggregate of all that conforms to a given specification. Stratified random sampling was used to get representation from Lecturers in Technical Training Institutions across the country. Wimmer and Dominick (2006) support the use of stratifying in cases where respondents belong to identifiable subgroups, in order to give each person in the population an equal chance of being selected. Stratifying lecturers according to the regions they taught guaranteed the desired distribution across the country hence improved the representativeness of the sample.

To get the desired representative distribution across the eight (8) strata's, the following sample was drawn with respect to the actual population ratios of lecturers in Technical Training Institutions as follows: Central (n=122); Coast (n=41); Nairobi (n=98); Rift Valley (n=148); Western (n=46); Nyanza (n=90); North Eastern (n=10); Eastern (n=74). The total sampled respondents were 629. A total of 629 questionnaires were sent out to respondents, out of this 558 questionnaires were completed and returned.

The researcher used a standardized questionnaire for data collection. The choice of the data collection instrument is often very crucial to the success of a research and thus when determining an appropriate data collection method, one has to take into account the complexity of the topic, response rate, time and the targeted population. According to Parahoo (1997), a research instrument is a tool used to collect data. Research instruments are therefore useful to researchers because they help in data collection. The research used questionnaires containing structured and semi-structured questions and a four (4) point Likert scale. The Likert scale were chosen because they are good because they show the strength of the persons feelings to whatever is in the questions, they help in making data collection and analysis easy, they are more expansive and they are quick to administer (Kothari, 2004). The questionnaire had five (5) sections, the first section collected general information, section two (2) collected data on lecturers ease of learning to operate ICT; section three (3) looked at Lecturers' flexibility of interacting with ICT; section four (4) examined the mental effort required by Lecturers' to interact with ICT; and section five (5) assessed the effort required by Lecturers' to become skilful at using ICT.

Data analyses, tool such as descriptive statistics (Percentages and Frequencies) were to quantify, summarize the variables, and described the data collected. Quantitative data were displayed using appropriate tables that depicted the relationship between the dependent variable and the independent variables. Inferences were made from the trends observed from the analyzed data and were used to reach conclusions and made generalizations about the characteristics of populations based on data collected from the respondents. This is in accordance with Hyndman, and Hiller (2013), who posits that data processing involves translating the answers on a questionnaire into a form that can be manipulated to produce statistics. This involves coding, editing, data entry, and monitoring the whole data processing procedure.

RESULTS AND DISCUSSION

The results obtained in relation to the set objectives of perceived ease of use factors were discussed below. The first question item investigated how easy it was by Lecturers to operate ICT. (Table 1) showed the responses on this item. The results revealed that 47.5% of Lecturers often regarded learning to operate ICT as easy, while another 37.5% of Lecturers sometimes regarded learning to use ICT use as easy.

From these findings, we can make several inferences. Firstly, learning to operate ICT was easy. Secondly, Lecturers could easily acquire ICT skills to use as a means of instruction. Thirdly, Lecturers could easily use ICT in instruction. This agrees with Karaliotas (1977), who posits that resource-based method of teaching, which is a hallmark of Computer Assisted Learning, defines the position of a teacher as a facilitator in the learning process, rather than a source of knowledge. In general, learning to operate ICT by Lecturers was easy.

Table 1: Ease of Learning to Operate ICT

	Frequency	Percentage
Often	265	47.5
Sometimes	209	37.5
Rarely	42	7.5
Never	42	7.5

Source: Field Survey (2017)

The second item based on the set question item investigated Lecturers' flexibility of interacting with ICT and result data presented in Table 2. The study results revealed that 52.5% of Lecturers often find it flexible to interact with ICT, while another 32.5% of Lecturers sometimes find it flexible to interact with ICT.

From the research data, we could infer that Lecturers' interacted with ICT flexibly. Tully (2003) in light of this states that However, the environment where one grew up could determine his or her ability to fully utilize modern technologies according to Tully (2003). In general, Lecturers interacted with ICT flexibly.

Table 2: Flexibility of Interacting with ICT

	Frequency	Percentage
Often	293	52.5
Sometimes	181	32.5
Rarely	56	10.0
Never	28	5.0

Source: Field Survey (2017)

The study also investigated the mental effort required by Lecturers' to interact with ICT. Table 3. Showed the response on the level of mental effort required to interact with ICT. It was revealed that 47.5% of Lecturers sometimes found that they required a lot of mental efforts to interact with ICT, while another 32.5% rarely required a lot of mental effort to interact with ICT.

From the above findings, we could infer that Lecturers' did not require a lot of mental effort to interact with ICT. This is echoed by Punie and Canberra (2006), who posit that the role of ICT in instruction should be seen in the light of its contribution to emancipation, empowerment, and self-fulfilment of individuals using it. In general, Lecturers' interacting with ICT was easy.

Table 3: Mental Effort of Interacting with ICT

	Frequency	Percentage
Often	56	10.0
Sometimes	265	47.5
Rarely	181	32.5
Never	56	10.0

Source: Field Survey (2017)

The last question item in this section investigated the effort required by Lecturers' to become skilled at using ICT. The findings were presented in Table 4. The study results revealed that 47.5% of Lecturers sometimes required a lot of effort to become skilled at using ICT, while another 27.5% often required a lot of effort to become skilled at using ICT.

We could make several inferences from the research data. Firstly, it required a lot of effort to be skilled at using ICT. Secondly, to be skilled in using ICT there is need for a lot of exposure. Thirdly, practical handling of ICT was necessary in order to enhance the use of ICT. These assertions from this study agrees with Lankshear and Snyder (2000), who posit that there is no doubt that teachers who use ICT in classrooms have to demonstrate high levels of energy, hard work and perseverance, often in the 'face of considerable odds'. In, general, a lot of effort is required to become skilled at using ICT.

Table 4. Effort required to become Skillful at Using ICT

	Frequency	Percentage
Often	153	27.5
Sometimes	265	47.5
Rarely	70	12.5
Never	70	12.5

Source: Field Survey (2017)

CONCLUSIONS

The study sought to assess Perceived Ease of Use and instructional use of ICT by Lecturers in Technical Training Institutions in Kenya. Based on the findings of this study, it was concluded that; learning to operate ICT was easy, Lecturers interacted with ICT flexibly, and their interaction with ICT was easy. However, a lot of effort is required to become skilled at using ICT. Therefore, Lecturers in Technical Training Institutions perceived instructional use of ICT as easy, and this can be harnessed for use for instructional purposes. The findings of this study will provide insightful references and be additional knowledge base for educational policy makers.

RECOMMENDATIONS

Based on the results and conclusions, the following recommendations are made:

1. That Lecturers should be encouraged to use ICT for instruction as it is easy to interact with when giving instruction.

2. Lecturers be trained on instructional use of ICT to enable them have the requisite skills to enable them interact easily with ICT when giving instruction.
3. Further Research be carried out to assess the use of learning resources in teaching of specific subject areas in Technical Training Institutions in Kenya and the world.

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