Review Article

Assessing the need for and constraints to Information and Communication Technology (ICT) integration in the teaching and learning of tourism at Higher Education Institutions in Kenya

ABSTRACT

The aim of the current paper is to provide an extensive review of the theoretical and empirical literature that justifies the need for Information and Communication Technology (ICT) in the teaching and learning of tourism in the Kenyan institutions of higher learning. Further, a review of existing constraints is also explained using the Technology Acceptance Model (TAM) which has proved to be a suitable theoretical model in helping to explain and predict user behaviour of information technology and subsequently proposes the way forward towards enhanced integration. This study examines literature review that reveals the different points of view in relation to the integration of ICTs in teaching and learning in tourism higher education institutions in Kenya. Specifically this paper seeks to: (a) Establish the various ICT resources applicable in tourism education, (b) Determine the benefits of integrating ICT in tourism education, (c) Establish the external factors and user based factors that influence or constrain acceptance of ICT in tourism education in higher institutions and recommend the way forward.

It is established that, the use of ICTs transforms the teaching and learning experience by changing the manner in which the tourism and hospitality skills and knowledge is acquired. The need for more appropriate modes of delivery to make the tourism education programmes more convenient for the modern student is quite crucial. The findings from literature reviewed, shows that students are willing to adapt and use ICTs for learning but institutions are slow to implement their use while lecturers are slow to adapt to their use. There are other barriers to the integration of instructional technology into higher education, such as poor technology infrastructure, lack of proper institutional policies on ICT use and minimal low computer use competency. Further, many higher online educational institutions have failed due to the high cost of technology, poor decisions, competition, and the absence of a business strategy. Many universities that provide e-learning face enormous difficulty in achieving successful strategies, including the delivery, effectiveness, and acceptance of the courses. To effectively utilise ICT in tourism teaching and learning in Higher Education Institutions (IHEIs) will require proper network infrastructures, increased computer to student ratios, good Internet connectivity speeds with high availability as well as technical support for the users. There is also a need for a change in the tourism curriculum to integrate the use of ICTs in teaching and learning while at the same time, enhance policies that recognise and award those who use of ICTs for teaching.

Keywords: ***Information Communication Technology, need, constraints, integration, teaching, learning tourism, Higher Education***

INTRODUCTION

Higher education at a local, regional and global scale is both in transition and under pressure to play a meaningful role towards the development of knowledge among societies with such societies requiring a support infrastructure in the form of people with knowledge, skills and abilities which thus requires the reformulation of the nature of learning and what is required of a graduate (Tassiopoulos, 2010).

The impacts of Information and Communication Technologies (ICTs) is growing rapidly in many areas of society (Farrell, 2007). Technology has expanded the sphere of influence that encompasses a profound impact on the world of education. Personal computers have transformed into powerful and inexpensive machines capable of handling multimedia presentations using graphics, animation, audio, and interactive video. As computers have become smaller, more powerful, and more cost-effective, their use in educational settings has increased rapidly. The softwares have followed this advancement and have become easier to learn and more user friendly. One of the significant technological innovations in this digital age has been the Internet which has increased communication flexibility while at the same time reducing cost by permitting the exchange of large amounts of data instantaneously, regardless of geographic distance (McNeal *et al*, 2003).

In the area of teaching and learning, Information and communication Technologies (ICTs) are at heart of the educational process (UNESCO, 1999). These ICTs include a diverse set of resources (the internet, computers, various softwares, among others) that are critical for communication, creation, dissemination, storage and management of information (UNESCO, 2002).

Romo & Diaz (2015) underscore the fact that ICTs allows the execution of communication strategies to create new types of education. Through this comes the creation of new knowledge to better prepare the sector's future personnel. Further, the use of the ICT as a learning tool known as E-learning is the learning that occurs any time someone uses electronic means for learning with or without another live person being present in the same venue (Collins et al, 2003). In the 21st century will continue to experience enormous growth as it permits resource optimization and alters teaching, learning, and thinking. Although technology is not the solution to poor teaching, it is clear that technology is facilitating the move from curriculum-centered to learner-centered, from individual to collaborative tasks, and from passive learning to active learning. Web-based learning, e-learning, online learning, technology- mediated learning, and technology-enhanced learning are the realities of today's education (Yukiko & Bell, 2006).

Historically Kenya has always prioritized education and training at all levels as it is considered the foundation for social and economic development. The goal of education and training is to build the human resources necessary for national development and wealth creation. However, the government is faced with many challenges in realizing this goal; challenges which may be broadly categorized under the banners of access, quality, equity and relevance. The government is well aware of the potential of Information and Communication Technologies (ICTs) to help address some of these challenges and of ICTs broader roles in human development and in the development of a knowledge-based economy. This is clear from official statements and documents such as the national plans (Kenya Vision 2030, Poverty Reduction Strategy, and National ICT4D Policy) and education sector plans and policies (KESSP, Sessional Paper No. 1 of 2005, National ICT Strategy for Education and Training) which all emphasize the role of ICT in education and national development (Swarts, 2009).

Today's reality makes clear that through internet technologies, the learning process will never again be contained within a restrictive area. Due to their dynamic character, Education and Tourism are two of the areas in which ICT is most beneficial and relevant. Consequently, Diaz and Romo (2015) contend that, in the growing tourism industry of developing countries ICT has helped destinations with touristic potential, but few resources, to become integrated in the value chain of tourism and improved the areas' opportunities to participate in the market Therefore, in the tourism industry some business owners believe that the correct use of ICTs in teaching and learning can generate high added value within their establishments with the goal of diminishing the lack of and the high rotation of qualified personnel which makes training of the tourism and hospitality labour force a key component in competitiveness and improved national productivity.

One of the areas mentioned in the Kenyan Vision 2030, is mainstreaming ICTs at all levels of education and training by ensuring that policy and curriculum delivery is well integrated at all levels through ICTs. This underlines the importance with which the government of Kenya holds ICTs as an enabler of education delivery management and policy. However, the implementation of ICTs is also highly influenced by local circumstances and by social processes that determine the outcomes and often have political ramifications (Nkansah & Unwin, 2010).

Conceptual Model

This paper adopts the Technology Acceptance Model (TAM) as shown on Figure 1, which has proven to be a theoretical model in helping to explain and predict user behaviour of information technology (Legris et al, 2003). Technology acceptance is defined by Arning and Ziefle (2007) as the user's willingness, acceptance, agreement and the continuous use of any technological system. This can be classified into behaviour and attitude acceptance. In technology acceptance model, attitude towards using, the intention to start using and the actual adoption or use are indicators that the individual has accepted the technology and sees it as beneficial.

However, the beliefs and intentions can be formed by external factors such as self-efficacy and structural factors of affording and sustaining the technology. TAM provides a basis with which one traces how external variables influence belief, attitude, and intention to use. Two cognitive beliefs are posited by TAM: perceived usefulness and perceived ease of use. According to TAM, one's actual use of a technology system is influenced directly or indirectly by the user's behavioural intentions, attitude, perceived usefulness of the system, and perceived ease of the system. TAM also proposes that external factors affect intention and actual use through mediated effects on perceived usefulness and perceived ease of use.

The TAM explains the process by which technology is adopted by individuals and institutions like higher education institutions. This model indicates that an individual's actions and behaviour are guided by beliefs and perceptions. In the case of ICTs integration and adoption in tourism education, the beliefs of the university's management, faculty and students about the benefits and challenges brought about by using the technology guides their behaviour and intention towards making use of the technology.

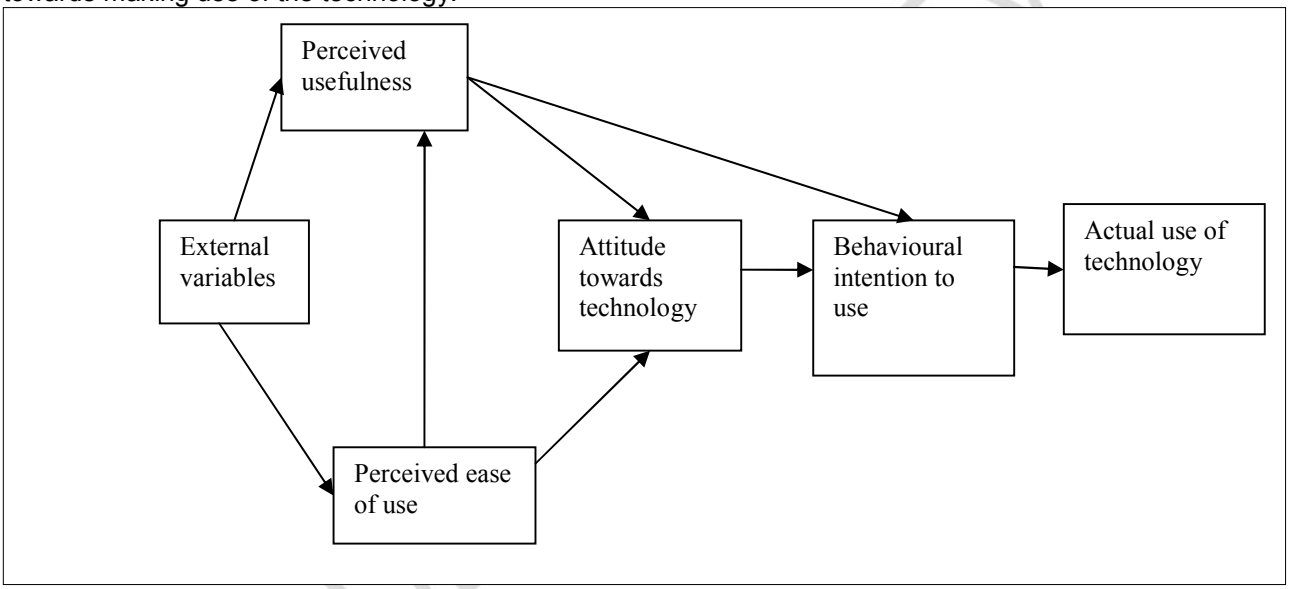

Figure 1: The Technology Acceptance Model (TAM) *Source: Davis (1989)*

Background on Kenya's policy on ICT in higher education

The earliest attempt at ICT policy formulation in Kenya dates back to the 1980s, but the process remained incomplete by 2000 (Nduati & Bowman, 2005). The formation of ICT policy in Kenyan education has its roots in the Ministry of Research of the time. The motivation was to develop national policy guidelines for the development of ICTs in the country in order to address the then prevailing haphazard growth of the sector. This was complemented by the readiness of donor agencies including UNESCO, in funding the current policy-making process. Reports by Waema (2005); Farrell (2007) seem to agree with the idea that fast and haphazard growth of information technology lacking direction and regulation provided an impetus for ICT policies as mentioned earlier.

The Kenya National ICT policy was adopted in 2006 after several years of effort in trying to put it in place. The aim of the policy was to improve the livelihoods of Kenyans by ensuring the availability of accessible, efficient, reliable and affordable ICT services as reported in the ICT in Education options paper (Kenya, MoEST, 2005).

Although the national ICT policy has several sections, objectives and strategies regarding ICT in education are spelt out in the information technology section. The objective regarding the use of ICT in schools, colleges, universities and other

educational institutions to improve the quality of teaching and learning is spelt out as documented in a report by Farrell (2007). One important strategy outlined in this report is the promotion and development of specific e-learning resources that would address the educational needs of primary, secondary and tertiary institutions. A significant step in this direction is the digitisation of the curriculum at the Kenya Institute of Education (Ratemo, 2009). Under the subtitle 'E-learning', the ICT policy goes on to outline the strategies that will be used in the promotion and development of ICT in teaching and learning. Other strategies outlined in *The National Information & Communications Technology Strategy for Education and Training* (Kenya. MoEST, 2006) include:

- Promote the development of e-learning resources;
- Facilitate public-private partnerships to mobilise resources in order to support e-learning initiatives;
- Promote the development of an integrated e-learning curriculum to support ICT in education;
- Promote distance education and virtual institutions, particularly in higher education and training;
- Promote the establishment of a national ICT centre of excellence;
- Provide affordable infrastructure to facilitate dissemination of knowledge and skills through e-learning platforms;
- Promote the development of content to address the educational needs of primary, secondary, and tertiary institutions;
- Create awareness of the opportunities offered by ICT as an educational tool to the education sector;
- Facilitate sharing of e-learning resources between institutions;
- Exploit e-learning opportunities to offer Kenyan education programmes for export
- Integrate e-learning resources with other existing resource.

These strategies seem to be dependent upon each other. For instance, whereas it was important to develop e-learning resources, it would be meaningless if there was lack of awareness, skilled personnel, facilities and public-private partnerships to support the e-learning initiatives.

Also, the development of the curriculum and training of teachers both at in-service and pre-service level may be central to the government's efforts of achieving the policy objectives. In an effort to promote the development of content that will address the educational needs of primary, secondary, and tertiary institutions, the government came up with two ways in which the curriculum will be developed (Kenya. MoEST ICT in Education options paper, 2005). One, by adapting existing educational materials and distributing them to the schools; and the second, by beginning the process of having institutions create their own e-content. Besides, building capacity in Kenya to create instructional material for an increasing digital world is noted as an important aspect of the curriculum that is expected to pay dividends in improving the quality of education (ibid). In order to achieve this policy objective, the Kenya Institute of Education (KIE) has been singled out as the sole government body charged with the responsibility of developing the ICT curriculum as well as distributing the educational material. KIE would also be in charge of overseeing other institutions that develop appropriate e-content (Farrell, 2007). Objective number 10 of the MoEST strategic plan (running from 2006 to 2011) targeted the strengthening the capacity of KIE to execute this mandate among others (Kenya. MoEST, 2006) which indicated a strong commitment in support of the National ICT policy.

Farrell (2007) asserts that while technicians can be employed to fix and maintain computers, teachers and educators must know how to exploit ICT for what it does best – opening learners up to the world of knowledge. The author also noted that investment into upgrading computer labs and building ICT capacity at the Teacher Training Colleges (TTCs) is an intervention which can quickly yield high returns. By providing adequate access to ICT, the TTCs can use it to achieve learning objectives at various levels. This point is also noted in the ICT in Education Options Paper (Kenya. MoEST, 2005) in which large-scale capacity building workshops for teachers have been suggested. The paper observes that teacher training should be built on existing structures that support quality ongoing professional development for teachers. The programme should be consistent with the workshops for lecturers and pre-service teachers at teacher training colleges. The paper further notes that the training of teachers should focus on increasing efficiency in the teachers' workload and integrating ICT to improve teaching and learning objectives.

ICT resources applicable in teaching and learning tourism in Higher Education Institutions

Although ICT has several definitions depending on the nature of its use, for this review adopts ICT (information and communication technology) as an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems, as well as the various services and applications associated with them, such as videoconferencing and distance learning that supports teaching, learning and a range of activities in education.

Yukiko and Bell (2006) contend that in this modern and advancing age, technology is a powerful complement to traditional teaching methods in higher education. The educational media can be divided into four categories (Laurillard, 1998): (1) *Descriptive* (both teacher's and student's conceptions are accessible to the other, and both topic and task goals can be negotiable); (2) *adaptive* (teacher can use the relationship between his or her own conception and the student's conception to determine the task goals for the continuing dialogue, in the light of the topic goals and previous interactions); (3) *interactive* (at the level of actions, the students can act to achieve the task goal); and (4) *reflective* (teachers must support the process by which students link the feedback on their actions to the topic goal). Keeping these categories in mind, Laurillard (1998) classifies the teaching media as follows:

- **Audio-visual media:** Include print (both text and graphics), audiocassette, audio-visual (an audio-cassette talking accompanied by separate visual material), broadcast television, and videocassette.
- **Hypermedia:** Computer-based software system for organizing and storing information to be accessed inconsequentially, such as hypertext and multimedia resources.
- **Interactive media:** Computer-based simulations (programs that embody some model of an aspect of the world, allow the user to make inputs to the model, run the model, and display the results).
- **Adaptive media:** The main difference between the tutoring system and the tutorial simulation lies in the fact that the teacher's conception is expressed explicitly in the former.
- **Discursive media:** Bring people together for discussion. They are grouped under the generic category "teleconferencing," or "conferencing at a distance." (pp. 108-164)

Laurillard (2002) proposes that by combining learning experience with logistical characteristics, it is possible to focus on just five media forms of educational technology, based on the analysis of pedagogical characteristics of media forms and the learning experiences they support. Table 2 shows how each media form, characterised as narrative, interactive, communicative, adaptive, and productive, identifies with particular kinds of learning experience and delivery method.

Table 1: **Five principle media forms with the learning experience they support and the methods used to deliver them**

Media forms	Learning experience	Methods/technologies
a. Narrative	Attending, apprehending	Remains unchanged by the user. Print, TV, video, DVD
b. Interactive	Investigating, exploring	Library, CD, DVD, Web resource
c. Communicative	Discussing, debating	Allows interaction between student and learner. Seminar, online conference
d. Adaptive	Experimenting, practising	Responds to users actions. Laboratory, field trip, simulation
e. Productive	Articulating, expressing	Essay, product, animation, model. paper, disc, cassette or network

Source; *Adopted by author from Laurillard (2002)*

The need for ICT in tourism education content delivery in Higher Education Institutions (HEIs)

The tourism sector has been the forerunner in using Information and Communication Technology (ICT) networks, and e-commerce is exerting a huge impact on the sector (Tassiopoulos, 2010).The use of ICTs in Higher Education Institutions (HEIs) for instruction became prominent in the late 1960s and early 1970s with the introduction of web based learning (Gunilla, 2004). Research has shown that ICTs engage learners, allow learners to explore and simulate abstract concepts while encouraging self learning (Agostilio 2002). They also offer learners the ability to address complex problems, encourage team work, allow for critical thinking while inspiring learners to desire for enquiry.

The introduction of ICTs in HEIs as argued by Shabaya (2009) has often targeted operational functions rather than teaching. In cases where they have been acquired for teaching, institutions hardly bother to evaluate their impact on the productivity of lecturers, quality of learning output and cost of production of their products (students). Most of the lecturers

however in HEIs simply use ICTs to process and store data. This is however changing as learners start to demand for accountability from HEIs for quality teaching and research through the use of ICTs.

The digital technologies however can be applied in HEIs in teaching/learning processes for a variety of purposes: information retrieval from periodicals, books, newspapers and other information resources; simulations and multi-media presentations; communication with instructors in- and after classes; communication amongst students; drilling exercises and sample tests; reading notice boards; class administration, etc. Furthermore, the information and communication technologies have a huge impact on other important areas of university activities, such as: library management; registration and loan administration; enhancement of research communities; academic publishing; mobility and cooperation between institutions.

Shibaya (2009) indicates that ICTs can transform the traditional authoritative learning into more transparent learning, with the teacher becoming a facilitator rather than the expert. Through ICTs, learning can become more active rather than passive, more conversational as opposed to publication. Information technology will transform learning from traditional formal schooling to lifelong learning. The concept of a library continues to evolve such that it is no longer a physical reading room but an online virtual location where learners can access different databases in different formats (multimedia).

Proper use of the Internet encourages critical thinking thus cultivates deep learning where learners learn independently. McMclintock as cited in Shibaya (2009) says that HEIs would benefit more from ICTs if they aligned their curriculum with the ICT tools being used. He concludes that ICTs will soon become mutually exclusive in the labs, such that the classroom, library and the computer labs will no longer be separate learning places.

Carnoy (2005) studied the cognitive impact of ICTs on the intellectual content and competence of students. His findings showed that Internet usually has a positive measurable impact on learners' intellectual content (what learners think). However, on the contrary there was no compelling evidence on the cognitive impact of ICTs on the intellectual competence (how learners think). It means that although ICTs might not directly improve the thinking process of the student, it improves his ability to learn by gathering and analysing content. He recommended that since lecturers appear to resist the change from the traditional lecture method to learner centred, then HEIs should retain the status quo and blend ICTs with the current approach rather than radically transform it.

Similarly, Kalbaska & Canton (2014) point out that this instrument has formed a new paradigm for teaching and learning in which technology offers different mediums for learning, knowledge transfer and knowledge sharing. In the area of tourism, both schools and organizations of the industry use platforms to train and education professionals.

The benefits of e- learning are manly the cost efficiency, accessibility and flexibility in terms of time and place. E-learning allows learning to take place when the lecturer and the learner are separated both in time and space (Uys, 2003). It offers convenience for both the tutor and the learner learning anytime or anywhere. The table 1 below summarises the potential benefits of use of ICTs in learning and the implications to the lecturer in tourism education.

Table 2**: The Implications for Teachers in Using Computers in Classrooms**

Potential	Implications for Teacher/ Lecturer
Dynamic Learning	Students may learn outside the teacher's own area of expertise. More difficult to direct and manage student learning.
Student motivation	Students are easier to manage and direct towards the tasks. Students may be distracted by the computer from the tasks the teacher has intended.
Removing tedious tasks	More satisfying for teacher to direct less tedious tasks. Some teachers may prefer students to complete tedious, routine tasks as "busy" work.
Instruction to fit the learner	Relieves the teacher from needing to spend a lot of time with students who need extra practice, catch-up or extension work.
Independent learning	Learning may not direct itself towards the teacher's objectives. Additional coordination of the classroom, students and materials is required.
Extending student thinking	Student thinking may go beyond the teacher's experience or capabilities which may reduce the confidence of the teacher.

Source: Hennessy et al (2010)

External factors influencing the use of ICT in higher education institutions

ICT Infrastructure

Physical access to ICT is the first step towards making technology accessible to the local people. In 2006, the Kenya Education Network Trust (KENET) carried out an e-readiness survey to determine the degree to which higher education institutions in Kenya were prepared to participate in the networked world for learning, teaching, research, and management (Meoli & Waema, 2007). The findings indicated that more than 50 percent of the 17 universities and 8 tertiary institutions of higher learning in Kenya did not have sufficient ICTs to support teaching and research.

Table 3**: Demographic data and Internet availability for 17 universities (2008 and 2013)**

Year of survey	Total students	Total PCs owned by students	Total bandwidth (Mb/s)	Internet bandwidth per 1,000 students	PCs per 100 students	% of students with PC access at home
2008	162,319	3,907	70.8	0.436	5.5	27
2013	339,418	13,815	1,431.5	4.22	4.07	30.4.

Source: Meoli & Waema (2007).

Financial constraints

The Internet is considered to be a very expensive resource, even in developed economies; maintenance costs, due to the rapid evolution of ICT requires constant upgrading of equipment and facilities; the cost of on-line charges for the use of the Internet is high unless it is subsidized by Governments or private institutions; and, the wide disparities between rural and urban areas in regard to basic telephone infrastructure and the quality thereof (Tassiopoulos, 2010). Most Kenyan universities do not prioritize e- learning in their budgetary allocations. Karshoda and Waema (2013) established that on average Kenyan universities spend 0.5% of their total recurrent expenditure on internet bandwidth.

Institutional policy on ICT use

It has been noted that within a school different students may have different levels of access based on the subjects they opt for. Access to ICT facilities therefore varies with school and students. For instance a study by Ndidde et al. (2009) revealed variations in ICT use for learning by students, depending on access to computers, institutional rules and regulations and the level of ICT skills by the learners.

Economic and political factors

Hennessy *et al* (2010) urges that lack of acceptance of ICT as an urgent national need as a reason for slow penetration of ICTs in the Africa with technology is being considered a luxury by many within the region and extreme poverty necessitates countries to choose between feeding the hungry and sheltering the homeless over investing in enhancing technological infrastructure and thereby improving access. Schools themselves are under-funded and have little resource to spend on technology.

Absence of policies to regulate the growth and use of ICT in the country creates a barrier. Minishi-Majanja (2007) mentioned that computers and related items are often treated as luxury items and heavy government taxes are imposed which increases the cost of such equipments. Deregulation of polices related to satellite communication and other telecommunication links, and regulating ISPs, government and cross-border data flows is needed. Mutula (2004) has argued for government subsidy on technology to educational institutions.

Language and cultural factors

Byron & Gagliardi (2005) contend that the almost complete dominance of English over other languages in the computer field is one of the principal obstacles to the widespread use of computer technologies in education in developing economies, in particular. This linguistic and cultural dominance continues to be a serious barrier for non- English speaking countries wishing to integrate e-learning into their tourism curricula. Some governments may even oppose the use of e-leaning in the formal education system for fear of its potential for “cultural colonization”.

User based factors that influence acceptance to integrate ICT in tourism education

ICT literacy among students

Literacy in today’s digital age requires more than the ability to read and write. Drawing from Kawooya’s (2004) definition of information literacy, ICT literacy can be defined as “the ability to realise the need for finding and effectively using” ICTs (p. 423). ICTs are vital in accessing, using and disseminating information hence the relationship between ICT and literacy and the need to review ICT literacy among students in the whole equation of ICT use in schools.

Behavioural intentions to use ICT

In general, variables related to the behavioural intention to use information technology or to the actual use of information technology could be grouped into four categories: individual context, system context, social context, and organizational context. While social context means social influence on personal acceptance of information technology use, organizational context emphasizes any organization's influence or support on one's information technology use. Thong, Hong, and Tam (2002) identified relevance, system visibility, and system accessibility as organizational context variables. They reported that the organizational context affects both perceived usefulness and perceived ease of use of a digital library. Lin and Lu (2000) similarly reported that higher information accessibility brings about higher use of information and higher perception of ease of use. In this study, e-learning accessibility refers to the degree of ease with which a university student can access and use a campus e-learning system as an organizational factor**.**

Professional Competence:

Educating the educators is considered the most important factor in ensuring the successful use of the Internet in higher education as in many instances this factor is overlooked or underestimated in the development initiatives for introducing the Internet with the result that such projects fail or are never developed to their full potential. Training is costly but also requires being on-going and regularly updated to meet the ever new demands posed by evolving ICT technologies.

Educator attitudes

Educators seem to resist the introduction of e-learning for a number of reasons, including their unfamiliarity with the technologies, the additional time and effort necessary for their effective use and the possible notion that e-learning pose a threat to their professional role and image.

CONCLUSION

Literature reviewed indicates that, the use of ICTs for teaching and learning has become a reality in Kenya and higher education institutions that teach tourism and hospitality should get ready to use them. Use of ICTs transforms the teaching and learning experience by changing the manner in which the tourism and hospitality skills and knowledge is acquired. The need for appropriate modes of delivery to make the tourism and hospitality education programmes more convenient for working executives is quite crucial. This is especially critical in view of the working hours of industry staff and the fact that some of them work in remote areas, such as lodges and community-based tourism enterprises in rural parts of the country. Some universities have responded by offering distance-learning modules.

However, one of the major challenges of distance learning is the quality of learning materials and poor Internet and other communication. The findings showed that students are willing to adapt and use ICTs for learning but institutions are slow to implement them and lecturers are slow to adapt to their use. There are other barriers to the integration of instructional technology into higher education, such as poor technology infrastructure, lack of proper institutional policies on ICT use and minimal low computer use competency. Further, many higher online educational institutions have failed due to the high cost of technology, poor decisions, competition, and the absence of a business strategy. Many universities that provide e-learning face enormous difficulty in achieving successful strategies, including the delivery, effectiveness, and acceptance of the courses.

The commitment being shown by the government of Kenya to improve Internet connectivity at reduced costs is a move in the right direction towards making the use of ICTs for teaching a reality Even though ICT was recognised as being of great value for tourism teaching in, its integration is still limited. However, for HEIs to be able to benefit from this initiative, they need to set appropriate strategies on why they wish to invest in ICTs for teaching since use of ICTs do not necessarily improve learning outcomes. To effectively utilise ICT in tourism and hospitality teaching and learning in HEIs will require proper network infrastructures, increased computer to student ratios, good Internet connectivity speeds with high availability as well as technical support for the users. There is need for a change in the tourism and hospitality curriculum to integrate the use of ICTs in teaching and learning while at the same time enhance policies that recognise and award those who use of ICTs for teaching.

COMPETING INTERESTS

No competing interest.

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