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Towards Enhancing Service Delivery in Higher Education Institutions via Knowledge Management Technologies and Blended E-Learning

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Towards Enhancing Service Delivery in Higher Education Institutions via Knowledge Management Technologies and Blended E-Learning

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Abstract

Higher education, as a service sector, offers various programs to develop the students which can add value to the society. People, knowledge and technology play vital roles in attaining high service delivery in higher education institutions (HEIs). Knowledge sharing (KS), which is an arm of knowledge management (KM), is a key factor in HEIs requires full usage of technology to disseminate knowledge from teaching and researches through e-learning. However, technology challenges are prevalent in Africa. Hence, this paper illustrates how e-learning system can be used to enhance KM in HEIs in Africa and provide the benefits of both. Characteristics of KM and e-learning system have been highlighted. The paper shows relationship among different types of KM, e-learning and blended e-learning (BEL). It has been enumerated that there is a meeting point between KM, e-learning and BEL towards enhanced service delivery in HEIs in Africa in the era of open distance learning for towards achieving mass education. Hence, African governments should step up their efforts in funding technology-enhanced training in HEIs and necessary policies to promote effective and efficient quality services in DL education using KM and BEL.

Introduction

It is not an overstatement that the rapid development of Information and Communication Technology (ICT) across the globe has changed the landscape of educational service delivery. This has metamorphosed into making knowledge available to all and sundry via Open Distance Learning (ODL). Hence, there has been growth in the availability, accessibility and quality sharing of information allowing relatively easy process than ever before. Different technology innovations play crucial roles in organizing knowledge, both in order to enable storage, sharing, collaboration, categorizing and dissemination of knowledge which can later be accessible and retrieved (Mathew, 2009). Effective flow of knowledge is only possible through the people using appropriate technology and mutual understanding (Egan, 2003; Geraint, 1998). Achieving the act of sharing and regular flow of knowledge, people and technology are systematically integrated. The ability to manage knowledge has become increasingly more crucial in today's world since knowledge is a vibrant force in the rapidly changing global economy and society as recent development has witnessed the emergence of a new economy where knowledge has become a valuable resource and asset (Takele, 2018). People remain vital in the KS and the combination of technological and organizational setup make KM initiative productive. The higher education system of any country nurtures young talents to practice the learned outcomes where the universities, colleges, schools and other educational institution are places for acquiring knowledge (Viju, 2010). The main instrument for the construction of a knowledge economy as well as development of human capitals worldwide is the higher education (World Bank, 1999).

As learning organizations, HEIs perform an important role in the knowledge-based economy and be able to extend knowledge skills, produce top quality graduates, enhance innovation and creativity thereby contribute effectively to the knowledge production and intellectual property development (Pinto, 2014). HEIs are the home or repository for knowledge and their original service delivery missions are to create, preserve, share, and implement knowledge for the overall benefit of the society. In the current global dispensation where knowledge-based economy is the focus due to influx of ICT, the technology-driven economy sets a new scene for education, scientific research activities, new challenges and promises for higher education. These ICT-based tools promote acquisition of knowledge in an ODL scenario. However, HEIs in Africa are facing challenges to fulfil their fundamental role in conducting academic research, knowledge sharing, and transferring knowledge to society via technology.

Many HEIs consider themselves to have already been applying KM in ways like sharing knowledge through teaching and learning activities; creating knowledge by conducting research; and using the ICT to support their service delivery. It is believed by many top managers that KM can be used by HEIs to gain more comprehensive, integrative and reflexive understanding of the impact of information on their institutions (Sulisworo, 2012). Additionally, HEIs in this era of ICT-driven society need to focus on how to enhance the students' quality and skills to cope with the labor market demands and the ever-changing nature of work increases the need for 21st century skills preparation (Mahdinezhad et al., 2011). KM increases institutional innovation as knowledge is the source of new ideas as an institution could boost the efficiency, effectiveness, and quality of graduates who can satisfy the employers' needs at the entry level of employability in future (Ramakrishnan and Yasin, 2012). Some HEIs in Africa have recognized knowledge as a beneficial asset and they are trying to implement various strategies to inculcate technologies toward ensuring that they cope with the existing demands for knowledge from their students and improve their services to remain competitive

However, due to varying factors, it is always a herculean task for HEIs in Africa including Nigeria to wholly implement ICT in KM and KS for service delivery expected of them in efficient and effective manner. Hence, the motivation of this paper is to focus on the use of combination of KM and Blended E-Learning (BEL) to enhance service delivery by HEIs as complete adoption of e-learning in Nigeria is facing series of challenges. The remaining parts of this paper are organized as follows. Section 2 deals with concepts of knowledge and KM in HEIs. In section 3, discussions on ICT and e-learning in African HEIs are made. Section 4 focuses on BEL as panacea to service delivery in HEIs while conclusion is made in section 5.

Concepts of Knowledge and Knowledge Management in HEIs

KM is the process of creating, sharing, using and managing the knowledge and information of an organization (Girard, 2015) and it is viewed as a multidisciplinary approach to achieving organizational objectives by making the best use of knowledge (see Figure 1).

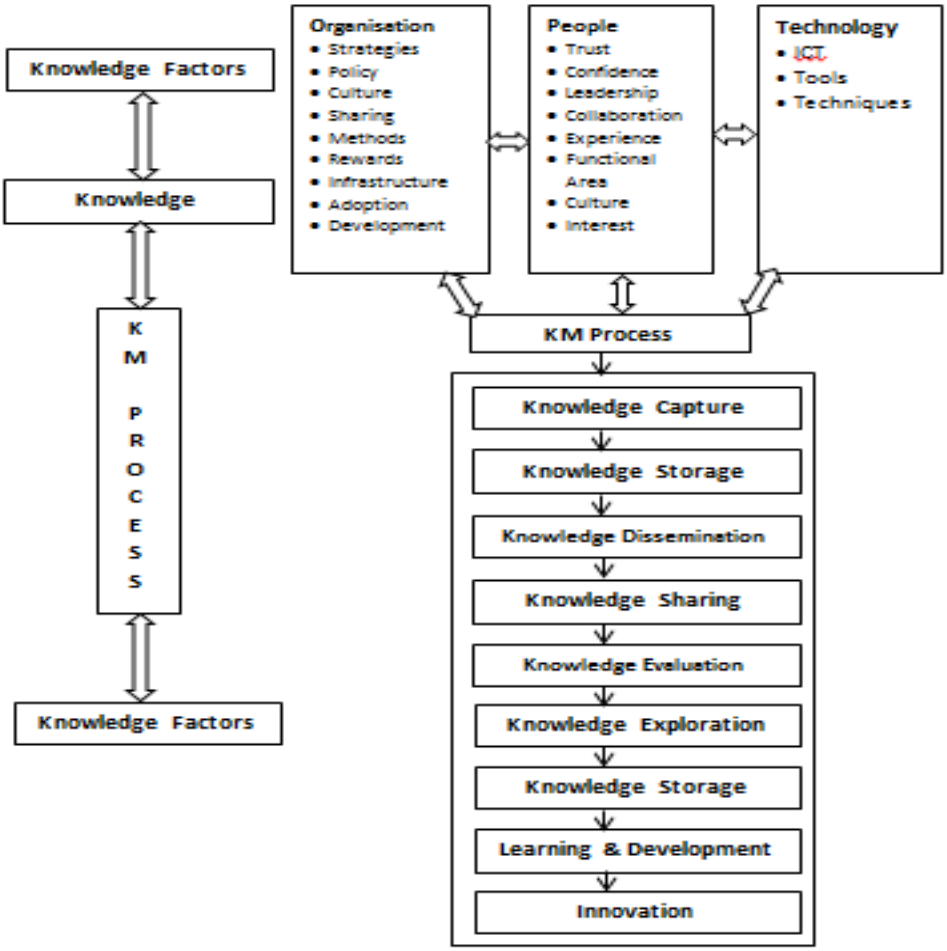

Figure 1. Conceptual Model of KM Framework (Viju, 2010)

In KM, individuals, teams and entire organizations can jointly and systematically create, share and apply knowledge for better achievement of their objectives. Additionally, KM also guarantees spectacular coaction to deliver the value of organizational information and knowledge (as assets) towards effectiveness and greater innovation (Bhusry and Ranjan, 2011). Information Technology (IT) is a major driving force for KM systems and facilitates the capture, storage, transformation and dissemination of knowledge. Viju (2010) present a general framework of KM as depicts in Figure 1.

In an organization, KM systems are unique type of information system aimed towards the acquisition, generation, codification, storage, transfer, retrieval, and use of knowledge. The idea of a KM system is to enable employees of an organization to have access to the organization's knowledge of facts, sources of information, and solutions. Having employees share their knowledge could potentially lead to more effective problem solving and ideas for new or improved products and services (Tiwana, 2004). KM system attempts to disseminate the right information to the right people at the right time. This will obviously increase the organizational efficiency leading to a competitive advantage. In other words, KM systems are designed to support knowledge processes. These KM systems have been deployed in many organizations including HEIs with the hope that they will have a positive effect on performance (Abdullah et al, 2008).

Components of Knowledge Management

KM is an on-going process that has to be viewed as a long-term business strategy and requires the synergy between these three components (Collison and Parcell, 2004):

i. People: It refers to the behavior of the organization's members to ask, listen and share. It is also associated with the organizational culture, leadership and how the organization values knowledge as part of the business strategy. People are the main actors that drive the other two components.
ii. Technology: It is associated with the common reliable technology infrastructures to facilitate knowledge sharing, storing and creation. The members of the organization have to understand not just how to use the technology but also the benefits it can give to improve productivity and organizational performance.
iii. Processes: These simplify sharing, validation and distillation. The processes have to be formulated in systematic ways and well-socialized to the organization's members. KM processes are in four categories: knowledge creation, retention, sharing, and utilization.

Figure 2 shows the relationship between the three components of KM. In HEIs, the three components handshake to deliver an enhanced content that meets the service of the stakeholders.

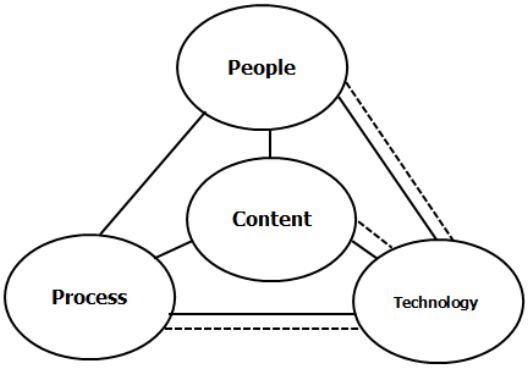

Figure 2. Relationship between KM Components

To support the KM processes, IT needs to be developed so that it can be widely applied and integrated into an organization's technology platform (Wong, 2005). IT is not just tools and software to support efficiency, it synergies with human resources and systematic processes to develop a shared-value within an organization that support continuous learning. As a business strategy, KM contributes to adding values for the organization as this forms the core value creation from intangible assets derived from the organization's knowledge asset (Sveiby, 2001). Today, due to globalization, internationalization and increasing competition, the importance of knowledge stimulates innovation in education. In terms of knowledge as a process, the focus of KMs is to manage the processes that handle the creation, dissemination and utilization of knowledge by merging technologies, organizational structure as well as people to develop effective learning, problem solving and decision-making in an organization including educational institutions. In HEIs, KM is accompanied by the ability to keep more efficient and effective knowledge-centered lecturers mainly to boost the competitiveness

across the globe and improve institution's rating. A successful KM implementation requires that senior management members of staff understand the institution's needs with a distinct future vision and also a grasp of the different technologies available for enhancing institution's service delivery.

KM in Higher Education

HEIs play a vital role in generating, transmitting, disseminating and applying knowledge to students and faculty staff; and a knowledge-based organization should always play its role and function based on the knowledge agenda (Fiscal, 2019). HEIs consist of a number of stakeholders consisting of teachers, students, administrative staff and researchers, each of these components create tacit and explicit knowledge. The main objective of HEIs is to ensure that knowledge is shared among these stakeholders effectively by transforming individual knowledge using a systematic approach to become organizational knowledge that will enhance both individual and organization's performance. Patel and Patil (2018) opine that KM facilitates the following benefits to the HEIs:

a. Improve services for students, staff, teachers, pupils and internal and external members.
b. Minimize response times for research activities.
c. Encourages the institute to carry out interdisciplinary research activities.
d. Improve competitiveness and responsiveness for research proposals, funds, collaborations and new business opportunities.
e. It focuses on the quality of research at the institutional level that will cultivate future scientists.
f. Improves the competitiveness and responsiveness of research researchers.
g. Minimize the time spent on research and reduce administrative costs.
h. Facilitate interdisciplinary research.
i. Improve quality in updating and reviewing the curriculum.
j. Knowledge management develops the capacities of human capital, client capital (students), organizational capital, innovative capital and intellectual property and financial capital.

ICT Tools and KM Technologies for HEIs

Knowledge creation, sharing, transfer, storage and its application are easily achievable with the use of ICT tools. These tools portend a significant role in defining the fulfillment of KM application in HEIs. Table 1 below shows some ICT tools for KM process to aid service delivery in HEIs.

KM Process	**ICT Tools/Technology**
Knowledge Discovery:	World wide Web (WWW), data mining and knowledge discovery techniques for trends, relationship among variables and to discover new knowledge and information from the organizations knowledge repositories and search engines.
Knowledge Acquisition/Capture:	CD/DVD, scanner, search engines, different websites, e-mail, chatting, expert system, voice mail, SMS, fax machine.
Knowledge Creation	Production rules, case based reasoning, intelligent software agents, enterprise information portal, artificial intelligence, knowledge discovery tools and decision support system.
Knowledge Codification:	Production rules in expert system, decision tables and decision trees.
Knowledge Storage:	Computer, CD/DVD, pen drive and centralized file management in distributed environment.
Knowledge Processing:	Database Management System
Knowledge Sharing:	Technologies used for knowledge sharing are decision support system, groupware software, discussion groups, search engines, mobile technologies, communities of practice, blogs, discussion list and online communities. Others are email, telephone, mobile, SMS, pen drive, online chat, online discussion groups, video conferencing, web portals, groupware, online database, corporate Intranet and Internet.
Knowledge Dissemination:	Fax machine, LCD Projector, pen drive, CD/DVD, email, technology used are video conferencing, teleconferencing, local area networks, Intranet, wireless transmission, encrypted or plain text, newsgroups, chat rooms, bulletin board system and blogs.
Knowledge Application:	Workflow systems, expert systems, patent management system and enterprise information portal.

Other KM Technologies

Other various technologies promote KM across the world. Some of them are:

i. *Groupware*: These are software that enhances collaboration and sharing of organizational information. Lotus Notes was the earliest successful products of groupware and it provided tools for threaded discussions, document sharing, organization-wide uniform email, etc.
ii. *Workflow systems*: Systems that provide an infrastructure for the setup, performance and monitoring of a defined sequence of tasks. It is a software application which automates process(es) that require a series of steps. Examples are routing, distribution, coordination, agent, expert systems (or artificial intelligence).
iii. *Content and document management systems*: Software systems that automate the process of creating web content and documents.
iv. *Enterprise information portals*: This is software combining information, people and processes within organization's boundaries. Examples are Jetspeed 2.3.1 by Apache Software Foundation, Broadvision Portal 8.2, WebSphere Portal 8.5 by IBM, Microsoft SharePoint etc.
v. *E-Learning*: This technology allows organizations to create customized training, learning contents in form of lesson plans, monitoring progress and delivery of online classes.
vi. *Planning and scheduling software*: This software automates schedule creation and maintenance. An example is Microsoft Outlook.
vii. *Telepresence*: This software allows learners to have virtual face-to-face meetings without converging at a particular location. Videoconferencing is the most obvious example.

KM Initiatives in Africa

Maponya (2004) conducted a study on KM initiative in Africa and the result reveals that knowledge has impacted all institutions, particularly those of higher education, through their academic libraries. This has buttressed the value of KM. Hence, the role of academic libraries is changing to providing the competitive advantage for the parent institutions. Success of academic libraries depends on their ability to utilize information and knowledge of its staff to better serve the needs of the academic community (Viju, 2010). HEIs in Africa have also recognized knowledge as a beneficial asset and they are trying to implement various strategies to ensure that they cope with the existing demands for knowledge by their students to remain competitive. Wanderage et al. (2011) studied the influence of KM practices on innovations and found that management development institutes (MDIs) heavily depend on their staff knowledge to ensure survival in today's highly competitive environment. This knowledge is a valuable asset in an intellectual environment. The study affirmed that there exist a positive relationship between the process innovation and knowledge sharing. They opine that MDIs are likely to innovate more in terms of new process creation and improvement of the existing ones. Wanderage *et al*. (2011) recommend that for MDIs to endure there is need to reinforce innovation through effective management of staff's knowledge by creating an environment of sharing and making knowledge as a key resource for innovation. Hence, KM is an enabling tool that should be adopted by executives to cultivate the culture of its management.

Roles of Technology in Knowledge Management and Sharing

The role and adoption of ICT in the current dispensation are center of focus towards inspiring the strategic roles of universities towards economic growth and innovation; and as the role of IT in KM processes is catalyzing the rate of knowledge creation and transfer. There is always a need to enhance and facilitate KM to innovate new methods, tools and techniques in the development of KM systems frameworks (Ebad and Faridi, 2013). These invariably results into promotion of knowledge processes and technologies for the purpose of effective service deliveries in HEIs. Two basic approaches exist in KM where IT can provide support: *codification* and *personalization* (Hansen et al. 1999). The role of IT in codification approach is on people to help share knowledge through common storage to achieve economic reuse of knowledge while in personalization approach, more tacit and unstructured knowledge is majorly shared via direct personal communication to assist people locate and communicate with each other to attain complex knowledge transfer.

Challenges of Implementing KM in African HEIs

Various challenges and barriers face implementation of KM in African HEIs. Ujwary-Gil (2012) in their study aimed at analyzing the barriers to KM notes that lack of reward and motivation for seeking and sharing

knowledge, unawareness of where the knowledge-based institution is, organizational culture promoting individual results to knowledge sharing, limited resource, unfriendly nature of technology system among others are some factors that hinders knowledge sharing in organizations. Furthermore, Viju (2010) enumerates the factors militating against KM implementation. Some of them are:

i. *Lack of KM tools and techniques*: Availability of KM tools, techniques and technology-based learning are very few to equip teacher and researcher as well as need for development in various higher education components for searching, extracting, sharing, transforming and dissemination knowledge for easy adoption of KM.
ii. *Space and time constraints*: Geographical space remains the major constraints about the ICT support and other tools for applying KM in the regular process with the assumption that KM is applied 24x7 to achieve its objectives. It has been a fact that people and process will still be affected to confine with the time.
iii. *Face-to-face (F2F) interaction*: Another problem which can be included is F2F interaction which may create constrains for knowledge sharing among the students. Social interaction and F2F are duly lacking in KM especially when the geographical distance is large.
iv. *Language and cultural barriers:* There is no doubt that effective communication takes place when the language barrier is resolved.
v. *Collaboration and trust:* The importance of trust in any online community has been emphasized by researchers as trusted collaboration and exchange of knowledge can be possible. Nonaka et al. (2006) highlight that climate that fosters trust, care, and personal networks among HEIs employees is one of the most important conditions for high level of collaboration and knowledge sharing.

Asiyai (2013) highlights several factors that pose as challenges of quality in HEIs in Nigeria in the 21st century. These factors, among others include inadequate funding, inadequate/poor quality of teaching staff, poor policy implementation, lack of resources, lack of ICT facilities etc. These factors effectively contribute, in no small ways, to KM and use of state-of-the-art technology for service delivery in HEIs in Nigeria.

Similar Features of KM and E-Learning System

According to Yordanova (2007), there are many common features shared between e-learning system and KM. Some of these are:

i. Virtual collaboration/synchronous: In education, students and teachers can exchange information related to learning activities or specific topics of the proposed learning content. Participants of different types of group can exchange knowledge, skills and competences. Team members in an institution can send and receive important information or data related to their duties. Free exchange of data, knowledge and capabilities for collaborative editing of documents become even more critical when different members of the team are at distance (different offices, cities or countries).
ii. Project development: Tools and capabilities are critical for execution of team and individual tasks as well as delivery of necessary data, information and document in time. These tools are beneficial in the process of education. It allows projects developed by students to be scheduled and implemented on time. Equally, students can get used to work with the tools and they know which are strong points and drawback of project management and implementation in their work.
iii. Content as Learning Objects: It is very appropriate technology for development and exchange of different types of information.

E-learning System as an Enhancement to Knowledge Management

E-learning system has, been evolving separately from KM in the past. There have been recent investigations into the integration of these technologies (Allee, 2000). E-learning system will enhance the effectiveness of each of the five phases of KM as shown in Figure 3. Feedback, according to Qwaider (2011), has also been added:

i. Socialization: This focus on the competency and skills measurement that help identify the people with specific skills and knowledge in the organization (Woelk and Agarwal, 2003).
ii. Externalization: The system captures knowledge with the aim of teaching the people. This improves the knowledge capture process.
iii. Combination: Knowledge about products and processes of the business is organized to make learning the knowledge more effective and efficient with pedagogical techniques embedded in the knowledge.
iv. Internalization: E-Learning system will ensure that a person has learned the knowledge using assessments and alternative learning methods, if necessary.

v. Cognition: People can be provided with on demand performance support by getting just the training that they need at the time that they need it to complete a training task.
vi. Feedback: Assessments provide feedback concerning how well a person has learned and how well they have applied what they learned to solve a problem.

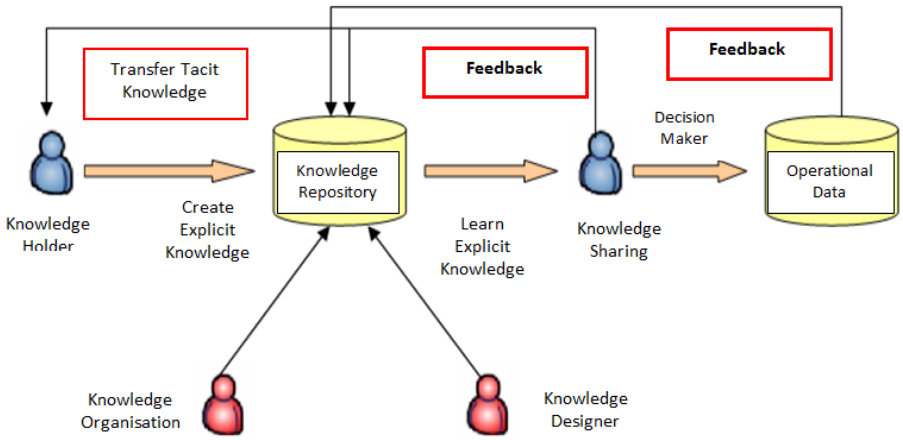

Figure 3. E-Learning System Enhancements to KM (Qwaider, 2011)

Integration of KM and E-Learning

Researches reveal great interest to introduce KM system ideas to e-learning (Ravet, 2002). The joint studies of e-learning and KM systems point out the same fundamental goal of facilitating organizational learning. Researchers also try to analyse the similarity of the goals, methods of assessment, and some knowledge sharing processes in both e-learning systems and KM. According to Sammour (2004), an e-learning system within KM is a knowledge resource repository such that the KM methods can be implemented to increase the effectiveness of knowledge dissemination. The IT and the Web contribute to knowledge sharing and the social life of learning. E-Learning system and KM are the social nature of constructing knowledge. KM takes an organizational perspective on learning, and the problem lies in the lack of sharing knowledge among members of the organization. In these scenarios, e-learning system presents the best way to acquire the dynamic, distributed, shared and collaborative knowledge with the help of technological devices to support this construction process (Carmean, 2010). Huang (2009) also opines that technology can only create the gains expected in the enterprise environment when the system designers recognize that information is dynamic and socially constructed. Enterprise knowledge must be negotiated and collectively constructed. Integration of e-learning system and KM capabilities can deliver qualitative services in HEIs, improve learning efficiency through KM and learning feedback. Hence, harnessing critical knowledge and using it to create a common vision and objectives can move an organization closer to high performance in workplace.

ICT and e-Learning in HEIs

Education is one of the sectors that have undergone series of changes with the influence of innovations in ICT such as provision of online content service, platform for organizing learning experiences and assessment. The methodology of education service delivery in Africa has to shift from that is highly dependent on physical infrastructure dependent (in the class) to one that makes extensive use of technology. The students, teachers, educational administrators and every stakeholder in education have benefitted from the integration of ICT in education. Due to current digital era, it is difficult to think of any event in our daily life that is not using ICT in our schools and classrooms.

The e-learning lays emphasis on the acquisition of knowledge and skill using electronic technologies such as computer, Internet-based courseware and local/wide area networks (Qwaider, 2011). E-learning system is essentially the network-enabled transfer of skills and knowledge and it refers to using electronic applications and processes to learn. The applications and processes of E-learning system include virtual classrooms, digital collaboration, web-based learning, stand-alone computer-based learning, and content is delivered via the Internet, intranet/extranet, audio or video tape, satellite TV and CD-ROM with the focus on the individual's acquisition of new knowledge and the technological means to support this construction process (Mihalca, 2008).

However, the use of computer technology to support learning leads to the development and creation of knowledge requires new pedagogical processes. Therefore, the shift towards technology-driven development has brought improvement in the dissemination and acquisition of knowledge.

Arabasz, Pirani and Fawcett (2003) assert that e-learning has grown to complement traditional classroom-based learning by combining the use of technology with effective pedagogy and reflective teaching thereby transforming higher education. Arasteh et al. (2014) say e-learning is essential for the improvement of learners' performance, engagement, self-regulation, flexibility, interest and motivation. E-learning enhances active participation and self-regulated learning that enables learning-pace adjustment and gives desired learning outcomes as learning materials can be accessed from anywhere through the web or Internet. Apart from the usual *face-to-face* dialogue, teachers and learners can effectively communicate with each other using e-mail, chat or discussion forums. This modern method of knowledge sharing in interconnected environment makes students active seekers rather than passive recipients of knowledge.

Advantages of E-Learning in Education

1. It offers lower cost to both students and implementers. Different e-learning products and packages exist ranging from CBT (computer-based training) materials on CDs to LMS (learning management systems) on the Internet. Based on the funds available, students have the option to select products and packages.
2. Distance learning materials are presented to the learners in various forms - text, pictures, audio, visual etc. and these materials can be stored in various media and formats over long periods of time and accessible over long distances. Contrary to face-to-face learning, these media can provide means of revision several times over in a day and over a period in a manner more accurate and convenient to students who are at the centre of the teaching and learning activity.
3. It has the potential to absorb the increasing number of students that characterise the African educational system particularly at the tertiary level.
4. It also makes available learning contents for re-use. That is, curriculum and materials essential for learning are developed and stored through digital media. These contents are, therefore, available for further study and review which makes them always available for re-use without the stress of development from scratch.
5. It provides more avenues for human development and increased educational opportunities for human development and increased educational attainment. People of all ages with little or much experience in formal education can develop themselves through the opportunities afforded by e-learning through distance learning.

Challenges of Implementing E-Learning

Education is obviously is a major driver for Africa's development and e-learning plays a significant role in the transformation agenda towards quality delivery of services in education. Consequently, African countries need to scale up actions to maximize on the potential of e-learning in creating innovative learning solutions. To achieve benefits inherent in e-learning, efforts must be made to combat challenges militating against full utilization of e-learning in HEIs. Kwofie and Henten (2011) categorise challenges of e-learning in Africa into four as follows:

1. *Individual challenges*: These involve student's challenges including motivation, conflicting priorities, economy, academic confidence, technological confidence, social support from home/employers and gender as well as teacher's focusing on technological confidence, motivation/commitment, qualification/competence and time available for developing e-learning materials for taking part in e-learning;
2. *Course design challenges: These include c*urriculum/content development, appropriateness of pedagogical models to favour a migration from instructor-centred approach to learner-oriented approach where the students take ownership of their learning, localization i.e. providing familiar artefacts with which the learners can identify, flexibility (in terms of how learning should take place, where, when examination should be taken, and selection of the medium of content delivery) and support for students from faculty members (i.e. lecturers);
3. *Contextual challenges*: These can either be organisational or societal/cultural challenges. Organisational challenges include knowledge management (building system where a knowledge repository is created or built on research, evaluation, sharing of experiences among e-learning implementing institutions, and the

establishment of e-learning units), economy/funding and staff training. The societal challenges include attitudes on e-learning and IT as well as rules and regulations on e-learning usage.

4. *Technological challenges*: These include situations where institutions have little or no access to computers and other technologies like low speed internet connectivity, cost of the technologies needed in setting up the e-learning system; and software and interface design where the e-learning software (LMS) supports the chosen learning model and pedagogy and the software is also easy to use are not readily available.

According to Olugbeko and Izu (2013), despite all the hindrances/threats faced by e-learning in Nigeria institutions, there are currently at least nine ICT for education initiatives at various stages of development by the education coordinating agencies of government. These agencies include Ministry of Education; Nigerian Universities Network (NUNet) project; The Polytechnics Network (PloyNet) project; The SchoolNet project; The Nigerian Education, Academic, and Resaerch Network (NEARNet); National Virtual Digital Library (Ministry of Education/NUC), National Virtual Library (Ministry of Science and Technology/NITDA) and National Information, Communication and Education Programme of the Presidency. It is evident that most of the HEIs in Nigeria have started building their ICT centers but the issues remain that Internet connectivity is of low bandwidth compared with developed countries and equally without consideration for other components that made up e-learning center.

Blended e-Learning Support in Service Delivery in African HEIs

The challenges of implementing e-learning are more pronounced in Africa than the developed countries in the world. Hence, the possibility of full-fledge adoption and actual usage in HEIs remains a bothering issue. Consequently, for effective service delivery by HEIs, there is a need for paradigm shift from learning that solely depends on e-learning with its attendant challenges to integrating ICT-based teaching/learning with the traditional face-to-face (F2F) method. According to Picciano (2006), blended learning in the broadest sense can be conceptualized as a wide variety of technology/media integrated with conventional, F2F classroom activities. Specifically, blended learning is a blend of fully online and F2F instruction. That is, blended learning or 'hybrid learning' is learning that combines the best of online learning and F2F (classroom-based) instruction for the purpose of enhancing learning as course content is moved out of the classroom to an online format allowing class time to be more interactive. It is a method of personalized learning that combines traditional F2F face-to-face instruction with digital learning that allows the students to benefit from control over pace and learning path. Figure 4 illustrates this concept.

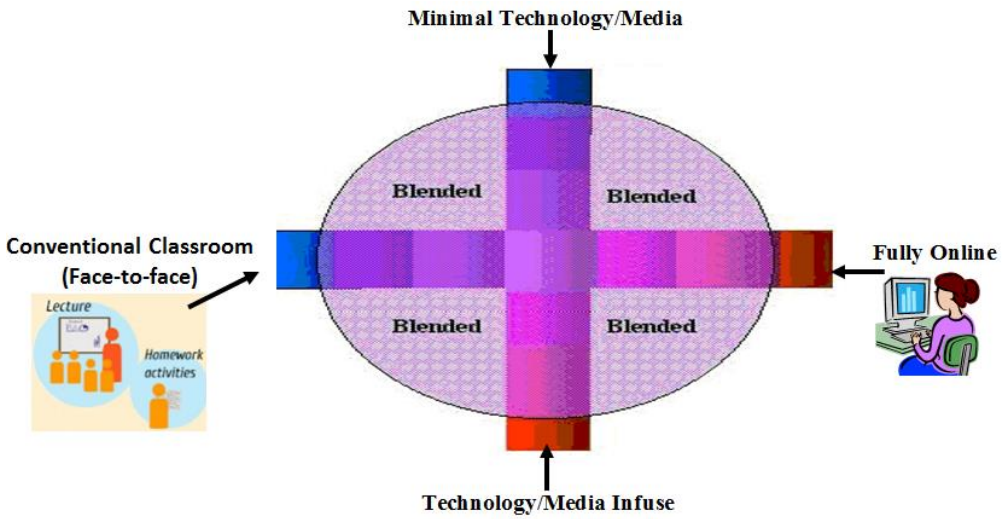

Figure 4. Conceptualization of Blended e-Learning

Blended learning mixes learning mode of various ways such as F2F learning, e-learning, software sharing, self-paced learning, and so on. BEL focuses on the mixture of offline and online learning and is meant to take advantage of the merits of F2F learning and e-learning for effective and efficient delivery of services by HEIs. This makes it easier to change or improve traditional educational systems and enhance the efficiency of the existing educational infrastructure, and such advantages of e-learning contribute to boosting quality education (Driscoll, 2002; Lee, Kim and Kim, 2005). BEL in HEIs such as universities currently encompasses the use of a

mix of improved course delivery strategies during F2F classroom teaching with live e-learning, self-paced e-learning which are facilitated by Virtual Learning Environments (VLE) (Aguti et al., 2014). This leads universities to pay growing attention to BEL with strong expectations than ever.

Benefits of BEL in HEIs

BEL is a great way to initiate an organization into e-learning because it benefits learners and allows university to gradually move students from traditional classrooms to e-Learning in small steps, making change easier to accept (Lee and Son, 2018).

i. It may increase the efficiency of education in aspects of university curriculum.
ii. It can enhance the quality of teaching in aspects of instructors' performance.
iii. It makes it possible to bring along to the effectiveness of learning in aspects of students' support. It is able to integrate each strong advantage such as sharing idea with one another for offline class, and over interacting mutually above both time and place (Lee and Son, 2018). Therefore, it considers not only offline but also online class's benefit making HEIs to offer better quality of education than ever.
iv. It is a powerful strategy to improve instructional environment and to enlarge the effectiveness and efficiency of education with adopting various advantages of both offline and online course.

Conclusion

In the era of DL, service quality is a key driver for effectiveness in HEIs higher education institutions and is highly related to student's satisfaction. It is a new emerging concept in the higher education environment as HEIs need to attract, serve and retain students by ensuring that the stakeholders' needs and satisfactions related to service quality are pre-determined and then addressed. HEIs are currently competing aggressively through competitive advantages and high service quality. Service quality is essential to provide information on the effectiveness of educational plans and improvement programmes through research and teaching by taking advantages of ICT-based KM in a BEL environment as this is capable of enhancing knowledge sharing through distance learning towards making "education for all" dream by African countries a reality.

This paper has illustrated how e-learning system can be used to enhance KM in HEIs in Africa and provide the benefits of both. Characteristics of KM and e-learning system have been highlighted. This paper shows the relationship among different types of KM, e-learning and BEL. It has been enumerated that there is a meeting point between KM, e-learning and BEL towards enhanced service delivery in HEIs in Africa. Future research efforts will focus on how both fields e-learning system and KM influence each other and how changes in one field can foster changes in the other one and how this process improve overall performance of the e-learning using BEL and KM processes for the purpose of making education reachable for all Africans through DL.

Recommendations

It is essential to create a knowledge sharing culture as part of KM as this helps employees to do their jobs more effectively. As HEIs deliver these arrays of innovative services to their communities, the critical success factor is technology supported by trust and collaboration. When there is fast growing in the technology to manage knowledge, this will be beneficiary to both teachers and learners as knowledge can be collected, stored and accessed to improve the attainment of their educational goals. Consequently, African governments should step up their efforts in funding technology-enhanced training in HEIs and necessary policies to promote effective and efficient quality services in ODL education using KM and BEL.

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