

NEEDS FOR KNOWLEDGE MANAGEMENT FOR DEVELOPMENT IN AN E-LEARNING ENVIRONMENT

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ABSTRACT

Knowledge management and sharing of knowledge help to improve the quality of education as well as the creation and maintenance of a learning culture. Knowledge management plays a key role in the inputs and outputs of the educational process in an e-learning environment, by improving students' knowledge. The objectives of this study are to explain knowledge and knowledge management concepts; e-learning concepts; needs and strategy for knowledge management development in an e-learning environment; integration of e-learning system and knowledge management system; application of knowledge management theory in an e-learning environment and e-learning tools for knowledge management development. The study concludes that knowledge management and e-learning go hand-in-hand. E-learning is a tool used for knowledge acquisition, it helps in extracting tacit knowledge sharing and the essence of SECI model for the knowledge-creating process where; Socialisation is knowledge sharing; Externalisation is writing (codification) of knowledge. The combination is storage, systemization, and processing of data, information, and knowledge and Internalisation is learning. The researcher adopted a descriptive research design in nature, the paper contains a theoretical review of scientific literature on knowledge management and E-learning; Secondary sources of data were used for data collection like different web links, books, journals, and old research papers.

Keywords: Knowledge, Knowledge Management, E-learning, E-learning Environment, Nonaka SECI model.

1.0 INTRODUCTION

Organizations nowadays have identified knowledge as a key resource, a vast and largely untapped asset; the application of knowledge resources successfully helps the organization to deliver creative products and services as an important feature of organizational survival. In the knowledge economy era, knowledge management is absolutely a new idea; a concept and method of management which requires linkage of information with activities and information with a man so as to realize the sharing of knowledge and it also convert tacit knowledge to explicit knowledge (Asokan & Dhanavandan, 2016).

According to Kaur (2015), knowledge is the most valuable organization's resource. Kaur refers to knowledge management as a multi-disciplined approach to achieving organizational

objectives by comprehensively gathering, organizing, sharing, and analyzing knowledge in terms of resources, documents, and people skills.

Knowledge is belief, truths, concepts, and perspectives, judgment, and know-how while management is the arrangement of processes needed to collect knowledge and the tools that should be used to manage this knowledge. E-learning is the education received using electronic applications such as the Internet, network, or standalone computer. It is basically the network-enabled transfer of skill and knowledge. E-learning can be self-paced or instructor-led and includes media in the form of text, streaming video, and audio, it builds users' knowledge to improve organizational functioning (Lestari & Hamka, 2018).

Knowledge management can be defined as a systemic and organizationally specified process for acquiring, organizing, and communicating knowledge of employees so that other employees may make use of it to be more effective and productive in their work (Kankanhalli et al., 2005). Knowledge management is a discipline that promotes an integrated approach to the creation, capture, organization, access, and use of an organization's information assets. These assets include structured databases, textual information such as policy and procedure documents, and most importantly, the tacit knowledge and expertise resident in the heads of individual employees. It's the process of capturing, organizing, and storing information and experiences of workers and groups within an organization and making it available to others.

Knowledge management is the way to keep knowledge growing through sharing and such sharing is best done either in material or human terms. Knowledge management encompasses identifying and mapping intellectual assets within the organization, generating new knowledge for competitive advantage within the organization, making vast amounts of corporate information accessible, and sharing best practices and technology that enables all of the above- including groupware and intranets. It is a process, that deals with knowledge creation, acquisition, packaging, and application or reuse of knowledge. Al-jedaiah (2020) noted that knowledge management is the process that deals with creation, capture, refine, storing, managing, and disseminate.

The objectives of the study are to:

- i. explain the knowledge and knowledge management concepts; types of knowledge and process of knowledge management.
- ii. Discuss the E-learning concepts; types and features.
- iii. Explain the needs and strategy for knowledge management development in an e-learning environment.
- iv. Discuss the integration of the e-learning system and knowledge management system; application of knowledge management theory in an e-learning environment and e-learning tools for knowledge management.
- v. adoption of Nonaka SECI model and identify e-learning tools for knowledge management development.

2.0 RESEARCH METHODOLOGY

(a) Research design

The researcher adopted a descriptive research design in nature, the paper contains a theoretical review of scientific kinds of literature on knowledge management, E-learning and Nonaka SECI model.

(b) Sources of data

Secondary sources of data were used for data collections like different web links, books, journals and old research papers.

(c) Limitation of the study

The study is based on secondary data, collection of primary data was very difficult because of non-availability of resources and shortage of time.

3.0 REVIEW OF LITERATURE

3.1 Knowledge and Knowledge Management Concept

Knowledge is a human-based construct which means that knowledge is created in minds of people. In this creation, human-based factors such as intuitions, beliefs, culture, experiences, etc. play a determining role. There is no knowledge management model which is accepted worldwide, because of these characteristics of knowledge (Yilmaz, 2012). However, the meaning of knowledge is context-dependent in which knowledge is created, shared, and used. Besides, knowledge management (KM) is a new approach compared to other management approaches such as total quality management, human resources management, etc, and has no proven tools and methods yet. In addition, knowledge is an intangible asset and intangible assets cannot be directly managed. Management process of intangible assets can be only indirectly formed. Indirect management means that relevant conditions impacting knowledge creation, knowledge development, and knowledge sharing are analyzed and improved. In this way, different requirements for effective knowledge management should be fulfilled (Probst et al., 1998; Kendal & Creen, 2007; Yilmaz, 2010).

Knowledge is an important organizational resource. Its application to existing knowledge has the potential to generate new knowledge. Once created, knowledge can be articulated, shared, stored, and decontextualized to yield options for the future. For all of these reasons, knowledge has the potential to be applied across time and space to yield increasing returns (Garud & Kumaraswamy, 2005). The key factor to organizational knowledge is strategic management which can help the organization to sustain a competitive advantage in a volatile environment.

3.2 Types of Knowledge

Knowledge represents a crucial drive for organizations' competitive advantage. It generates value by supporting an organization's capability to produce innovation (Ahuja and Katila, 2001).

Knowledge is categorized as core, advanced and innovative. Core knowledge is the minimum level of knowledge required for daily operations, advanced knowledge enables a firm to be

competitively viable, and innovative knowledge enables a firm to lead the industry to which it belongs and its competitors (Rokade, 2017). There are two types of knowledge; these are explicit and tacit knowledge.

Tacit knowledge According to Barack (2020), tacit knowledge is a subjective and experience-based knowledge that cannot be expressed in words or numbers. Therefore, it cannot be transmitted and shared easily, it is highly personal which is in the human mind embedded in an individual's experience, and involves intangible factors as personal beliefs, perspectives, values, and instincts, difficult to formalize and communicate. It is difficult to articulate or write down, but can be shared between people through discussion, stories, and personal interaction; it includes skills, experiences, insight, intuition, and judgment. Rokade (2017) added that tacit knowledge is subjective and experiential knowledge that cannot be expressed in words, sentences, numbers, or formulas (context-specific), technical skills, craft know-how, cognitive skills, beliefs, and image perspective mental models. According to Nonaka, (1994), the Socialization mode indicated that tacit knowledge is exchanged among individuals through shared experiences in day-to-day social interaction. Tacit knowledge is difficult to formalize and can only be acquired through the direct sharing of work experience (working side by side or observing colleagues). Socialization (Tacit to Tacit) is the process of converting an individual's tacit knowledge into social interactions by sharing one's feelings, emotions, experiences and mental model with others in the organization. Kaur (2015) noted that Externalization (Tacit to Explicit) is an individual process through which the tacit knowledge, gained from Socialization, is transformed into explicit knowledge, thus allowing it to be shared, disseminated, and transferred to others in the organization. It is done through the use of ideas, images, and concepts, figurative and visual language. Tacit knowledge in the organization can be converted to explicit knowledge through the externalization mode in the form of concepts, images and written documents (Gherar, 2000).

Explicit knowledge: Rokade (2017) defined explicit knowledge as the systematic and formal knowledge that can be expressed in words or numbers and documented or stored in databases as electronic records e.g a telephone directory, an instructional manual or a report of research findings. The knowledge can be readily transmitted between individuals formally and systematically. Explicit knowledges are the objectives and rational knowledge that can be expressed in words, sentence, and formulas (contexts-free) theoretical approach problem solving manual databases. Bawack (2020) added that explicit knowledge can be captured, stored, and transferred adequately with the help of electronic tools. Nonaka (1994) noted that explicit knowledge is pooled with other intra-or inter-organizational explicit knowledge through combination mode, being merged, edited, or processed to form more complex and systematic explicit knowledge. While Kaur (2015) explains that, Combination (Explicit to Explicit) is a social process in which explicit knowledge is collected, combined, and edited from Externalization Socialization (Tacit to Tacit) and Internalization (Explicit to Tacit) is the closing of the circle of knowledge creation. It reflects the transformation of explicit knowledge into tacit knowledge through continuous individual and collective interactions. Nonaka (1994) positions that in Internalization mode, explicit knowledge is absorbed by individuals enriching their tacit knowledge base.

3.3 Processes of knowledge management;

Jui, Sabyasachi&Priyaranjan (2017) noted that the knowledge management processes as fellow

- Knowledge creation and acquisition: Knowledge creation and acquisition involves the growth of people with knowledge either individually or in groups or communities of practice to acquire knowledge from intangible tacit knowledge.
- Knowledge sharing: Knowledge sharing involves in creating a learning process when people are interested to develop new knowledge by helping each other.
- Knowledge capture: Knowledge capture is the process of converting tacit knowledge to explicit knowledge and also vice-versa through externalization and internalization.
- Knowledge storage: Knowledge is particularly stored in the form of a knowledge repository that includes documents, reports, and databases.
- Knowledge application: The knowledge created and captured is to be applied in different learning contexts to achieve competitive advantages such as creating KS.
- Knowledge Evaluation: Learners will be assessed on a regular basis to verify that knowledge must be relevant and accurate.

4.0 E-LEARNING CONCEPT

Ahmad et al, (2020) opined that e-learning is a form of conventional learning that is poured into digital format and presented through Information Technology. In the world of business and industry, e-learning is used to assist processes in improving employee competencies or human resources. E-learning is a powerful tool that has been increasingly used to power the knowledge-management system. With the advent of e-learning, the process of accessing recorded information can be done from a place even far away from a workplace. Hence, e-learning not only serves as a facilitator but also makes it easier for the employees of a company to continue learning from their or others' past experiences that have been recorded, documented, and stored in a repository (Naidu S 2006). With the right e-learning system in place, an organization can quickly increase its efficiency in replicating knowledge that has been successfully acquired and learned. This rapid replication is crucial to ensure that the company does not repeat the same mistake(s) over and over again in learning what is necessary and that knowledge information is not isolated to only individual parts of the organization. Ahmad (2020) noted that the use of e-learning is intended to provide employees with learning to continuously improve their competencies in order to boost their own performances. This will ultimately play a role in enhancing the company's progress and performance. In using electronic media as the supporter of this learning process, everyone who wants to learn does not need to be face-to-face. Only computer media and learning materials are deployed using electronic media. In addition, e-learning also allows for collaboration among students or with teachers who are the mediators of the learning process. E-learning allows this to be implemented regardless of place and time constraints. E-learning is the use of Internet technologies in order to create a rich learning environment that includes a large variety of instruction and information resources and solutions, and also to deliver this environment. The goal of e-learning is to improve individual and organizational performance (Yilmaz, 2012). E-learning is a way of enhancing and facilitating learning through devices such as personal computers, CD-ROMs, digital television, PDAs, and mobile phone. Communication technology enables the use of the internet, e-mail, discussion forums, collaborative software, and team learning systems (Dhanavandan, 2016). E-learning is any

learning that is enabled electronically; it's the use of ICT to access online teaching and learning resources (Abdad, 2019).

4.1 Types of E-learning

E-learning is categorized into two: synchronous and asynchronous e-learning according to Dhanavandan, S & Tamizhchelvan, M (2016) and Yakima, F. Oseji, N. & Sani, J (2021)

Synchronous e-learning. This is the type of e-learning in that instructors and learners are together at the same time, but not necessarily in the same physical place. It establishes contact between instructors and students at real-time. It helps to improve teacher-student relationships and peer communication widely embraced in recent times. Examples are live radio/live interactive television broadcasting videoconferencing, teleconferencing, chatting, online seminar, etc. application sharing, audio and video conferencing, chat, instant messaging, shared whiteboard and virtual classroom are the categories of synchronous e-learning, etc. all the students and instructors are in the same (virtual) environment at the same time.

Asynchronous e-learning. This is the type of e-learning that is usually student-centred, it does not involve real-time communication and students are allowed to access online materials at their own time and pace. There is no specific set time for teaching and learning. It is self-paced; Instructor can come together and communicate with a student group over the Internet. This type of e-learning doesn't establish contact between instructor's students at the real time. Examples include extraction of knowledge through CD, DVD, video, audio tapes or through web pages. Correspondence through E-mail, discussion groups and self-paced courses. However, it is not required that all persons are online at the same time. Students are alone by studying learning materials, as well as by interacting with the instructor and other students by leaving messages. It is anticipated that the messages are answered in a specific period of time, for example, within a few hours. In this method, student can work alone, but continues to provide communication with an instructor or student group (Henderson, 2003).

4.2 Features of E-Learning

E-learning portals have some distinguishing features that set them apart from traditional classroom learning which in turn impact a huge population as positioned by Surabhi, T. et al (2015) and Muthu, et al (2016) as follows:

Self-Paced e-learning is self-paced, that is, it is entirely up to the person when, where and at what time they want to take up a course. Whenever the person has time, he/she can always log in and take up the courses. Learning is self-paced and gives students a chance to speed up or slow down as necessary.

Not bounded by geography e-learning is bounded by boundaries. This means that the person does not need to be in the same area, state or even country to view the content which is available online for learning. It is Cost effectiveness.

Greater number of audience the attendance of the users in e-learning is always much higher than the traditional classroom learning, since the courses are available 24x7. 24/7 accessibility makes scheduling easy and allows a greater number of people to attend classes.

Better Contact There is always better means of communication between the students and faculty members because of instant messages in the e-learning portals.

Enhancement of internet and computer skills there is a scope of learning more about the computer and internet skills. The person using an e-learning portal uses more of computer and has a running internet. This makes people computer literate by enhancing computer and Internet skill.

User friendly E-learning portals are user-friendly; users navigate through the portal easily by understanding the user interface. It accommodates multiply learning styles using a variety of delivery methods geared to different learners, more effective for certain learner. E-learning is designed around the learner.

4.3 E-learning environment

An E-learning environment is a web-based system that provides the possibility of conducting teaching-learning processes using software tools and applications (Cassidy 2016). Being student-centered, self-directed, interactive, flexible and self-paced is considered an advantage of this environment that could lead to persistent and effective learning (Mousavia, et al 2020 cited Hampel and Dancsházy 2014). The learning is based on information and communication technology (ICT), in which a wide range of asynchronous and synchronous tools are used (Bdiwi et al. 2019). These tools provide the opportunity for students' and teachers' interactions. E-learning environments in organizations assisted with distributing educational resources, supporting instructor-to-student communication, facilitating student learning, communities managing the student learning process, and enabling students to take e-learning courses (Islam, 2013 cited by Kim, 2019). In an e-learning environment, knowledge management builds users, enhanced and facilitates their learning capabilities, and improved access to information online resources. Within the context of an e-learning environment or educational organization, knowledge management is a process that deals with knowledge creation, capture/acquisition, packaging, application, storage and reuse of the knowledge that is relevant to them for continuous improvement and update, making it accessible in a variety format and in the most effective manner to the users. Learning environments, into which advanced technologies are integrated, facilitate acquiring knowledge, skill, and attitude (Mousavia, et al 2020).

5.0 NEEDS FOR DEVELOPING KNOWLEDGE MANAGEMENT IN AN E-LEARNING ENVIRONMENT

Ahmad et al, (2020) viewed knowledge as a wealth of information. It is therefore important to note that, to make productive knowledge, people need information. Ahmad et al, (2020) cited Polanyi (1967) simply defined explicitly as tacit knowledge. Explicit knowledge can be expressed in the form of numbers and letters. This is easily shared formally and systematically in the form of data, specifications, manuals, and so on. On the other hand, tacit (hidden) knowledge includes deep understanding, intuition, and hunches, which are often

difficult to formalize and share. Transfer of explicit knowledge is frequently occurred, for instance, employees sharing reports, financial budgets, policies, and so on. Hidden knowledge, in contrast, needs to be transformed into explicit knowledge so that it can be shared. This needs to be solved without losing the important part of knowledge. Nonaka, (1994) had identified four methods that allow Tacit knowledge to be transformed into explicit knowledge, which are socialization, externalization, internalization, and combination.

- Socialization is the sharing of hidden knowledge between individuals, usually through joint activities and non-verbal or written instructions, which are among the main teaching methods that underlie the concept of mentor-students. Both allow newcomers to see how others think (Becerra-Fernandez and Sabherwal, 2001).
- Externalization involves the expression of hidden knowledge and its conversion to a more comprehensive form that is easier to understand (Becerra-Fernandez and Sabherwal, 2001). Typically, externalization involves techniques that help express ideas or images as the concepts of words or visuals (Nonaka, 1994). For example, conventional learning methodologies require the externalization of a professor's knowledge as an initial step in student learning.
- Combination involves converting of explicit knowledge into a more complex set of explicit knowledge. Communication, diffusion, integration, and systemization of knowledge are a great combination that contributes to knowledge at the group level as well as the organizational level (Nonaka, 1994).
- Internalization is the conversion from explicit knowledge to hidden knowledge. The condition of internalization happens when individuals must recognize relevant knowledge in an organization's explicit knowledge, embrace it as their own, and combine it in their basic knowledge. This is the theory of learning behind 'on-the-job training' and 'understanding-by-doing'.

6.0 STRATEGY FOR DEVELOPING KNOWLEDGE MANAGEMENT IN AN E-LEARNING ENVIRONMENT

According to Aswath and Gupta, (2009) cited by Robertson and Brun, (2005); Lestari and Hamka (2018), and (Ahmad et al, 2020) knowledge management centered round three components:

- a. People – Technology experts, Knowledge professionals and Knowledge manager s
- b. Process - Creation, capturing, storing, sharing, and application.
- c. Technology- Hardware and software packages

(a) People: the focus of knowledge management are all the people who are members of an organization, they are the creator and users of knowledge assets (both explicit and tacit). People are the target groups involved in the creation, sharing and use of generated knowledge within and outside the organization. Knowledge is associated with human cognition; knowledge-sharing culture is the primary requirement in knowledge management. The people associated with knowledge management are of three types these are: (i) Technology experts: these are people concerned with the design and development of tools and services for knowledge discovery. They build applications, databases, and networks that allow the

organization to do its work with accuracy, reliability, and speed. (ii) Knowledge professionals: they are the people who have the skilled, training, and know-how to organize information/knowledge into systems and structures that facilitate the effective use of knowledge resources in the organization. (iii) Knowledge managers: are the groups of people, who focus on the achievement of organizational goals. They identify present needs and problems and initiate practical and manageable activities to achieve set goals. Staff motivation is one of the important features of knowledge management so that the staff can be able to contribute and share their knowledge. Tacit knowledge is the large portion of organizational knowledge that is embedded with individual experience, judgments, and intuition. People/human resources include education, experience, and understanding of the standard operational procedure (SOP). The role of people here is very important as the producers of knowledge and disseminators of knowledge. If this human aspect is not considered properly, which means moving the human aspect from being the main supporter, then the KM will fail in practice. This is because the purpose of the KM itself will not succeed without the support of the human factor as humans themselves are the knowledge itself (Ahmad et al, 2020).

(b) Process: the following are the stages in the knowledge management process these are: (i) Environment creation – for people working in the organization to share their tacit knowledge, they have to change their mindset, nurture it, learn about the system, the users and identify how to integrate people, process and the technology. (ii) Knowledge creation the aim of knowledge management is to identify new knowledge, create, and add value and vision to the new knowledge. Knowledge in the public domain is explicit and published while tacit knowledge is personal. (iii). knowledge organization- this process has to do with data gathering, classification knowledge database creation, and content mapping. (iv) Knowledge sharing – create value for the intangible assets (HR/Tacit knowledge). (v) Knowledge synthesis – the intrinsic value of knowledge created lies in its application in an appropriate situation. Application may be started from top-down or bottom up and even in the middle each strategy has its own merits and risks. Process include cycle Knowledge Management i.e. socialization, externalization, combination and internalization.

© **Technology;** Technology becomes a tool, which is a sufficient element, for the people and processes to run correctly. The technological aspect is the enabler of the KM, such as a tool to regulate incoming knowledge, store it, and incorporated it into the KM system (KMS). If the technology aspect is only independent, then the success of the KM will not be achieved as the technological element per se is only a supporting tool for the process of transmitting knowledge and supporting the dissemination of knowledge from the human element (people). This means that the technological element, by all means, cannot stand alone without the other two elements. Based on the elements stated above, it can be concluded that if they are associated with e-learning, each of these elements has similarities to the application of e-learning itself within an organization. In an organization that wants to exercise a learning process through electronic media (e-learning), an effort is needed to empower the learning process within the organization.

The relationship between the KM and e-learning is a cycle, which means that a process in the KM will not stop. If more knowledge is stored, then the organization may have much richer and more detailed knowledge. In line with the development of stored knowledge and the

increasing level of collaboration between employees, they will be able to get familiar with e-learning in the organization.

7.0 INTEGRATION OF E-LEARNING SYSTEM WITH KNOWLEDGE MANAGEMENT SYSTEM

Putzhuber(2003) positions that some objectives of e-learning systems and knowledge management systems are different. In e-learning systems, the learner's knowledge would be supported by providing structured learning content and intercommunication. Knowledge management system (KMS) provides knowledge through content management systems (CMSs) which have search and sort facilities, and also collaboration possibilities with their experts and other users on various topics (Putzhuber ,2003).

Integration of EL with KM processes can create synergies to significantly improve the creation of new knowledge and the performance of learning processes (Yilmaz, Y. (2012): Integration of KM has become an unavoidable trend in supporting self-directed and just-in-time learning and the creation of shared organizational knowledge (Bouras, C. et al (2001): Codification of human knowledge i.e., tacit knowledge into physical form i.e., explicit knowledge is the indivisible part of learning without which knowledge is of no use. Without codification, knowledge cannot be transferred to society. KM is the field of artificial intelligence (AI) that facilitates the codification of knowledge. Codification is done through a set of rules governed by an expert system (ES) which is a part of KM (Jui, Sabyasachi&Priyaranjan,2017).

Putzhuber (2003) identify the relationship between E-learning system and knowledge management system as follows:

- E-learning and KM systems provide knowledge in different forms to the users. This content can be reused, annotated, modified, or whatever else is needed for different approaches.
- The system architecture is almost the same for both concepts. It is a client-server architecture with high complexity in the server part whereas the clients are more or less thin.
- For both systems it is very important to provide communication and cooperation facilities. These vary from e-mail over chats to forums or other forms of cooperation.
- Also personalization plays an important role in both approaches. Relevant systems for both concepts support some kind of personalization either role-based or person-oriented.
- Some kind of access regulation is available, either group or person specific. It is very important to provide only specific information to specific users and groups.

8.0 KNOWLEDGE MANAGEMENT THEORY AND ITS APPLICATION TO KNOWLEDGE MANAGEMENT IN AN E-LEARNING ENVIRONMENT

Liebowitz (2011) noted that knowledge management deals with capturing, applying, and generating knowledge internally and externally. Liebowitz adapted learning theory to leverage knowledge management and the e-learning model to create a Venn diagram with three components: knowledge-enabled, learner-centered, and community-access.

The knowledge-enabled component would relate to knowledge retention and transfer issues. The learner-centered component relates to e-learning considerations. The community-accessed component combines both knowledge management and e-learning through social networking, online communities, and competitive intelligence. The intersection of the components may be called "strategic intelligence"; that is, how to improve the strategic decision-making process of the organization. Liebowitz (2011) who cited the Horizon Report (Johnson, Smith, Willis, Levine, & Haywood, 2011) opined that knowledge management and E-learning can contribute to knowledge generation and memory building, they have the potential to improve an organization's or an individual's internal and external effectiveness.

Knowledge management and e-learning go hand-in-hand, according to Radwan (2015) E-learning is a tool used for knowledge acquisition, it helps in extracting tacit knowledge sharing. The importance of knowledge management is for creating, using, collecting, exchanging and retaining knowledge to add value. Shamizanjani et al (2014) proposed a conceptual framework of knowledge management mechanism in e-learning environments it has defined three different types of learner's knowledge which are about, from and for and it shows that the most important electronic mechanism for management of the three major types of learner knowledge was introduced as "electronic community of practice," "learner complaining recording/satisfaction collecting system "and web seminar"

Radwan (2015) added that the integration model of e-learning systems and knowledge management should be determined by learners sharing their knowledge and skills with each other by means provided by the system. The next step will be the transformation of tacit knowledge into explicit knowledge. In the final stage of explicit knowledge is transformed into tacit knowledge. Knowledge sharing is defined as sharing knowledge, practice, and skills among learners. It essential step in the knowledge management process as knowledge can be transferred to other learners within the community. Also, this helps in creating new knowledge and improving the learning process by adopting of Nonaka (1994) SECI model:

Socialization for e-learning is socially oriented to support individuals, teams, and participants in organizations or society. The aim of socialization knowledge management is to cross the borders of time and location and to encourage people to communicate, share knowledge and enhance group decisions in an e-learning environment (Liebowitz, 2006). Externalization for e-learning is codifying-oriented to articulate and codify knowledge. Through externalization of knowledge management in an e-learning environment, knowledge can be used by more people, organizations, and societies, thus ensuring better decision-making and problem-solving (Turban, 2011). The combination is typically data-, information- and knowledge-processing-oriented. The list of combination knowledge management is the longest list of the available e-learning, supporting data, information and knowledge processing, storage, and retrieval. In an e-learning environment, the most comprehensive data mining and artificial intelligence systems enable deep data and knowledge discovery based on huge amounts of data or ontology/taxonomy stored knowledge (Han &Kamber& Pei, 2012, Natek&Lesjak, 2013). Internalization is learning-oriented, a variety of dedicated e-learning solutions. Individuals are learning when using knowledge management for business problem-solving and decision-making. E-learning environments benefit from using knowledge management as learning organizations (Natek&Zwilling, 2014, Negnevitsky, 2011).

9.0 E-LEARNING TOOLS FOR KNOWLEDGE MANAGEMENT DEVELOPMENT

Rokade (2017) identifies e-learning tools for knowledge management development as Iigo, Hootsuite, iGoogle, iTunes, Mindmeister, Quora, Scoopit, Screenr, Slideshare and WordPress

Iigo- Diigo is a social bookmarking tool, that has many dimensions for learning. You can bookmark articles; tools and images for future reference share them or save them to a “Read later” folder. you can add note web with sticky note comments and share the note with others, and also search for topics of interest and see what others have bookmarked.

Hootsuite - a tool for an efficient way to use Twitter for learning purposes it organizes your Twitter streams into columns so you can easily see the tweets that are coming and going. It allows you to manage multiple social profiles from one dashboard.

iGoogle –started out as a custom homepage that allowed you to add gadgets for weather and such, but quickly became known as an RSS aggregator. iGoogle organizes your RSS subscriptions from blogs to new sites into user-created categories.

iTunes – this tool provides the ultimate selection of podcasts that work on any device, it’s for learning purposes.

Mindmeister – is a mind mapping tool available for this purpose it has templates and a public collection of maps to view.

Quora – quora’s tagline is that it connects you to everything you want to know about “how is that for a learning goal? It is a place to get questions and answers and to share knowledge. You can create a personalized homepage in quora around your topics of interest.

Scoopit – scoop. It is a web application for curating. Articles are clearly laid out and they are easy to access with one click.

Screen – is a quick learning link to an inspiring idea.

Slideshare – allows anyone to share their presentation

WordPress – used as a content management system on one’s own domain. It enabled millions of people to share their ideas and content. It encouraged learning professional to share and discusses issues.

10.0 CONCLUSION

Knowledge management in an organization today is identified as a key resource. The creative product and services of an organization can be delivered successfully with the application of knowledge management. Knowledge management and e-learning go hand-in-hand. E-learning is a tool used for knowledge acquisition, it helps in extracting tacit knowledge sharing. Knowledge creation is the most important knowledge management process. Nonaka had developed a well-known and comprehensive SECI model of the knowledge-creating process. The essence of SECI: Socialisation is knowledge sharing; Externalisation is writing (codification) of knowledge. The combination is storage, systemization, and processing of

data, information, and knowledge and Internalisation is learning. Using these simple facts, the SECI model is precise enough for knowledge management in an E-learning environment. Using these simple facts, the SECI model is precise enough for knowledge management in an E-learning environment. The study contributes to our need for knowledge management development in an e-learning environment.

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