Hybrid Model Of E-Learning With Knowledge Management

Mohamed Jama Madar

Abstract: The world is moving towards digitalization of knowledge which makes E-learning an important issue and prime concern that can be enhanced by combining it with another separate world of knowledge called knowledge management. This research paper introduces the complementary structure of E-learning and knowledge management and their relationship. E-learning is used by education providers only and it is the application of Internet technology in teaching and learning process while knowledge Management is the process of capturing, disseminating, applying and managing organizational knowledge. E-learning value chain focuses on knowledge delivery as knowledge management is aimed at knowledge capturing but they are two complementary processes if they are properly integrated. Knowledge management and E-learning have some basic functions or features in common which indicate the compatibility of the two structures. This research paper proposes a hybrid model which accommodates the services of E-learning and the knowledge management simultaneously. This model can be used by all types of educational providers including consulting firms and other learning organizations. The proposed model has functions of capturing both tacit and explicit knowledge as well as knowledge sharing and delivery mechanisms. As a result, the hybrid model puts the life of components of E-learning and major features of KM together which make this model very useful for both academic and non-academic institutions including business service providers.

Index Terms: Knowledge Management, E-learning, E-learning Value chain, KM Value chain and pedagogy

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1. INTRODUCTION

E-learning is the application of Internet technology (intranet, extranet and Internet) in teaching and learning process in educational institutions [16]. Depending on institution's requirements, there are various types of E-learning systems used for different purposes. For example, content management system is used for increasing accessibility of content to students. Pedagogical E-learning is used for content delivery to learners at different places. E-learning can either be asynchronous or synchronous [7]. Asynchronous E-learning is used mainly for content management system; Users access it at different times but they do not have real time collaborations [10]. Synchronous E-learning (or pedagogy) is designed for online users. In synchronous E-learning, teachers and students collaborate at the same time [4]. Content management system for E-learning acts as archives for learning materials which are availed on the web. E-learning pedagogy only delivers curriculum to learners. Establishing E-learning demands different institutional requirements, but in all cases, ensures an established and a maintained system [8].

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Knowledge Management is designed for managing institutional knowledge, acquiring, disseminating and socializing both tacit and explicit knowledge. The concept of KM is encompassing any processes and practices concerned with the creation, acquisition, capture, sharing and use of knowledge, skills and expertise [13]. KM is the discipline that helps spread knowledge of individuals or groups across organizations in ways that directly affect performance. KM is getting the right information within the right context, person, and time for the right business purposes. Otherwise spreading knowledge of individual or group is basically the KM activity that involves generation, codifications and transfer [2]. KM and E-learning system both address the same fundamental functions which are facilitating learning in organization. The similarities of knowledge management process to E-learning process are the two easy partners for companies and institutions that have recognized their importance [11]. Depending on the basic difference of KM and E-learning, also the value chains of the systems are also different. E-learning value chain ranges from institutional readiness, instructional designs and delivery activities. Whereas, KM value chain mostly deals with strategic knowledge management, acquisition and its applications to solve problems or synthesize products and services [15]. Common features of the KM and E-learning systems make them as two sides of the same coin. For that reason, KM and E-learning are compatible and can be easily combined to propose a hybrid model representing the functions of the two.

2. E-LEARNING SYSTEM VERSUS KNOWLEDGE MANAGEMENT SYSTEM

As their names indicate, E-learning and KMS are designed for different purposes but technologies used by both systems are very similar particularly to asynchronous E-learning systems. E-learning is designed for teaching and learning process only. The users of the E-learning systems are students and lecturers and it is based on requirements of these users as well as the university. Pedagogically E-learning has three dimensions. First, technology dimensions of E-learning focuses on delivery methods for content to learners. Second, content management and instructions determine what is to be the purpose of the system. Third, apart from the purpose of E-learning, it is only used in educational settings [21]. According to Madar (2011),

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E-learning improves students' academic performance and it concludes that the more students use the E-learning the better academic performance they have. In addition to that, E-learning does not only improve the achievements of the students but also adds value to university's academic activities not limited to teaching and learning. At present, E-learning system are very common to almost all universities to avoid disruptive technology. The following figure 1 presents a model of collaborative of E-learning system.
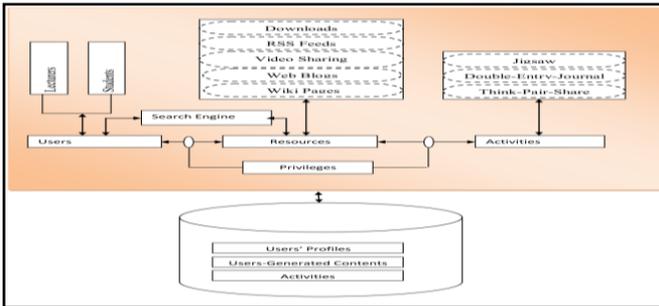

Figure 1: Collaborative Model for E-learning, Halina, et al. (2011)

Based on types of E-learning, the figure above exhibits a model of E-learning designed for both asynchronous and synchronous learning method. As explained, E-learning is designed for teaching and learning process among students, teachers, and other related bodies. This model however contains elements required for to establish E-learning systems whereby each feature or structure on the model performs specific tasks. Technologically, the model employs web 2.0 collaborative tools including wiki, search engines and video sharing technology [19]. As mentioned in figure 1; the primary users of the system are learners and teachers with different privileges. Additionally, the model shows a central repository which serves as the library for the system. This system resamples a classroom since all activities happen in the traditional classroom settings have technology based substitutes.
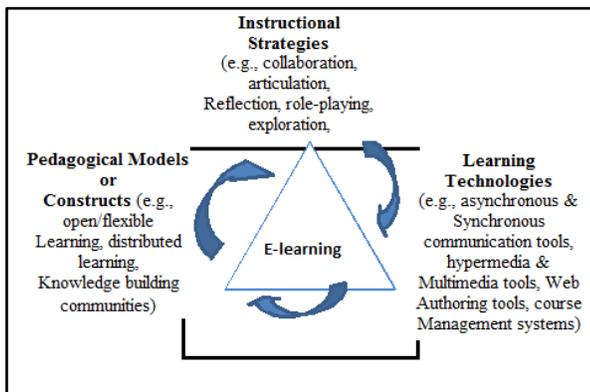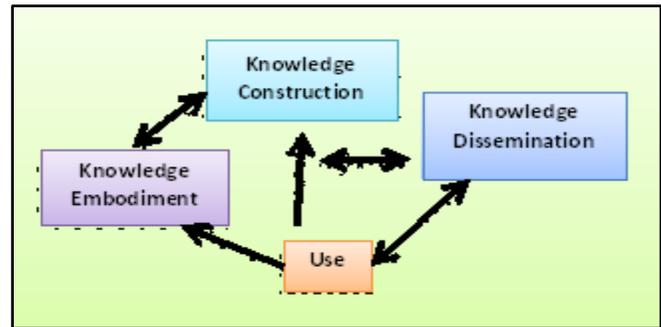

Figure 2: Theory-Based Design Framework for E-Learning Adapted from N. Dabbagh, (2005).

In contrast, KMS is designed for managing organizational knowledge and is used mostly by business institutions or large cooperates. Knowledge management technology is employed to rapidly capture, organize and deliver large amounts of corporate knowledge [11]. The processes of KM involve knowledge acquisition, creation, refinement, storage, transfer, sharing, and utilization. The KM function in the organization operates these processes; develops methodologies and systems to support them, and motivates people to participate in KM activities. The goals of KM are to leveraging and improvement of the organization's knowledge assets to effectuate better knowledge practices, improved organizational behaviors, better decisions and improved organizational performance [9]. Although individuals certainly can personally perform each of the KM processes; KM is largely an organizational activity that focuses on what managers can do to enable KM's goals to be achieved, how they can motivate individuals to participate in achieving them and how they can create social processes that will facilitate KM success.

Knowledge Management Model (Demerest 1997)

The above general KM model as mentioned earlier does not have repository and delivering mechanisms for the knowledge to be accessible by third parties. Henceforth, it much concerns with construction, embodiment and its applications within organizational strategic achievements. With respect to this exhibit, it seems to be that it does not much support to the digitalization of knowledge globally and it is highly localized. As result of its functional limitations would make this model to incorporate within organizational and institutional ecosystem.

3. THE E-LEARNING AND KNOWLEDGE MANAGEMENT VALUE CHAINS

E-learning value chain is a set of elements that when joined them together bring a life and functional E-learning system, which meets organizational requirements. This chain explains explicitly interdependence of its elements to fully perform the required activities. According to H. Wild, et, al. (2002) proposes a comprehensive model for the E-learning value chain with five important components. The first component is the institutional readiness which discusses capacity of the institution obtains E-learning and it ranges from IT infrastructure and other factors including culture as well as attitudes. The value chain of E-learning lacks creation of knowledge or content development. Functionally, this chain focuses on strategic delivery of explicit knowledge which in this case refer as content delivery or content management system. E-learning value chain does not have components or functions for knowledge creation herein referred as content development and rather focus on content delivery [20]. KM value chain unlike E-learning encompasses four sets of interrelated components. As organizations most concern their core strategies, the first component of KM chain determines knowledge needs by the organization. Usually

there is a gap between organizational actual knowledge possession and getting the right knowledge which contributes towards attaining organizational strategic goals. However, determining knowledge gab remains an important element in the KM value chain. According to KM value chain, knowledge gab identification is followed by availing the gab through knowledge capturing mechanism. The final stage of the KM chain is disseminating of the acquired knowledge and its applications. Therefore, this chain mostly concerns about knowledge acquisition and its strategic uses. Finally KM chain lacks an effective delivering mechanism of the knowledge acquired to other knowledge seekers and this makes the chain not to be used in delivering or other pedagogical purpose.

4. COMMON FEATURES OF E-LEARNING AND KNOWLEDGE MODELS

There are many common features shared between KM and E-learning system. The following features explain the commonality of the KM and the E-learning systems as summarized in the following table 1.

Knowledge Management	E-learning System
	• Assessment • Performance support materials • Live events • Self-based learning • Collaboration • Project Development • LO • CMS

Table 1: The Common Features of KM and ELS

These common features presented in Table 1 can be integrated since KM and ELS use the same technological platform. Information technology and the web facilitate KM process as well as social life learning. E-learning system and KM are social knowledge of constructing and disseminating knowledge. Knowledge management concerns organizational learning while E-learning is the best way to help acquire the dynamic, distributed, shared and collaborative knowledge through the technological means to support this construction process [22]. Therefore, E-learning can be enhanced to perform both functions of KM and E-learning systems.

5. THE HYBRID MODEL

KM and E-learning systems are two different models that perform different functions but use the same technology with different customizations which based on organizations' or institutions' requirements [7]. As has been explained earlier KM target knowledge capturing and later its applications in problem solving is paramount for organizations that use it. In the context of E-learning is quite different and its main purpose is to convey knowledge to learners whereby the content is managed and delivered using the appropriate technology. Apart from the commonality of the KM and E-learning system, again they use almost the same technology. Considering their similarities, there is another innovative way that organizations or institutions take the advantage of both systems. This research paper proposes a new model which encompasses
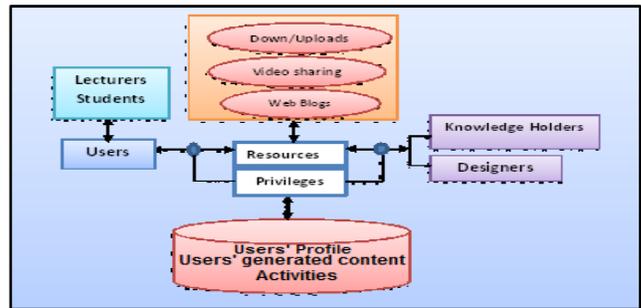
the elements of the KM and E-learning systems and herein referred as the Hybrid Model as shown in figure 4.

Figure 3: Hybrid Model of KM and E-learning

Figure 3 presents a combination of E-learning and KM as a new hybrid model which contains both functional features of the two systems. This proposed model is aimed at accomplishing E-learning and KM activities. As shown in the above figure, it consists of both features of KM mechanisms and E-learning functional features. A knowledge holder here takes the role of providing both tacit and explicit knowledge to the system as the system is designed to capture both. Knowledge holders have privileges to upload content to the database, share videos and their blogs can be sometime unstructured. This model has designers whose role is to structure and set the instructional delivery of the captured knowledge in the form of learning and teaching content for its respective domain. Users are referred in this model both students and teachers who use only the designed or the structured knowledge based on the institution's requirements. This model has central repository which accommodates all content generated and users' profile. Therefore, the proposed hybrid model has both knowledge delivery and knowledge capturing mechanisms. Educational providers let it be academic or consulting firms can both use the hybrid model to train or teach their clients.

6. DISCUSSIONS AND CONCLUSION

KM and E-learning are two different systems with similar functions and technology but used for different purposes. The available models were more specific to either KM or E-learning system and there is no a better model which supposed to cover the functions of the two. The chains for the KM and E-learning share similar design nevertheless each one of them has its own functional components which are different from each other. All most all E-learning systems are designed for either content management or pedagogical purposes and is used by educational providers at all levels. In contrast, KM is used by business organizations and is designed to manage organizational knowledge related to their core services or products and preferably all learning organizations use it as a tool to keep/retain both tacit and explicit knowledge. Structurally, most models of KM have a knowledge disseminating functions nevertheless it does not go beyond the organizational boundaries. Whereas, E-learning is used by a wider audience and it reaches out other institutions and organizations for the purpose of knowledge delivery which literary means teaching and learning. The proposed hybrid model is designed to perform both knowledge management and pedagogical functions. Educational providers can use this

model to capture both tacit and explicit knowledge from knowledge holders, design it or structure it according to its programs and use it as both teaching and learning resources for respective courses or specialties offered. Likewise, other consulting firms can adapt this model to create knowledge they need to use to provide training programs to other organization or business firms. Thus, the proposed hybrid model puts together life components of E-learning and KM. The knowledge holders act as source of knowledge for the E-learning system while the E-learning components act as knowledge capturing, designing and delivering structured knowledge to learners. Since, the two processes of KM and E-learning have commonalities again their combinations can be used by both education providers or large cooperates to effectively manage their knowledge assests. Therefore, the hybrid model can be used to educate firm partners, customers, suppliers and firm's employees. In return, both education providers and firms can generate new knowledge through the use of chat rooms, wikis, blogs and other sources.

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REFERENCE

[1] Bernuy, A. (2011). Knowledge management and e-learning. 1-2.

[2] Thomas H. D. (1997). Ten Principles of Knowledge Management,

[3] Ekaterina Vasilyeva, Mykola Pechenizkiy, Seppo Puuronen. (2005). Knowledge Management Challenges in Web-Based. Vasilyeva E., Pechenizkiy M., Puuronen S.: Knowledge Management ..., 2-6.

[4] Elsa Rhoads. (2010). Knowledge Management and E-Learning. Knowledge Management Architect, 1-12.

[5] Madar & Othman. (2011). E-leaning Towards Student Academic Performance. International Research and Innovation in Information Systems, 3-4 .

[6] G.Murugaboopathi, K.A.Harish,V.Sujathabai. (2012). Knowledge Management through E-Learning. International Journal of Advanced Research in Computer Science and Software Engineering, 3-5.

[7] Hrastinski, S. (2008). Asynchronous and Synchronous E-learning. Education Quaterly, 1,2,4.

[8] Dr. Walid Qasim. (2011). Integrated of Knowledge Management and E-learning System. International Journal of Hybrid Information Technology, volume 4.

[9] Jayanthi Ranjan, G. (2007). Application of Knowledge Management in Management Education (Conceptual Framework). Journal of Theoretical and Applied Information Technology, 1-3.

[10] King, W. R. (2009). Knowledge Management and Organizational Learning. Annals of Information Systems, 4, 1-3.

[11] Maryam Alavi, D. E. (1999). Knowledge Management and Knowledge Management Systems: 1-5.

[12] Maryam Khademi, Hoda Kabir, Maryam Haghshenas. (2011). E-learning as a Powerful Tool for Knowledge Management. International Conference on Distance Learning and Education, 1-5.

[13] Nichols, M., & Anderson, B. (2005). Strategic E-learning Implementation. Educational Technology & Society, 8 (4), 1-8. 1. ISSN 1436-4522 (online).

[14] Qwaider, D. W. (2011). Integrated of Knowledge Management and E- Learning System. International Journal of Hybrid Information Technology, 4 No.4, 8-11.

[15] Rosemary el at. (2012). A Framework for E-learning as a Tool for Knowledge Management. Industrial Management and Data System, 371-380.

[16] Madar, (2014). Strategic Model of Implementing E-learning. International Journal of Scientific & Technology Research, Volume 3, PP (3-4)

[17] Yılmaz, Y. (2012). Knowledge Management in E-Learning PRACTICES. The Turkish Online Journal of Educational Technology, 11, 2-3.

[18] Haline, el at. (2010). Suitability of Collaborative Learning Activities in Web 2.0 Environment. International Research and Innovation in Information.

[19] August Bernuy. (2011). Knowledge Management and E-learning. International Journal of KM and EL.

[20] H. Wild, et, al. (2002). A Framework for E-learning as Tool for Knowledge Management. Industrial Management and Data Systems.

[21] Nada, D. (2005). Pedagogical models for e-learning: a theory-based design framework. International journal of technology in teaching and learning, 6(3), 25-44.

[22] Huang, Kuo Ying. (2009). E-learning 2.0 for Knowledge Management in Enterprises. 19th Annual IBER& TLC Conference.