How Knowledge Management Adds Critical Value to E-learning Media

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ABSTRACT:

Media is the combination of text, images, animations, digital library, which is now a standard part of most computer applications. Education media can be a great tool to improve teaching and learning. A growing number of educational institutions (EIs) are developing a new learning culture. It is not just a question of installing a new learning instruments or knowledge management (KM) technologies, it requires a support tools to overcome the difficulties in the selection and evaluation of e-learning process media. Knowledge management and e-learning have much to offer each other, but are not yet integrated in practice. The model presented in this paper is to shed light on the basic concepts of KM and e-learning and a suggestion on how KM and e-learning can be integrated and leveraged for effective online education and training is presented.

Keywords: *Knowledge management, Media, E-learning systems, Educational multimedia*

Introduction

In recent years e-learning has been identified as strategic resources that can be utilized in an increasing diversity of venues (workplace, cultural and entertainment venues, as well as education). Most EIs have heavily invested to reform the education sector and bring it in line with proposals to modernize information and communication technology within this sector, and with support of some Governments. Moreover, universities will promote open and lifelong learning and on-the-job training by means of Information and Communications Technology transforming, teaching and learning in these institutions through the different available media revealed that nearly most universities now concerned with the Internet and the average number of computers has virtually increased. However the vast majority of these institutions are only beginning to tap into the potential of modernize information and communication technology, and huge savings are still to be made in hardware procurement. For Fuchs, et.al, (2004), libraries and available media collectively are building up new knowledge in the sector of education and learning. Knowledge management KM supports further essential links in the knowledge supply chain and e-learning media and ends at the targeted enhancement other knowledge. Digital libraries, Web-based , decision support system, and e-learning systems are thus important enabling technologies for improving educational multimedia in general and in particular e-learning media.

As an approach to quality assurance of e-learning , universities delivered class materials in an electronic format via the Web and include journal materials, a textbook library, relevant Web links, tutorials, simulations-portfolios, assessments, online writing laboratory, syllabi, notes, and virtual organizations (Fuchs et.al, 2004).

New types of library content web page for example may not only impose additional requirements on content reselections, structuring, enrichment, and access services

supported by other multimedia, but may also profit from integrated support for the other phases of the content life cycle such as KM provision (Hildreth,et.al, 2000).

The idea is that a wide range of evolutionary changes in content structuring, mediation, and system functionality can be supported in the education system itself by empowering the users to participate in system setup, customization, and which is not only limited to the e-learning domain but also applicable to the educational domain in general (Malhotra, 2000).

The aim of this paper is to show how KM has a positive contribution on e-learning media through a model proposed to support this perception. The discussion presented in this paper combines e-learning, media and KM into an adaptable effort framework that provides integrated support for the various institutions involved in e-learning process. The model presented in this paper is to shed light on the basic concepts of KM and e-learning.

The Effect of Knowledge Management On E-learning Media

KM is concerned with the exploitation and development of the knowledge assets of an organization with a view to furthering the organization's objectives. Management entails all the processes associated with the identification, sharing and creation of knowledge. Organizations that succeed in practicing KM are likely to view knowledge as an asset and to develop organizational norms and values, which support the creation, and sharing knowledge. For Rowley (2000), KM is used to describe everything from the application of new technology to the harnessing of the intellectual capital of an organization. Recent research reveals great interest in introducing Knowledge Management (KM) ideas to e-learning systems. It is argued that KM can facilitate an e-learning system (Orlikowski, 2000, Denning, 2000). Many EIs use models of KM that suit the media used in e-learning process or the industrial epoch. Knowledge management becomes important in today's business and academic community. As the importance and effects of KM on the multimedia in e-learning, more universities and EIs are implementing KM activities. KM and e-learning will converge into knowledge collaboration portals that will efficiently transfer knowledge in an interdisciplinary and cross functional environment, (Keulartz, and Schermer, 2004). Information systems will evolve into artificial intelligence systems that use intelligent agents to customize and filter relevant information and new methods as well as tools will be developed for KM driven e-learning and innovation (Malhotra, 2000). Hiltz (1986) argued that most of the EI offering degree courses in new media produce individuals with basic competencies in standard graphic and authoring tools, rather than the specific mixture of learning-related knowledge and skills required to carry out effective e-learning development. Unless education leads the bodies to take some steps to ease this growing skills shortage, the e-learning sector within the EI is likely to fall behind other competitor in other part of the world, as for example the Arab Universities in the Middle East or the other universities, in the UK, U.S.A, or Europe. Until then digital thinking and KM effects on e-learning media will continue to score the world and pay a benefit for the best talent. This is vital; so that e-learning developers (Universities & colleges) can make long-term investment decisions with a degree of confidence that the platform they choose will not disappear or become obsolete.

Kimble et.al, (2002) suggested that within an increasing demand for color printing and teaching illustration in the education sector, those responsible for IT purchasing face a wealth of choice in terms of what products to buy. It is important that EIs are experienced with all the facts and know exactly what they want before they part with significant portion

of its media budget. For example a team constructed from different departments in a university devises what media type and solution will suit their needs.

All the EIs need to take a strategic view of their media needs. With a growing requirement for volume a suitable media and low-cost media may seem an attractive proposition to sit alongside standard media units. However, when looked at in terms of total cost of ownership against entry-level high-volume media, expensive media should be excluded, as many small universities, colleges, and departments are relevant to use an individual expensive medias, (Nottingham, and Park, 1999).

Another consideration is who buy these medias. It is a common situation in the education sector that the buyers of the required media and equipment are part of a team from IT and other related departments is usually responsible for purchasing these medias and other equipments. Those people with IT departments should generally aware of the ongoing costs incurred in the field of the relevant technology. Widding (2007) suggested that there is specific media for defined tasks. For example, many universities labs require high volume mono printing for course work and general student related Material. It is often more prudent to have an extremely suitable media (say printer) with high-volume workload. However cost is not the intent of the paper, it is important to look beyond the initial media cost. (EI) require students to submit high quality work within efficient and effective e-learning environment.

E-Learning Process And Media That Make Sense

KM and e-Learning serve both the same purpose: facilitating learning and competence development in organizations. However, they follow two different perspectives. KM is related to an organizational perspective, opposed to that, e-Learning emphasizes an individual perspective.

With the increasing of computers and IT customization in business in general, organizational routines originally embedded in standard operating procedures and policies often enhance in the firm's programmed logic. Often EIs tend to be flexible in a dynamically changing education environment. The challenge of walking in this direction is in adoption of the least technologies and remaining up to speed with ongoing learning process as far as e-learning development is becoming more acute in e-education (Anantatmula and Stankosky, 2008). Not knowing about the existence of media relevant to education causes defects in the e-learning process and more information needed. As consequences of having merely a fragmentary overview of the available and relevant information and its relationships the decision making process can result in incorrect conclusions being made. Knowledge acquisition is therefore an interactive process (Barker, 2005).

The constructive view of learning is that it is a process in which learners actively construct knowledge as a result of interacting with the learning environments that we create for them. Therefore a fundamental prerequisite for the development of all e-learning systems is in the design of an appropriate organizational framework for the underlying knowledge corpus that forms the basis for e-learning system. For Barker (2005), one important way of meeting this requirement is through the use of a digital resource management system. This system is an interactive environment that is designed to facilitate the following types of KM operation: the creation of digital resources for a particular application, and the provision of controlled access to these resources when the need arises.

Teaching with interactive electronics media for example can produce learning environments that are unlike any that have been produced in traditional classrooms. The use of high speed networked computation can stimulate both real and imaginary words. The possibilities of world-wide (or local) collaboration with anywhere on many topics raise the issues of how to build positive collective intelligence in an environment that desperately needs it. The use of a massive storage and retrieval facilities allows the growth of adjunct intelligence, and an external repository of knowledge that can improve human capabilities and performance, (Hoodgins, 2003).

The focus of KM is connecting people, processes and technology for the purpose of leveraging KM on e-learning media. Knowledge managers of the future will pay an integral role in making the required media technology to be applicable. What is required is an inclusive KM system to provide coherence and integration of all the essential components of an effective educational experience. That is a system and community where professors and students can manage and share information, knowledge, and media with regard to curriculum, course management (e.g., blackboard) and learning activities. The challenge is that KM systems are inert and the knowledge development process is too complex to be managed in a bureaucratic or technical manner. Knowledge systems need to connect interdisciplinary teams and be customized the media within the available understanding and capabilities. Educational institutions which want to stay ahead of the development curve will start to investigate the adaptability of the new expected technologies in the future, (Thiessen and Looker, 2007).

Methodology And The Research Model

In e-learning systems, the complete cycle of the teaching and learning process should be fulfilled. These aspects are: course creation, course management, course administration, learning, practicing and applying, assessment of student performance, and feedback (Paranjpe, 2003).

An interview-based study demonstrated that perceived connections between KM and e-Learning are not operationalized, i.e., integration ideas are rarely implemented in practice. The interviews (with the Academic staffs, including IT Academics) carried out are focused on how e-learning, KM contribute to the learning processes in a corporate settings. In total 5 (Universities and a University Colleges) participated in the interview at Al-Ain Province in Abu Dhabi Emirates. The participating EIs differed in size (from 70 to 210 employees) in core business (teaching).

Interviews were asked to identify the strategic goals of KM, HRM and (e)-learning. The interviewees had difficulties in distinguishing the goals, and indicated the goals were very much intertwined. Most interviewees stated that all three had to do with ‘people’, ‘knowledge’ and the ‘organization’. Faculty and student feedback, in conjunction with learning outcomes assessments, provide information for continuous curriculum improvements.

On the knowledge management side, portals began to serve as a gateway to e-learning, as well as to resources classified as knowledge management systems. Sometimes the relationship was no deeper than the interface—the knowledge management system content was not related to the e-learning content—but at least e-learning was longer set apart from other enterprise activities. - Interviewees were also asked about the technologies for knowledge management, document management, human resources management, and

learning in their organizations. We mainly found that for the four above-mentioned areas, different systems were used. Only two of these institutions used dedicated technologies (e.g. Lotus Learning Space) the other three companies did not use.

Few organizations have integrated e-learning completely with knowledge management, but significant progress has been made over the past few years. Today's solutions tend to combine e-learning with one aspect of knowledge management—for example, with centralized content management, or one KM-related function such as customer relationship management (CRM) with collaboration. - In another part of the interview the interviewees were asked to identify who is responsible for knowledge management and learning at strategic and operational levels. We found that in most companies HRM seems responsible for formal learning at the strategic level. Nevertheless, all interviewees recognized the importance of informal learning and emphasized that it was facilitated in their organization. When asked about the facilitation, evaluating learning effectiveness and providing motivation benefits were considered important by all, but sufficiently performed by a few. In addition, most of the interviewees considered having some form of overview of the knowledge in the organization as important for facilitating informal learning, but none had good solutions yet. Again most of the times, responsibilities are not clear.

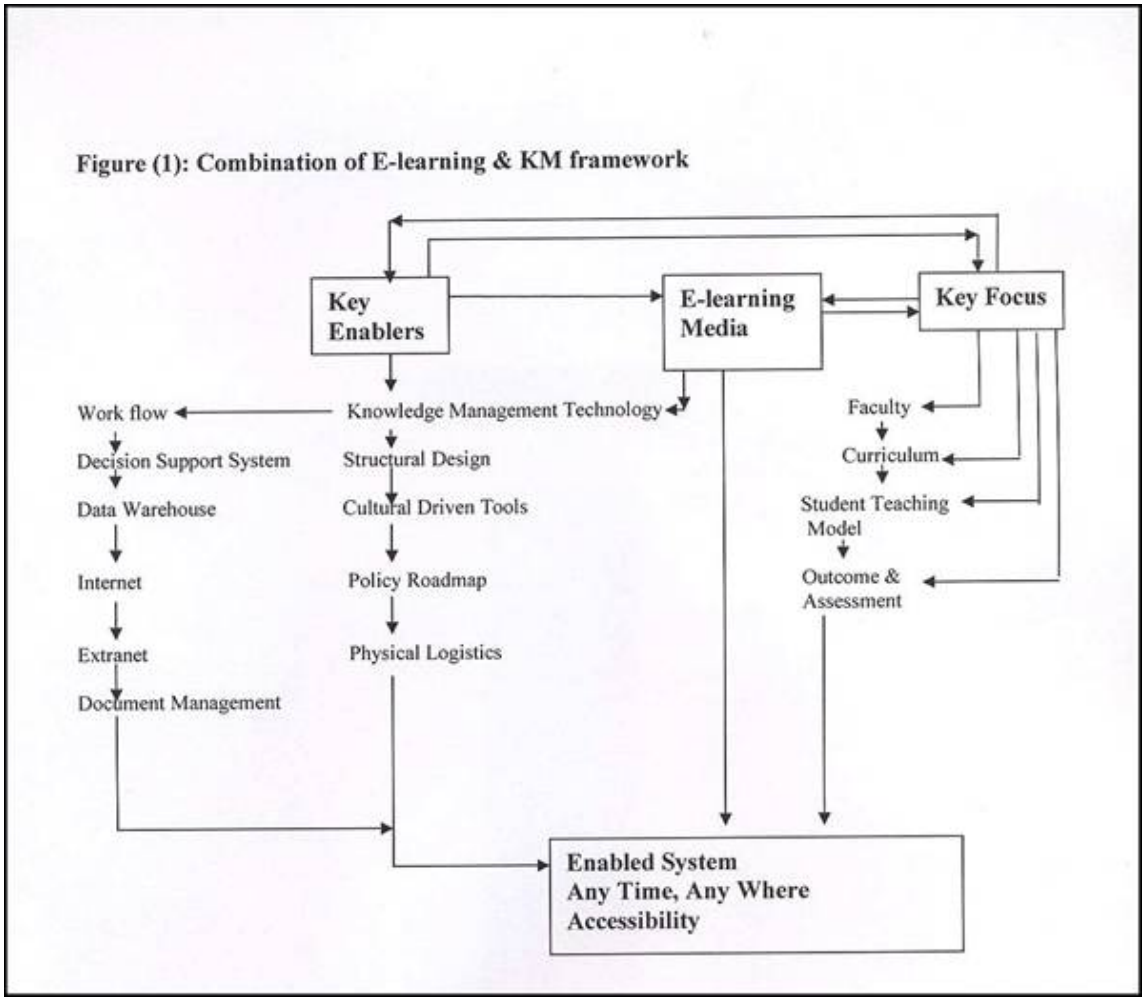
Knowledge transfer opens doors to KM. A philosophy of knowledge transfer provides a natural path for the convergence of knowledge management and training. Moreover, to the extent that an enterprise has automated its knowledge management processes, e-learning can become a fully integrated partner. - Interviews have shown that although conceptually e-learning and KM are perceived to be closely related, the responsibilities for these initiatives still "belong" to different organizational units and supportive technologies are hardly related. Most interviewees admitted relationships between knowledge management and e- learning, but they could not tell how responsibilities, tasks and IT support in their own organization reflected those relationships.

It is interesting to note that most interviewees indicate that the document management systems, web sites, communities are all there to facilitate knowledge management and informal learning. It seems that at this level no distinction is made between KM and informal learning. This is either because they do not believe technology will bring any solutions, but that solutions are mainly at the human level, or because they are disappointed by the usability of technology and expect that integration will only lessen the usability of technology.

The basis for the research model (Figure 1) then is that there is a multidimensional perception to quality assurance of e-learning media. (i.e., Key Focus & Key Enablers). The researchers' believe that these elements are compatible with above discussion. First, key focus elements are well-trained faculty, instructionally sound curriculums, and an interactive teaching-learning model in the educational institution, outcomes assessment and continuous feedback. Academicians on their side should complete a rigorous assessment of qualifications, teaching certification training, a period of mentoring, periodic class monitoring and annual peer reviews.

Second, the other part of perception is the technologies that support KM, i.e., (Key enablers). These technologies roughly correlate to main effects of KM on the e-learning media: 1. Knowledge is acquired or captured using intranets, extranets, and document management systems. 2. An organizational memory is formed by refining, organizing, and

storing knowledge using structured repositories, such as data warehouses. 3. Knowledge is distributed through education, trained programs, automated knowledge based systems, and expert networks. 4. Knowledge is applied or leveraged for further learning and innovation via mining of the organizational memory and the application of expert systems such as, decision support systems. All of these concepts are enhanced by effective workflow. The high potential for synergies between Knowledge Management (KM) and e-Learning seems obvious given the many interrelations and dependencies of these two fields. (Yordanova, 2007).



Reconciling Knowledge Management And E-learning Strategy

According to Woodill (2004), the following steps need to be taken in order for e-learning to succeed: learners and instructors should be prepared to work with e-learning, new instructional activities and strategies that use the unique characteristics of interactive media need to be developed and made easy to use, and new understandings of both learning and the difference in generations of learners need to be articulated and incorporated into instructional design, especially new research on the suitable media. E-learning process is regarded now as an attempt to facilitate or introduce learning using electronic technology or to track the results of learner behaviors and the results of assessments. In fact e-learning is teaching by electronic medias. The e-learning environment is not a classroom. Techniques

effective for group instruction in a closed room do not necessarily work in a networked, computer –based, distance education setting. Once EI recognized that e-learning is not automatic just because one uses electronic media or technologies then it is easy to accept that both students and instructors need to be prepared for and comfortable with this new educational environment (Lamb and Kling, 2003).

The researchers believe that there are two aspects to consider concerning the use of media i.e., the institution and the staff. First, on the institutional side there are some basic requirements needed for a successful media in an e-learning process with present-day technology in the EI: the level of familiarity in media used with other learning software. Educational institutions should pay attention and work with several dimensions of teaching at the same time by academicians, the instructor's abilities to present the suitable materials and enthusiasm easily, effectively and efficiently, and instructional design skills that emphasize the designing creation of interactive teaching activities. Second, from the academician sides, instructors also need to acquire new skills to be successful and familiar with the media used in the e-learning process. These skills include: their abilities to use the media and other illustrations software, being self-directed –the ability to use the media even if the IT staff are not available, the e-learning etiquette, and their willingness to cooperate and collaborate with the students. Technologies such as, intranets, videoconferencing, and collaborative groupware, allow EI in e-learning education to capture and disseminate explicit knowledge. Course Management Systems such as Web CT, can be used to distribute selected learning materials, and facilitate access to various sources of information and data, as well as enable instructor-student and student-student interaction, (Na Ubon, and kimble, 2002).

The above-described processes work in a cyclical manner as depicted in Figure 2, taking into consideration that for the use of media to take place, should be clearly determined in the context of the organizational scope and technology. An inventory of existing knowledge also may exist, which helps in creating and acquiring new

E-learning Media.

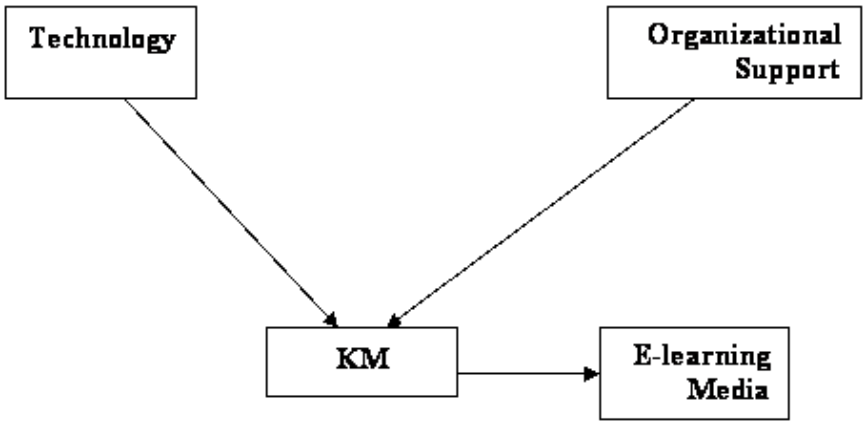


Figure 2: KM & E-learning Media

In this illustration it can be seen that KM is affecting the e-learning media as a result of two potential sources of knowledge that may contributing. First, there is organization's own innate knowledge that is embedded within its cognitive structure (such as rules, plans, scripts, and so on). Second, there is the knowledge that is embedded in the technology facility that the instructor/student is using to help him/her to solve the problem or ease the usage of media. Using KM tools to solve problems in e-learning education for these institutions is just one part of the equation. Technology alone is not enough to create trust and personal context is necessary to achieve a true network. It is therefore, necessary to apply some KM techniques to kelp members in e-learning environment deal with problems more effectively. KM techniques partly indicating the creation of supportive organizational structure and practices (media availability) that would encourage those involved in e-learning to generate, share, and use knowledge easily. Wathen and Burkell (2002), argued that for a comprehensive benefits EI may introduce new standard and practices ensuring equality of opportunity to there users to gain access to the source of knowledge.

The primary mission of educational institutions is the creation, preservation, integration, transmission and application of knowledge and this is not changing in any way. One can immediately see that the mission of educational institutions is synchronized with the functionalities of KM. Thus it is logical that KM tools and technologies can be applied to e-learning in several ways such as e-learning portal, and dynamic delivery and presentation of the content.

Conclusion

This paper has tried to apply the concept of KM in e-learning media in education and how it may add value to learning community. Emphasis was made on the basic characteristics of e-learning and KM. The ongoing e-learning process needs to emphasize on creativity in educational technology environments, because EIs need to explore the narrative possibilities of the new media combined with true interactivity in developing e-learning.

The main task of this research is to find common features of both domains. Based on the literature study the research suggest to consider learning as one of the knowledge processes and to distinguish learning management and knowledge management from those processes.

The high potential for synergies between KM and e-Learning seems obvious given the many interrelations and dependencies of these two fields. Interviews with the academics from (5) EIs have shown that perceived connections between those fields are not reflected at the implementation level: different functions are responsible for supporting formal or informal learning, activities and systems to support learning are hardly related.

KM effect on media became more useful in delivering the right e-learning experiences for the development of the EI, such as universities and colleges.

The research showed that integrating a self-evaluating KM into education process is useful and highly recommended, and unveiling the observed adds of the KM on the media implemented. Efforts related to human factors are required to improve the design, implementation of KM and e-learning media particularly in education in general.

In spite of some obstacles and limitations in the immediate implementation, it is clear that knowledge management and e-learning are the way of the future in the field of distance online education.

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