# The Effects of Integrating Knowledge Management and E-Learning: Productive Work and Learning Coverage

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**Abstract :**
*It is important to formulate suitable learning environments capable to be customized according to value perceptions of the university. In this paper, light is shed on the concepts of integration between knowledge management (KM), and e-learning (EL) in the Higher Education sector of the economy in Abu Dhabi Emirate, United Arab Emirates (UAE).The purpose of this paper is to show light on the KM effort's and practices in the universities concerning the integration with the e- learning process. The results are derived from the literature and interviews with 16 of the academics in Eight Universities in the Emirate. The conclusion is that KM and EL have much to offer each other, but this is not yet reflected at the implementation level, and their boundaries are not always clear. Interviews have shown that both concepts perceived to be closely related and, responsibilities for these initiatives are practiced by different departments or units.*
*Key Words: Knowledge Management, E-learning, Learning Integration, Universities, UAE.*

## 1. INTRODUCTION

Knowledge management is concerned with the exploitation and development of the knowledge assets of an organization with a view to furthering the organization's objectives. It is the process through which organizations generate value from their knowledge-based assets (Anantatmula and Stankosky,2008). In fact the KM is the collection and distribution of the available information to support learning.

On the other hand, sharing knowledge between employees is fundamentally important to perform a specific task as learning is considered part of KM because employees must internalize, or learn, shared knowledge before they can use it to perform specific tasks. Integrating KM and EL in an organization means to use the available knowledge resources such as documents, human skills, and experiences, etc., as learning materials.

The vast majority of the learning institutions are only beginning to tap into the potential of modernized information and communication technology, and huge savings are still to be achieved in buying hardware. For, libraries and available media collectively are building up new knowledge in the sector of education and learning (Fuchs, Muscogiuri & Hemmje, 2004). The rapidly growth of technology in education particularly in higher education, has placed pressure on universities and other learning institutions to be more result- oriented, moving from just-in-case to just-in-time, and pushing the institutions' programs

closer to the workplace. Learning is happening just-in-time and in context.

Within the learning and educational sector the media which is available with the existing libraries are building collectively a new knowledge.

Thus KM technologies which focus on supporting of technical and organizational components enhancing the learning process and may play vital role in developing EL systems.

Moreover, some EL companies developed software products to provide sources for EL and KM. These new software tools allow knowledge located throughout the organization to be more easily captured and distribute as EL modules. Such knowledge then is produced, stored and distributed. which focus on support On the other hand, learning might also benefit from KM technologies. Especially those technologies that focus on the support of technical and organizational components can play an important role in relation to the development of professional EL systems (Ras, Memmel &Weibelzahl, 2005). Thus a knowledge society strategy will ensure that all business operators have the skills needed in a rapidly developing of some governments information society. The majority of some governmental investing heavily to develop their educational process in line with information and communication technology in the educational sector. Investment to create innovative environment in the educational sector is an attempt to anticipate the availability of a trained staff and maintaining high quality of education. Most the educational

institutions have invested heavily 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. Firms will invest heavily in the innovation environment and development, anticipate and safeguard the supply of a trained workplace and ensure high quality education. Using EL, an organization can automate training delivery and offer customized training (Alrawi, Hamdan, Al-Taie & Ibrahim,2011).

Within the academician community and business environmemt KM becomes important and crucial coupled with organizational learning based on similarities between their goals and methods used which recognized the staff collective intelligence.

KM becomes important in today's business and academic community. At the strategic level KM is often coupled with organizational learning based on the similarities between their goals, methods used or organizational conditions that recognize, support, and value employees' collective intelligence. (Azudin, Ismail & Taherali,2009). KM and EL will converge into knowledge collaboration portals that will efficiently transfer knowledge in an interdisciplinary and cross functional environment (Keulartz & Schermer, 2004). The value of EL lies in its ability to integrate into enterprise business processes and to better leverage intellectual capital. Knowledge management and EL have much to offer each another, but are not yet integrated in practice (Alireza, Rosnah, Norzima, Mohammad &Yusof,2010).

Light is shed, in this paper, on the basic concepts of KM and EL. A discussion on and how KM and EL can be integrated and leveraged for effective education is presented. This paper is concerned with the effects of KM on EL sources development. The purpose of this paper is to take a closer look on the integration between EL and KM initiatives in the learning institutions in Abu Dhabi Emirate, UAE, and providing some insights and perceptions in order to successfully integrate the two fields that may be addressed in the future.

## 2. DYNAMIC E-LEARNING AND CONCEPTS

Knowledge intensive environment may achieved within the educational institution as EL systems and KM are used. In such environment many employees working on different tasks and at different locations.

In organizations where KM and EL systems are used, most working processes are very knowledge intensive and involve many people working at different locations and on different tasks. The philosophy of KM transfer provides a path for the convergence of KM and training. To the extent that an organization has automated its KM processes, EL may become fully integrated partner.

Recent research reveals great interest in introducing KM ideas into EL systems, and argued that KM can facilitate an EL system (Alrawi, 2010). Some organizations that offer KM products are adding EL components. Hyper wave for example, sells a knowledge management system that originated in a university setting. Moreover, organizations will promote open and lifelong learning and, on-the-job training by means of information and communication technologies (Sammour, Schreurs, Al-Zoubi & Vanho of, 2008).

Universities nowadays are trying to combine KM components and reinforced them specifically in classroom or on-the- job-training. These signs of convergence between the two fields are promising, but these institutions should know how to implement these relations between KM and EL in practice (Ayiro and Sang,2010). All educational institutions need to take a strategic view of their media needs. The proliferation of EL at the present level of technologies enables and support knowledge sharing. Within the training field delivered via a set of courses, EL moves to more flexible approach, bringing learning closer to the work, although, organizational and cultural gaps remain (Lytras & Sicilia, 2005). On the other hand, academics should be able to recognize trends and to identify correlations within their daily work or the subjects they are working on. The effectiveness of instructors does not stem from an overabundance of training and preparation but from the instructor's ability to work one-to-one with a student and to provide feedback that enables efficient learning (Sun and J. Scott,2006).

The instructors' ability in delivering quality of learning is behind his effectiveness roles and not solely from his training or preparations.

The concepts and methods of KM can be employed in e-learning to improve the benefits of learning platform and EL effectiveness. As EL is a knowledge intensive process, the effectiveness of EL is highly dependent on the quality of its content knowledge, which in turn counts on the success of knowledge capture, storage, sharing and innovation. 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. Learning tasks and activities are an important characteristic of good instructional design (Veloso, Almeida, Meira, Bestavros & Jin,2006). Learning management systems are becoming more popular as a way to track employee competencies and manage career progress. Such systems should handle those functions and, integrates with other applications to incorporate training delivery into enterprise business processes, and this is the real value of such systems. In this respect, learning is considered to be a fundamental part of KM because employees must internalize shared knowledge before they can use it to perform specific tasks. Thus, different and innovative ways of learning are required, and hence a new types of learning systems (Williams, 2003).

KM and EL will converge into knowledge collaboration portals that will efficiently transfer knowledge in an interdisciplinary and cross functional environment (Keulartz & Schermer, 2004). So far research within KM has addressed learning as part of the knowledge sharing processes or on providing access to learning resources or experts. This requires systems for the creation and maintenance of knowledge repositories, and for cultivating and facilitating the sharing of knowledge and organizational learning. Therefore, KM is the management of processes that govern the creation, dissemination, and utilization of knowledge by merging technologies, organizational structures, and people to create the most effective learning, problem solving and decision making in the organization (Sammour, et al.,2008).

## 3. THE INTEGRATION OF E-LEARNING AND KM IN PRACTICE

Most often, organizations generate value from their intellectual assets, including knowledge assets, which involves codifying what partners, customers and employees know, and sharing that valuable information among employees in an attempt to accomplish best practices. Therefore, it is up to individual organizations to determine what information qualifies as intellectual and knowledge-based assets (Ojedo & Owolabi,2003). The primary objectives of the universities or other educational institutions then is the integration, creation and application of knowledge, and therefore it is accepted to say that KM

tools and technologies may be applied to EL in different ways. For example students working together to aid their learning through accessing a set of learning materials, or posting their questions or comments on the site. Then customized information can be integrated within a particular environment as the EL courses will be delivered through a portal (Widding, 2007).

Teaching with interactive electronic 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 worlds. Modern classes providing high quality of teaching may be achieved when the convenient electronic media is used which differentiate it from the traditional classes processes. The controversy over whether EL is more effective than classrooms training has subsided with most experts supporting a mix of technologies. The best mix depends on the skills being taught. Team building and role playing are best accomplished in the classroom. For example - downtime training - in a teaching institution when the teaching process is stopped during vacations, is one good opportunity for delivery of short modules (Khan, 2003). Moreover, to the extent that an organization has automated its KM processes, EL can become a fully integrated partner, and allows delivery of individualized training geared toward filling competency gaps. In other words organizations seeking to leverage their existing information and its knowledge resources allow them to package the available information into a learning model (Nichols, 2003). Adaptive systems strive to monitor learners and select next learning step (Hodgins, 2014).

A learning environment has to support learning interactions, such as lesson-learned meeting at the end of a project, or asking supervisors and experts for advice. Learning materials in any format can be integrated in the system used in the organization. For example 'Telecom Austria' plans to implement the EL suite as a corporate wide online learning platform for a large number of its employees. The company provides telecommunications services for the telephone networks in Austria. The system used to train employees in the marketing fields such as sales, customer services and support (Bratianu & Orzea, 2010).

Each country project employs a different approach to support the work of teachers and students, and cumulatively these projects are expanding the knowledge-base of how

mobile technology can expand access to education and improve its quality.

So far, most EL systems do not support recognizing trends or correlations between subjects. The need for careful analysis prior to a system implementation is appropriate. The value of a system's solution is integrating knowledge across the organization that can integrate with a wide variety of organizational software to monitor processes and deliver better quality of EL.With the increasing availability of Information and Communication Technology (ICT), the breadth and scope of distance teaching and learning process has changed dramatically. When the organization has automated its processes, EL can be integrated in ways that support business objectives, greater flexibility in delivery and interoperability (Wang, 2007). EL could be much more successful by making it more cognitively adequate, entertaining, and illustrating for the learner. Codified knowledge in systems could be processed and stored to provide easier access and retrieval (Figure 1).

**Appendix 1: Strategic Goals for KM and E-learning**

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**Knowledge Management Examples:**

-Enhance employee retention rates by recognizing the value

of employees' knowledge and rewarding them for it.

-Creating environments to support knowledge sharing with reusers.

- Using knowledge in an attempt to achieve the

organizational goals.

- Development of knowledge –sharing attitude and employees' skills.

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**E-learning Examples:**

- To allows the communication with the instructors and peers.

- To provide courses for learners and improving their skills.

- To provide collaboration tools that engage student in a

range of tasks and learning environment.

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- To develop the instructors' perceptions and initiatives.

- To facilitate the usability of the learning objects and contents.

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Learning can be seen as integrated in knowledge acquisition as part of the job of the employees. Education has to be a process of sharing and acquirement of knowledge, skills and competencies. Advantages of KM are very useful for that process. KM is a core part of the employees so capturing of knowledge process is very similar to the processes related to selection of most appropriate learning content in EL.

From the above discussion, there is no doubt that learning and KM are converging. KM systems in the organization have been oriented toward integrating KM and EL.

## 4. INSIGHTS FROM PRACTICE

The relationship between KM and EL has not been fully understood, and the high potential for benefits between the two fields seems obvious given the interrelations and dependencies between them. Knowledge management is not a technology-based concept. It is a wasting if organizationsImplement a database system or any other collaborative tools in the hope that they have established a KM program (Yordanova, 2007). In fact KM is a business practice, and to find how knowledge flows through the organization to add value to business, the fact that organizations need to support individual, work task related learning paths.

Knowledge managers of the future will pay an integral role in making the required technology to be applicable. Knowledge management focuses on creating and optimizing knowledge flows in the organization to add value to a business, therefore, learning management or recently known as 'human resource development' is not part of KM, their responsibilities remain those of the different departments and focuses on supporting learning to improve performance (Nyamboya, Ongonda, & Raymond, 2004). Therefore, KM addresses learning as part of knowledge sharing process, and at this end there is a thin line between learning and development (Efimova & Swaak, 2004).

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. Based on

the above discussion, EL and KM are overlapping. At the process level, learning may be considered as part of knowledge processes, whereas at management level, learning management and KM are overlapping and both of them support learning in one form or another (Jones & Johnson, 2014). In practice such interloping relationship may be clarified through what activities are carried to support learning, by looking on implementation of this function in the organization, and what technologies are used.

In total 16 participants were interviewed from 8 universities that participated. The participating universities are the largest learning institutions in the Emirate in core business (MIS and IT Departments), and the interviewees are Heads of Departments. The researcher focuses on the operational responsibilities for the underlying activities. The questionnaire content is

Concerned with the facilities, planning, providing motivation for employees, evaluating learning effectiveness, and level of supportive technologies infrastructures. The interviews are focused on how KM and EL contribute together for improving the learning processes in organizational settings, with the assumption that there is a difference between the two fields, Table (1) show the integration culture in the sample.

**Table (1) the integration culture in the sample.**

| | Variable of the Integration | Clear | | Not Clear | |
|---|---|---|---|---|---|
| | | NO | % | NO | % |
| 1. | Responsibility of EL and KM operation | | | 16 | 100 |
| 2. | Motivations from leader | | | 16 | 100 |
| 3. | Knowledge Sharing | 2 | 13 | 14 | 87 |
| 4. | Technology used in E learning. | 5 | 31 | 11 | 69 |
| 5. | Believe integration process | 9 | 56 | 7 | 44 |

From the literature, KM is a means to have employees gain knowledge to help change towards a more learning-oriented organization (i.e. the university) including organizing courses and making learning materials available. The interviewees were asked to identify who is responsible for EL and KM at operational levels. The researchers found that the human resource department seems responsible for learning at operational level, and setting strategies for some universities in the future. For other universities such responsibilities are not clear, referring to the 'Deanship Council' and/or the 'College Council'. Some academics suggest that the academic staff should take the responsibility. Others suggested that top management of the university should take the initiative and the responsibility. Nevertheless, all these academics interviewed admitted the importance of learning, again responsibility is not clear. The researchers' beliefs that although the responsibility of human resource management is to address business needs with the right knowledge, technical department in the university is more interested in providing courses and training requirements to achieve staff skills improvement.

Learning may be motivated and achieving learning gains is through engaging them in such active environment.

Engaging learners and actively involving them in the learning process often increases motivation and learning gain. Those academics in the survey admitted that evaluating learning effectiveness and motivation were considered crucial, but this aspect is performed by some universities/departments only. The researchers concluded through their discussions, that these learning institutions didn't have document repositories/database systems efficient for facilitating the learning process, and on the other hand – in the case of existence-responsibilities for managing such systems varied across other departments. Therefore, line of responsibility is not clear and none of these institutions have proper solutions yet.

The concept of competencies on an individual level, as well as on a corporate level, and their connection to learning resources provides the integration process with the strategic focus so often demanded. It should be clear, however, that the competencies itself is not the only critical component in achieving true integration. Just as much, success is dependent on the readiness of the organization, and a change in the organizational culture that has not been addressed with this paper.

It is accepted that it is up to the professionals to share knowledge and to learn. In other parts of the interview, interviewees were asked to clarify the strategic goals of e-

learning and KM. One may expect different views and perceptions. The interviewees had difficulties in defining the strategic goals, and indicated that goals were much intertwined. Only two participants expressed that both fields (EL and KM) are concerned with individuals (see Appendix 1). The basis for such expression is that KM organizes all types of knowledge exchange activities, such as organizing the database, and making courses materials available.

Standards play an important role both in EL systems as well as in KM systems, and KM technologies can support the learners' needs and individual learning processes. Participants asked about the technology used in EL and KM. Five universities used different systems to facilitate the learning process such as- Lotus learning spaces, and in-house systems, also these departments have document management systems with information about individuals and job specifications.

During the discussions the researchers concluded that the majority of these universities are looking for some form of integration, and believes that technical integration will enhance the learning process and KM in general, and that lack of integration is a serious problem. However, seven of the interviewees do not believe that technology will bring solutions. They said that solutions are mainly with human initiatives, and integration is only to reduce the usability of technology.

## 5. CONCLUSION

The conclusion in this paper is that KM and EL have much to offer each other, but are not yet reflected at the implementation level, and their boundaries are not always clear. Interviews have shown that both concepts perceived to be closely related and, responsibilities for these initiatives are practiced by different departments or units.

The interview-based study demonstrated that perceived connections between KM and EL are not operationalized. The reasons for the so far weak integration of KM and EL on a conceptual and technical level are related to several barriers that are elaborated next. They are mainly based on the discussions done with the academics.

Results of this study suggest that the employees and their firms have been acting rather poorly in the exchange of knowledge; participants showed a rather low knowledge of their firms' strategic vision and management roles may be

more efficient as a way of communication, responsibility and, trust within the organization, also respondents believe that both management and the academic staff in these institutions are not judged enough, by what they do and the knowledge of departing employees(academic and not academic staff) is not passed pervasive on to successors. Respondents expressed that the knowledge gained was mostly theoretical. There is need for strengthening of a two-way flow of information within these firms between departments and the organizational hierarchy. Feasibility of integration between KM and EL in these universities is not clear, and practitioners need some motivation and time to bridge the organizational barriers gap and to link technological support and interventions to enhance the learning process. Management must provide content for learning purposes and support learners in finding appropriate content.

## LIMITATION AND FUTURE RESEARCH

The author left space for another research to see if such integration is regarded as a culture within the universities in the UAE. And within the community of the academic staff.

## REFERENCES

Anantatmula,S. Stankosky,M. 2008. Knowledge Management Criteria For Different Type of Organizations.Int. J. Knowledge and Learning, 4:1, 18-35.

Azudin, N. Ismail,N. & Taherali,Z.2009. Knowledge sharing among workers: a study on their contribution through informal communication in Cyberjaya, Malaysia, Knowledge Management & E-Learning: **An International Journal (KM&EL),** 1: 2, 139-162.

Alrawi,K. Hamdan,Y. Al-Taie,W, and Ibrahim,M. 2011. Organizational culture and the creation of a dynamic environment for knowledge sharing. **American Journal of Social and Management Sciences.** 2: 3, 258-264.

Alrawi,K. 2011. How Knowledge Management Adds Critical Value to E-learning Media. Journal of Knowledge Management Practice. 11: 3.

Alireza,A. Rosnah,Y. Norzima,Z. Mohammad, H. and Yusof, I. 2010. Evaluating Knowledge-Oriented Management: An Iranian University Case Study. **Journal of Knowledge Management Practice.** 11: 2.

Ayiro,P. and Sang,A.2010. Education leadership in a globalized economy: A Kenyan perspective. **Journal of Science and Technology Education Research**. 1, 4. 62 - 72.

Bratianu,C. and Orzea,I. 2007. Tacit knowledge sharing in organizational knowledge dynamics. **Journal of Knowledge Management Practice**. 11: 2, 107-114.

Efimova,L. and Swaak,J. 2002 KM and (e)-learning: towards an integral approach. **proceeding of the 2nd EKMF Knowledge Management Summer School,** Sophia Antipolis, France. 63-69.

Fuchs,M. Muscogiuri,C. and Hemmje,M. 2004. Digital Libraries, in Knowledge Management: an e-learning case study. **International Journal of Digital Library**. 4: 1, 31-35.

Hodgins,W.2014. Information about All the Learning Students Being Developed. Available at: www.Learnativity.com/standards.html.

Jones,S. and Johnson,C. 2014. Professors Online: The Internets' Impact on

College Faculty, Available at:http://firstmonday.org/issues10_9/jones/index. html .

Keulartz,J. and Schermer,M. 2004. Ethics in Technological Culture: A Programmatic Proposal for a Pragmatist Approach. **Journal of Science Technology Human Value.** 29: 1, 3-29.

Khan,B.2003. Building Effective Blending Learning Programs. **Journal of Educational Technology,** 43: 6, 51-54.

Lytras,M. and Sicilia, M.2005. Knowledge Society: A Manifesto for Knowledge and Learning. **International Journal of Knowledge and Learning**. 1: 1, pages 1-11, 2005.

Nyamboya,C Ongonda,M. and Raymond,W.2004. Experiences in The Use of the Internet at Egerton University Library. **Njoro-Keyna, DESIDOC Bulletin on Information Technology**. 24; 5, 11-24.

Nichols,M.(2003). A Theory for learning. **Journal of Educational Technology.** 6: 2, 1-10.

Ojedo,A. and Owolabi,E. 2003. Internet Access Competences and the Use of the Internet for Teaching and

Research Activities of Botswana Academic Staff.**African Journal of Library Archives and Information Science**, 13: 1, 43-53.

Sammour,G. Schreurs,J. Al-Zoubi.A and Vanhoof,K. 2008. The Role of Knowledge Management and E-learning in Professional Development. **International Journal of Knowledge and Learning.** 4: 5, 465-477.

Sun.P and Scott,J. 2006. Process level integration of organisational learning, learning organisation and knowledge management. 2: 3, 308-319.

Ras.E Memmel.M and Weibelzahl.S.2005 Professional Knowledge Management-Experiences and Visions, **3rd Conference, Springer Verlag, Berlin**.

Veloso,E. Almeida,V. Meira.W , Bestavros,A. and Jin,S.2006. A hierarchical characterization of a live streaming media workload. **Networking, IEEE/ACM Transactions.** 14: 1, 133-146.

Williams,R.2008. Integrated Distributed Learning With Just-in-context Knowledge Management. **Electronic Journal of E-learning.** 1: 1, 45-50.

Widding.L2008. Entrepreneurial Knowledge Management and Sustainable Opportunity Creations: A Conceptual Framework. **International Journal of Learning and Intellectual Capital**. 4: 1, 187-202.

Wang,Y.2007. Internet Uses in University Courses**. International Journal of E-learning**. 6: 2, 279-292.

Yordanova,K.2007. Integration of Knowledge Management and E-learning, Common Features. **International Conference on Computer Systems and Technologies**, Sofia, Bulgaria, 14-15.