Knowledge Building In Organization From The Perspectives Of Different Learning Styles

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ABSTRACT
Knowledge management and e-learning evolution are very much connected. Knowledge management in organization looks at overcoming the limitations on knowledge sharing among the employees. However, there have been some misconceptions that have taken organizations away from realizing that employee learning is a highly individual task of construction. Understanding how learning takes place is an extremely important consideration during the development of the learning platform in organizations.

This paper looks at how different learning styles have been observed in the development of a learning platform. The research uses the Cisco Networking Academy e-learning as the case study. The study was chosen based on the fact that the involvement of the Academy with many organizations and academic institutions in producing individuals with technical skills required in the industry.

Keywords: knowledge management, e-learning, e-learning design, learning styles.

I INTRODUCTION
During the last decade, the world has witnessed a rapid evolution of the electronic sharing of knowledge in organization. Essentially the network-enabled transfer of information has become a must in many knowledge imparting processes, be it in educational sector or businesses (Anon, 2006). As the Internet steadily made its way into colleges, universities, organization and private companies, more possibilities are opened for knowledge sharing and information management through computer network.

Knowledge management allows “finding, selecting, organizing, distilling, and presenting information in a way that improves an employee’s comprehension in a specific area of interest” (Mertins, K., Heisig, P., Vorbeke, J, 2003). Experiencing many benefits from knowledge management, many organizations have realized that employee development exercises such as training can also be done online, saving the hassle of costs, logistic arrangements and time. The concept of e-learning has become very appealing where staff development and training are concerned (Al-Khanjari, Kutti, and Dorvlo2011).

It has been observed that knowledge management and e-learning evolution are very much connected. Organizations’ ongoing needs for new techniques of knowledge exchange have been the driving force to the progressive studies and developments of knowledge management and e-learning (Yordanova, K, 2007). The focus of these needs includes addressing differences in learning pace among employees. In order to achieve effective knowledge building, organizations must take into consideration learning abilities among their people. Kolb’s learning styles have described clearly the four types of learning styles in individuals which confirm their importance in the development of a learning platform in any organization (Kolb, D. A., Rubin, I. M. and McIntyre, J. M., 1974).

This paper looks at Kolb’s learning styles and how they have been relevant in the e-learning design for Cisco Academy. It is also hoped that this paper will give a preliminary views on the fact that e-learning qualifies as one of the components in an organization’s knowledge management system.

II KNOWLEDGE MANAGEMENT AND E-LEARNING
Knowledge management looks at the perspectives of organization on learning; it is working to overcome the limitations in knowledge sharing among the employees in an organization. This is done by providing the means to enable the creation of knowledge assets through activities such as discussion forums and online process documentation (Schmidt, A., 2005).

The author has also asserted that there has been a great misconception of knowledge being a tangible good that be “produced”, “captured” or “transferred” and that later be summed up to a corporate memory. This has been observed to take the organizations away from realizing that employee learning is a highly individual task of construction. Understanding how learning takes place is extremely important to consider.

E-learning refers to the use of electronic applications and processes to learn. E-learning applications and
processes include web-based learning, computer-based learning, virtual classrooms and digital collaboration. Content is delivered via the internet, intranet, and CD-ROM with multimedia capabilities (Al-Khanjari, Kutti, and Dorvlo 2011).

It is very easy to see e-learning as a subset of knowledge management, according to (Wild, R.H., Griggs, K.A. and Downing, T., 2000) organizations have acknowledged the fact that e-learning shares similar attributes to the basic knowledge management processes, they both address the same fundamental problem: facilitating learning in organizations, hence qualifies as a tool for knowledge management (Schmidt, A., 2005).

Unlike the traditional chalk and talk teaching and learning method, e-learning promises to provide a single experience that accommodates the three distinct learning styles of auditory learners, visual learners, and kinesthetic learners. In addition to that, e-learning promotes a more efficient training of a globally dispersed audience; and help reduce the publication and distribution costs as Web-based training becomes a standard (Al-Khanjari, Kutti, and Dorvlo 2011).

E-learning also offers individualized instruction, which print media may not be able to offer. In conjunction with the assessment needs e-learning targets the needs through establishing time spent, fast and accurate online test management, and some customization ability to ‘warn’ potential issues in learner’s performance.

Using learning style tests, e-learning can also identifies and targets individual learning preferences and allows for differences in learning ability among employees. Advanced learners are allowed to speed through or bypass instructions that are redundant while novices are spared from the pressure to speed up for fearing of holding up their fellow learners (Al-Khanjari, Kutti, and Dorvlo 2011).

In order to meet the needs of different learners, the design of e-learning applications in supporting knowledge sharing and development in organizations calls for serious consideration on the range of learning styles, preferences, and needs of the potential users. The real challenge in e-learning is keeping the people it is designed for in mind (Canavan, J., 2004).

III LEARNING STYLE
Learning style is defined as an individual’s inherited foundation, particular past life experience and the demands of the present environment that emphasize some learning abilities over others (Kolb, D. A., Rubin, I. M. and McIntyre, J. M., 1974). There has been indication that a primary goal in studying a new medium of communication for educational delivery must be the identification of its impact on learning (Hiltz, S. R. Norwood, N J: Ablex, 2004).

Instructors cannot always accommodate each student’s need, it is important that several learning opportunities are provided (Tu, C. H. and McIsaac, M. S, 2002). It is expected that when the learning experience is more effective for the learner, an increased level of user acceptance of information systems will result, which in return will strengthen the performance of an organization. A research report from the Learning and Skills Research Centre studied many influential learning style models and did a critique on all experimental learning style theories (Coffield, F., Moseley, D., Hall, E. and Ecclestone, K., 2004). This research questions the reliability, validity and implication of learning styles in general.

E-learning promises to provide a single experience that accommodates the three distinct learning styles of auditory learners, visual learners, and kinaesthetic learners. In this paper, the Kolb Learning Style Instrumentation (LSI) as in Table I is used to observe the learning styles of learners. Kolb’s learning styles are defined by four levels: Diverger, Assimilator, Accommodator and Converger.

Kolb describes assimilator learning style is the condition under which learners learn best when presented with sound logical theories to be considered. Meanwhile accommodators learning style is ‘hands-on’, and relies on intuition rather than logic. The learners who were identified as assimilators required the most support in e-learning. Diverges and accommodators required less, while converges were the most active in the e-learning environment.

In a quest to pick up new skills on network administration, an IT executive who is a ‘converge’ will need a combination of good theory presentation and a platform for hands on activities to suit his/her learning style. Another colleague who is an assimilator will be equally happy with only theoretical learning. Big differences in learning style have demanded organizations to consider some works on instructional design.

IV ROLE OF INSTRUCTIONAL DESIGN
Changes continue in the field of education as a result of the influence of technology and the realization about human learning experience, as a result, models of instructional design are not exempted from this influence (Hakkinen, P., 2002). This influence has been observed by (Gustafson, K. & Branch, R., 1997) who have stated that “practically all ... early [instructional design] models were based in behaviorism”. Today with the technological influence in education witness a shift in thinking which requires a re-visioning of the classroom. This
includes a re-examination of the role that instructional designers and instructional design models play in this process.

All collaborative learning theories contend that human interaction is a vital ingredient to learning. Consideration of this is crucial when designing e-learning, realizing the potential for the medium to isolate learners.

With well-delivered synchronous distance education, and technology like message boards, chats, e-mail, and tele-conferencing, this potential drawback is reduced. However, e-learning detractors still argue that the magical classroom bond between teacher and student, and among the students themselves, cannot be replicated through communications technology.

V INSTRUMENTATION AND METHOD
Cisco Academy has successfully managed the framework design so that its content structures will provide the students with adequate learning environments which include all level of learning styles of Kolb matrix. With a good knowledge management in their e-learning system, learners who undergo this syllabus will have a fair acceptance to its contents.

Kolb Learning Style Instrumentation (LSI) is designed to measure the degree to which individuals display the learning styles derived from experiential learning theory. In order to support the design process instructional designers may wish to consider the eight questions posed by (Backer, P., 2004) when designing specifically for a web-based setting. They are:

1. Who are the learners?
2. What will be the learning outcomes of course?
3. What will be the content of the course?
4. How will the content be ordered?
5. What teaching methods/learner activities will be used?
6. What media will be used?
7. How will the learning be assessed?
8. How will the subject/course be evaluated for improvement?

These questions have been well handled in Cisco Academy which proves that it is able to guide the students within Kolb LSI measurement. This is due to the fact that the students in various study level have different level of intelligence as stated by (Ally, M. &Fahy, P., 2002). The present Cisco Academy system has opened the doors for a greater number of students from various levels.

VI MANAGING E-LEARNING DESIGN BY CISCO ACADEMY
The eight questions posted by (Backer, P., 2004) will be used as the guideline to determine the impact of the e-learning design to the students. Question 1 inquire who are the learners where in Cisco Networking Academy, the learners are people who belong to the field of networking technology but it does not matter if they have or not any experience in this field before. The learners will be required to register themselves in the system and proceed with the learning.

The focus upon content is often defined as the first step in the process beginning with the learning outcomes. The importance of identifying learning outcomes in the initial stages of design (Grady, H., 2000) because they “they give students a clear understanding of the learning task”, and “they keep the designer/instructor focused upon the learning process” Cisco Networking Academy (et al Cisco Networking Academy Web) is a global education program that teaches students how to design, build, troubleshoot, and secure computer networks. These learning outcomes act as indicator to increase access to career and economic opportunities in communities around the world. These outcomes answered well Question 2 posted by(Backer, P., 2004).

In addition to that, Cisco Networking Academy provides also online courses, interactive tools, and hands-on learning activities to help individuals preparing and strengthening their skills for ICT and networking careers in virtually every type of industry. This addresses the requirements asked in Question 3.

The main idea for developing learning environments delivered via the Internet explicitly focus upon the needs of the learners and their interactions within the knowledge management setting, which is representative of a constructivist approach to learning. (Siragusa, L., 2000) Categorizes the common issues that had been identified from various authors into five categories: Structure, Content, Motivation and Feedback, Interaction (communication) and Involvement (activities).

It is observed that Cisco academy has taken into consideration these five categories in an organized manner in the development of its web design which has fulfilled the need to have an appropriate content order as posted by (Backer, P., 2004) in his Question 4.

Figure 1 shows that the Cisco Academy e-learning design is a well-structured design in term of its contents’ structures and orders. Furthermore, it is also important to ensure that the content is relevant to the learners and can be well delivered based on the
structure and the design of the e-learning system. Learners can select the course on a current study and at the same time is able to go back to the previous course. Besides that, the learners are able to switch to other course that they have previously registered. Cisco Networking Academy also enables the students to rediscover previous knowledge or lessons. All these features and activities in this academy covers well the issues raised in Question 4, 5 and 6 by (Backer, P., 2004) and also covers the elements of structure and content as mentioned by (Siragusa, L., 2000).

Figure 1: Structure And Content Of Cisco Academy

Figure 2 shows that the Cisco Networking Academy design provides the learners with the resources and interactive course guidance. The learners can also be involved in packet tracer activities, communicate thru forum and chatting; and look for career opportunities. According to (Jonassen, D.H, Carr, C, Yueh H., 1998) learners must participate and interact with the surrounding environment in order to create their own view of the subject. These features work well the categories such as communication and involvement raised by(Siragusa, L., 2000).

Motivation to learn is also fostered through prompt and frequent feedback. This may occur through assessment as a mean to draw learners into the learning experience. Example of motivation such as examination is shown in Figure 3 (Drummond, M, 2003).

Figure 2: Structure and content of Cisco academy

Identifies that there is “mounting evidence that instruction and assessment must be integrated, particularly in an online environment, to engage learners and maximize learning”. Designing authentic assessment for the online learning setting is not without its challenges. Simply transferring assessment tools utilized in face-to-face settings to the online setting does not constitute authentic assessment (Drummond, M, 2003). The challenge is to ensure that authentic assessment tools are developed for the online learning setting in order to optimize learning.

Cisco Academy has also considered the motivation in term of learner’s feedback and interaction like communication among the learners. This feedback mainly could be used by the academy for the purpose of system’s improvement while communication tools such as forum, chat and other activities could help the learners exchange their information and share their knowledge. The examples of these motivation and interaction are shown in Figure 4. These aspects considered by Cisco Networking Academy fulfilled Question 7 and 8 posted by(Backer, P., 2004) as well as the questions of motivation and feedback mentioned by (Siragusa, L., 2000).
VI CONCLUSION

The management of the knowledge, that are learning outcomes, curriculum content, and order in which it is delivered is important to take organization to the next level of performance. In the knowledge rich economy, there is a strong need for a progressive knowledge and skill development among employees. Knowledge management and e-learning work hand in hand in providing the platform towards organizational learning and the fact that different people learn different ways, the platform development must promote a learning environment that includes of a maximum number of participants with a maximum range of learning styles, preferences, and needs.

In this paper, Cisco Networking Academy is used as an example to demonstrate a learning platform that meets the mentioned requirements and provide adequate features and necessary tools for e-learning community. The elements of e-learning, learning styles, instrumentation, features, tools and methods have been well taken into consideration in this e-learning academy. The academy is found to be suitable for all level of learners’ competencies students whether they are novices or experts.

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