A METHODOLOGICAL MODEL FOR E-LEARNING: A STEP TOWARDS QUALITY ASSURANCE & ENHANCEMENT

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Abstract- E-learning is an integration of the content, space and tools necessary to carry out the process of electronically supported learning. It is a high end effective technology to impart education and deliver information to various end users, nodes, or networks via electronic media. E-learning applications and processes include web-based learning, computer-based learning, virtual education opportunities and digital collaboration.
E–learning and knowledge management are closely coupled domains, as E-learning depends on knowledge management for data dissemination. It has brought a qualitative change in the way the information is collected, processed, transformed and delivered.
Quality assurance of these activities involved in E-learning is an issue of major concern. Keeping the significance of Quality Assurance for E-learning, it is of the great essence to develop a model or a framework or a technique to support the process.
This paper focuses towards an approach- a methodological model that can enhance and assure quality in an E-learning environment. It also introduced the recognition of various quality metrics for E-learning environment in association with knowledge management
Keywords- E-learning, Virtual learning, Web based learning, Digital collaboration, Knowledge management, Quality matrices

Citation: Priya Matta and Neelam Singh (2012) A Methodological Model For E-Learning: A Step Towards Quality Assurance & Enhancement. Journal of Information and Operations Management ISSN: 0976–7754 & E-ISSN: 0976–7762, Volume 3, Issue 1,pp-34-37.

Introduction

The drive to integrate online learning into educational courses continues as the constraint of time and distance has been minimized significantly by the use of Internet.
Internet provides significantly different and interesting possibilities for computer-meditated communication and learning from other forms of educational technologies (McCormack & Jones, 1998, p. 1; Weller, 2002, p. 34). Since there are numerous ways in which online learning environments may be utilized based upon the instructional and pedagogical needs. The development of instructionally effective online learning environments that meet these pedagogical needs requires constant quality evaluation and enhancement and it should be futuristic enough to meet the fast changing requirements of both the developer (engineer) as well as the end user.
E-learning comprises all forms of electronically supported learning and teaching. The information and communication systems, whether networked learning or not, serve as specific media to implement the learning process. [3] . Both providers and consumers of E-learning want education and training products and services that are effective and efficient (Barker, 1999). The term quality is used to encompass these concepts .To implement a quality system in an educational organization, four main steps are necessary: context setting, model adaptation, model implementation/adoption, and quality development. Each step should be performed with a broad range of actors to raise awareness and consensus.
As the Internet was increasingly used in distance delivery of education/training, both for information retrieval (distributed learning) and for online delivery of courses and programs (distance learning), there was a need for quality criteria for both Internet sources and use of the Internet.

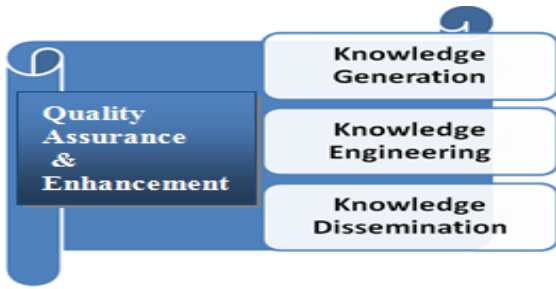**Proposed Methodological Model for E-learning**

Fig. 1- Abstract Model

In this paper, a methodological Model for E-learning in association with Quality assurance and Enhancement is proposed for semi-dynamic and deterministic environment of academia. Quality Assurance and Enhancement is used as an iterative process integrated with each module of the model.

Knowledge Generation

According to Darwin magazine, 2001 Knowledge is the right information put into use in the right way at the right time,

Knowledge Generation comprises a range of strategies and practices used in an organization to identify, create, represent, distribute, and enable adoption of insights and experiences. Such insights and experiences comprise knowledge, either embodied in individuals or embedded in organizations as processes or practices.

To share knowledge and information among different domains it is required that they have a common platform. This model provides a framework, where knowledge is represented as ordered input data (data → information → knowledge) to the meaningful output.

The main question that arises here is that "What are the first steps to be taken on the long path toward the construction of the very bases of knowledge generation"

In our model Knowledge generation is bifurcated into two categories

Static

This approach invests more in collection of data and information from various sources like

    Literature
    Websites

Dynamic

These are the sources that invest more in generation of knowledge and technology from active sources, which in turn transforms into greater capacities for technological progress. These consist of
Scholars
Academicians
Researchers
Research papers
Research projects
Learning Communities
Industry Professionals

Knowledge Engineering

In knowledge engineering module knowledge engineer and experts construct and capture the knowledge (data, facts, information and

rules) they posses, at one end and then integrate the features of E-learning to preserve, transform and deliver this information at the other end. The knowledge engineer builds the knowledge base, using an iterative process that tries to ensure the quality, until the information is accepted as knowledge. Knowledge engineering involves :
Development of-
User Interface
Access Model
Access Priority
Engineered Knowledge
Environment Modeling

Knowledge Dissemination

It can be defined as the transfer of knowledge within and across settings, with the expectation that the knowledge will be "used" conceptually (as learning, enlightenment, or the acquisition of new perspectives or attitudes) or instrumentally, (in the form of modified or new practices.)

There are, however, those who see dissemination as having other legitimate outcomes. Some of these outcomes include: (1) increased awareness; (2) ability to make informed choices among alternatives; and (3) the exchange of information; materials or perspectives[11]

This phenomenon supports information utilization and consumption to ensure that knowledge generated from the Engineering phase is readily available and can be fully utilized to improve the services and opportunities for the end user.

The knowledge discovered and engineered in this module can be consumed and employed by:
    Students
    Teachers
    Scholars
    Academicians
    Academic Institutions

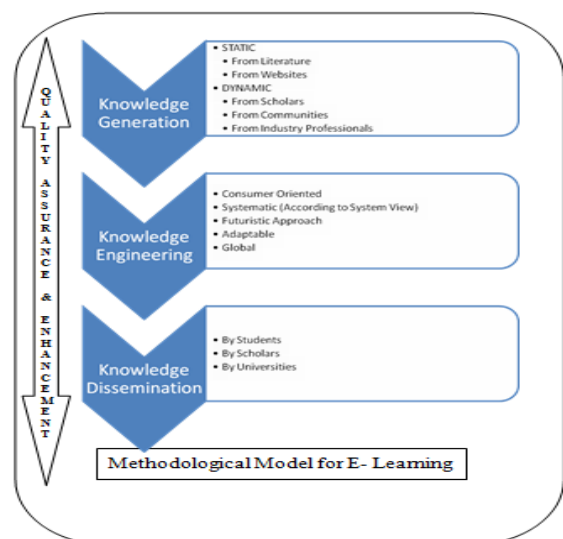**Quality Assurance and Enhancements in E Learning**

Fig. 2– Methodological Model for E-Learning

While quality is difficult to define, its importance is universally appreciated (Garvin, 1988). Quality's commercial importance comes from its perceived ability to lower costs, improve employee commitment, and ensure continuous improvement within a dynamic environment (Dawson and Palmer, 1995).

Quality in learning and education is one of the major considerations, as mentioned by today's scholars and practitioners who drive the worldwide learning and education.

Fine quality is of utmost importance in E-learning.

In the extreme competitive environment, requirement to achieve quality assurance in E-learning is rapidly expanding.

Therefore to maintain quality throughout the process, we have implemented this course of action and strategies to be followed in all the three phases of the proposed model.

Quality assurance must be

1.Objective: The purpose and vision of the E-learning system should be clearly defined.

2. Professional: A professional and systematic approach is required as to meet the requirements and demands of the end user.

3. Credible: The process should be reliable enough to be trusted and believed by the user

4. Recognized: The tools and procedures should follow standards and models from the recognized organizations.

5. Iterative: The process repeats itself with the aim of approaching a desired goal or target or result.

6. Continuous: The process should be uninterrupted in time, sequence or extent.

Knowledge Generation & Quality Assurance:

To assure and enhance the quality during Knowledge Generation, some approaches can be considered. These approaches involve:

Feedback Whenever any user accesses the contents or information available in the knowledge base, he/she is provided with a feedback form. The user can fill this form according to his/her satisfaction. These forms can be reviewed by the knowledge Engineers to update the knowledge base.

Questionnaires Some or the other time, a questionnaire can be issued online to the user of the service. This questionnaire will contain close ended questions to be answered based on user's experience and perception.

Reviews and Suggestions User can also provide valuable suggestions, either by e-mail, or by logging onto the site.

Interviews with the experts Experts from industry and various academic institutions can be interviewed time to time to get recent updates and suggestions. Management gurus can also be called up for their advice and comments.

Knowledge Engineering & Quality Assurance

In this module the information and knowledge gathered, is assessed based on the outcome of previous module's Quality report. This is the main phase where quality checks are implemented. As the raw information is transformed into engineered knowledge, quality has to be maintained, so that credibility and accountability of the information is achieved.

The major focus is on the following domains

Contents/ consumer oriented The very first aspect that attracts the end user is the content. If the content of the knowledge base is according to the consumer requirement, user will definitely employ

it. The requirements of the user can be collected by the approaches used in the Knowledge generation phase.

Comprehensive The knowledge should be complete and inclusive. It should be broad enough to cover all the relevant information. It should be global in nature. The scope of relevance can be decided by expert's advice as gathered in the previous phase.

Adaptable The user interface and design should be user friendly and understandable. It should be flexible and adjustable according to the suggestions given in feedback form.

Futuristic approach It should be innovative and advanced enough to cope up with the rapidly changing information world.

The term dissemination is legally defined as "the disclosure of knowledge by any appropriate means other than publication resulting from the formalities for protecting knowledge"4. Dissemination can, therefore, be seen as the means by which results are presented and made known and accessible to a broad public and/or to
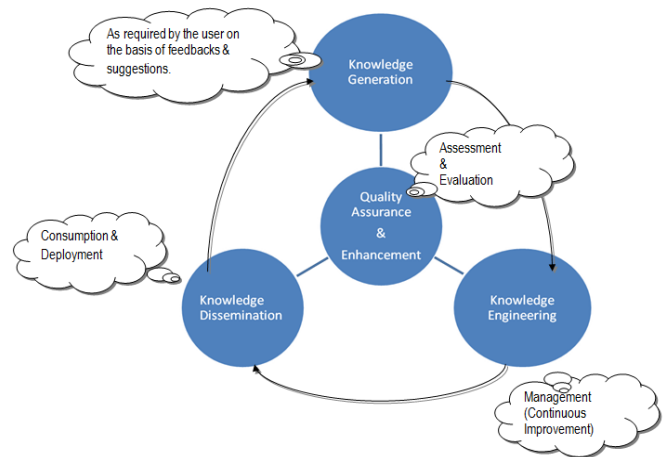

Fig. 3- Knowledge Dissemination & Quality Assurance

specific communities. BBB

The measures used are

Access mechanism/Interface

Authorization

Authentication

Learning Material & Environment

Conclusion

E-learning plays an important and vital role in day to day life, as well as in information world. There is no field, or industry that remained untouched from the effects of advancement in E-learning. It has became an integral component of IT world . In near future it will have its influence on each and every aspect of human life.

Due to its decentralized nature, it is being used by a large number of users, individuals, organizations, applications and services. Thus the primary goal to exploit the benefits of E-learning is its quality.

Here in this paper we have proposed a methodological model for E-learning. The issues related to quality assurance and enhancement, are discussed in the proposed model. Although the following has to be considered while aiming towards quality assurance.

"Providers must assure quality but they can't provide quality assurance."

Today's reality is integrated learning (I-learning) that combines the elements of traditional face-to-face learning and E-learning. In fu-

ture one can work upon the quality in relation to I-learning. Modern I-learning could get appropriate recognition in the future.

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