

more techniques skills of training according to the curriculum for the program, development of OH Child.

Finally, the OH school management must be aware of the purpose of OH education of their assessment procedures, in short, the action which needs to be taken when assessment is complete. And assessment without action is an ineffective as action without assessment.

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Topic : Intelligent Learning Management System: A Conceptual Framework

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Introduction

Instructional Technology is the theory and practice of design, development, utilization, management, and evaluation of processes and resources for learning (Seels & Richey, 1994). Since the teaching machine was developed by L. Pressey in 1924, the instructional materials designed are of various shapes with the innovations in technologies fitting that age. Especially, the development in Information Technology (IT) shaped the Learning Content (LC) into many different forms from the text with picture based materials to interactive web-based video materials. *One of the main intellectual and creative challenges for teachers preparing their courses is that of identifying and selecting the appropriate learning content/activity from the generic 'pedagogical toolbox', the items that meets the educational needs of a given student or the group of student ...* (Moodie & Kunz, 2003). The recent trend shows the interest of using rich multimedia components to design LCs, and now it's time to think more than that to provide effective contents to learners. This dimension of IT application will create a new shape in instructional technology if adopted in Learning Management System design.

Learning Management Systems

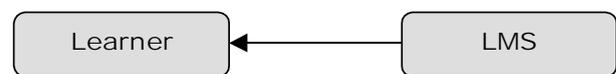
Learning Management System (LMS) is software that stores the Learning Content (LC), distributes content to the learners, and performs enrollment, assessment, grading and documentation. Many LMS includes socializing and collaborating facilities such as forums, blogs, chat and instant messaging. Irrespective of the developers, Most of the LMSs are browser-based and executed on a web-server in intranet or internet. Popular LMSs like aTutor, Blackboard Learning System, CCNet are also conformed to international E-learning standards viz., SCORM, LTSC, AICC and IMS. *E-Learning standards refer to a system of common rules of content, authoring software and LMS rules that specify how courses can be created and delivered over multiple platforms, so that they all operate seamlessly together* (Adina, 2007).

The flexibility and simplified design made many educators to move towards implementing LMS in their

campus. Conformance to standards has promoted the systems to store and deliver the LCs developed in diversified environment. The LC designed and developed in such environment is effectively molded by considering the following aspects.

- a) prior knowledge of the learners
- b) attractive and appropriate media (text, graphics, animation, audio, video)
- c) learners' common interest on media
- d) interactivity
- e) language
- f) instructional techniques

The influence of each aspect varies among the learners according to their learning styles. Different learning styles of the learners are convinced by developing two or more LCs fitting the style. These contents differ in the use of media, interactivity, language, etc. Each LC meets the requirement of the learners.

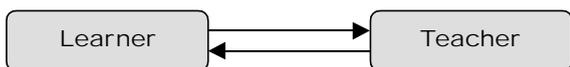


Thus designed LCs are distributed through LMS. The LMS possesses any of the following features.

1. Offers LCs after assessing the prior knowledge of the learner.
2. Offers LCs without testing prior knowledge of the learner, but in a predetermined sequence.
3. Allows learners to select their interested ones for learning.

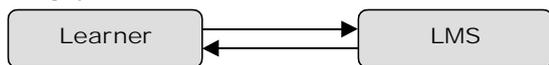
Bidirectional Learning in LMS

In Classroom, the teacher remembers various but distinctive qualities of the students, such as, the student's ability to achieve, student ability at beginning of the course, speed in adapting to the learning circumstances, change in pace of learning and interest in choosing the materials to learn. Keeping all those information in mind, the teacher modifies the content accordingly to present new information. In this context, the learning is bidirectional between teacher and students.



Due to heterogeneity and large number of students, a teacher cannot concentrate on delivering very suitable information to each and every student in a classroom. So, the LCs that supports regular classrooms and that facilitates individualized learning are delivered through LMS. However, the LMSs that exist today doesn't learn about the learner like the teacher does in classroom.

In present-day context, LMS doesn't provide LC by continuously learning the nature of learners, but always behaves same to all learners. So the LMS which is capable of learning the requirements and nature of the learners shall provide a better LC than the existing system. The LC provided in that kind of system shall be tailored instantly by integrating various components such as subject content, personal choices and learner's experiences. This will ensure bidirectional learning that happens in regular classrooms between teacher and student is also implemented in the E-Learning systems.



Hence, the current form of Learning Management Systems provides an effective service, but the integration of Intelligent Systems (IS) with Learning Management System (LMS) would make learning more effective and efficient.

Intelligent Systems

Intelligent systems (IS) are advanced computing systems/software developed to assist human beings in critical processes such as knowledge representation, decision making, industrial monitoring, automatic vehicle control, etc. These systems learn through the experiences and improve its performance based on the stimulus and responses happened in the system. Also, this kind of learning is referred as Machine Learning. The intelligent Systems are developed by applying advanced computing concepts viz., Artificial Intelligence, Artificial Neural Networks, Fuzzy Logic and Genetic Algorithms.

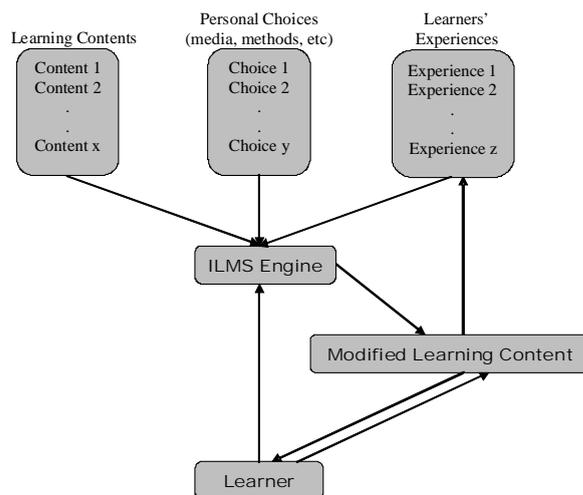
The application of Intelligent Systems is already found successful in certain areas like image processing, signature analysis, simulation, etc. *The creative vision of intelligent computer tutors has largely arisen among artificial intelligence researchers rather than education specialists* (Corbett, Koedinger & Anderson, 1997). So applying IS to develop Intelligent Learning Management System would make the Computer Aided Instruction (CAI) more effective than it is at present.

Intelligent Learning Management System

Bidirectional learning shall be accomplished by updating the existing characteristics of LMS with the features of Intelligent System to build Intelligent Learning Management System (ILMS). The ILMS continuously record any process involved during the learning such as selection of media, instructional method chosen and interactivity.

The information collected at every use is processed by the Intelligent System in ILMS to learn about the learner. While providing new content to the learner, the system considers all the factors that were tracked earlier from the day learner registered to the most recent learning process. The LC offered to a learner after this process would be more suitable to that individual than a predefined LC. So the learner can always achieve maximum without attempting the alternative or remedial content.

In the below figure, the ILMS Engine receives the request for a LC from a learner. Every time for every user, the engine processes the stored experiences about the learner to offer an appropriate modified learning content. The modified content is the integrated content from original subject content, personal choices and previous learning experiences. Original subject content is one or more components/parts of LC such as text, images, video, animation and simulation. Personal choices are the selection of media, learning methods, interactivity and other special features available in the system. Learning experiences are pace of learning, grades achieved, language used during conversations and kinds of interaction mode.



For e.g. If a learner wants to learn a topic in *SubjectA*, the engine automatically analyze the data available about previous knowledge of the learner in

SubjectA. The previous knowledge in *SubjectA* is analyzed by retrieving the earlier experiences such as topics visited and grades obtained. In addition, the previous learning activities such as forum discussion, journals read, enquires on chat, interviews listened and demonstrations watched are considered. Finally, based on the engine's result, a suitable content is offered to the learner. But the learner is also facilitated to override the choice opted by the system. The learner shall also be allowed to get the predefined LC like the present system if interested, or if the learner is new to the environment.

If the learner request a new subject in which previous experiences doesn't exist, the new content is offered by considering the past mode of learning chosen for other subjects, without considering the previous knowledge in the new subject, also learners will be allowed to choose their topic. Then, the learning experiences on this new subject are stored in the system.

So, the learning experience in ILMS is like learning all subjects from one teacher. In traditional scenario, on continuous participation with a learner, the teacher's understanding on the learner is strengthened. Similarly, the ILMS updates the learner's experiences continuously to strengthen the understanding about the learner, and delivers better content in future. As the computer based individualized learning materials are in use among many students, this student-centered approach is also an extension of the individualized learning materials.

Conclusion

Establishment of Learning Management Systems (LMS) has proven its effectiveness in supporting teaching-learning process. Application of LMS balances the demand for flexible educational approaches and must-follow instructional strategies. Understanding the role and importance of LMS, the educational institutions are focusing towards its implementations. So, LMS will find a place in any environment that looks to fit to the modern educational challenges and technologies. In this stage, amalgamation of prominent ideas of educational technologists and intelligent system designers would produce more innovative and flexibly student-centered environment by constructing ILMS. Although the ILMS is entirely a student-centered approach, further experimentation of this system in real-time environment has to validate the adaptability and reliability in present teaching-learning situations.

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