

DEVELOPING E-LEARNING PROTOTYPE FOR LIBRARY MANAGEMENT - A CASE STUDY

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Abstract

Development of Internet technology has opened up new method for delivery of education. The concept of E-learning is thus gaining importance day by day. In the area of open and distance learning, the E-learning methodology has been a boon to take education to the unreached. The Indira Gandhi National Open University (IGNOU) is offering Bachelor's and Master's Degree Programme since 1989. The Practical components of the Programmes are conducted at the Study Centres in a class room mode. A project has been undertaken to develop a prototype of E-learning using the training of a library management software package which is a part of the programme of the University. The project is under development and almost at the stage of completion. The paper discusses the methodology followed for development of the prototype and achievements made so far.

Introduction

The amazing development in Internet Technology has opened up new methods for provision of education. There are various terms that are used in providing instructional methods using ICT such as online education, E-learning, virtual classroom and some others. The online education refers to teaching and learning method mediated by a computer, but presupposes that there should be a connection to a computer system at place which is different from learner's personal computer system. The E-learning takes a broader view wherein various technologies are involved in the design, delivery and managing instructions using computers. Basically, this concept which was initiated with the term web-based training is a particular method of developing technology for instructions. It not only involves the process of designing, delivery of instructions in different platform and managing instructions, but also the technologies of managing training, authoring and managing contents.

E-learning in Distance Education

Distance education has emerged as a viable alternative to conventional class room education to achieve the goal of education for all. The philosophy of open education envisages to take education at the doorstep of learners irrespective of place and time. It aims at providing enormous flexibility to learners. The methodologies followed in providing distance education are in various modes starting from correspondence to audio, video, telelearning etc. With the development of technology, the E-learning has ushered in or at least shows great promise as a suitable methodology for successful implementation of Open and Distance Learning Programmes.

The concept of e-learning has posed a great challenge in developing necessary technology for skill-oriented discipline like library and information science wherein development of skills for information handling and its provision to the users is of utmost importance.

E-Learning Module for Library Management Software Package - A Case study

The Indira Gandhi National Open University (IGNOU) was established in 1985 to provide ODL for the people for whom the education is unreachd for varieties of reasons.

The University is conducting library and information science programmes at Bachelor's and Master's level since 1989. The methodologies followed for delivery of these programmes are

- a) Printed Study Material
- b) Counselling sessions
- c) Compulsory Practicals in cataloguing and classification, library software packages, online/CD-Rom search etc, conducted at the study centres
- d) Seminars
- e) Teleconferencing
- f) Radio-counselling
- g) Audio-video
- h) Continuous evaluation through Assignments and Tasks
- i) Term-end examination

The method followed for providing skills to the learners is practical work. Amongst the practical works which a learner attends, a learner is required to create and search a database developed through CDS/ISIS- an information retrieval package developed by Unesco.

WINISIS is a generalized information storage and retrieval system designed for the computerized management of structured textual databases. It may be used for creating a simple file of addresses or a complex file, such as library catalogue or a directory of research projects or descriptions of objects. Winisis offers an integrated programming facility allowing the development of specialized application. It is one of the most widely used information retrieval packages used for development of database in a library and information centre in the world. This is also being taught by the Library Schools world over.

A project was undertaken to develop a prototype of a web enhanced learning technology taking WINISIS (the Window Version of ISIS package) as an example.

Objective of the Project

- (a) To provide opportunity of learning the package to those who are not able to do so otherwise. These may be learners of various degree programmes of IGNOU and other working professionals
- (b) to develop a methodology for E-learning technology which may be utilized for developing E-learning modules for various other areas of library activities.

Methodology Followed

1. Identification of Target Groups - their Level and need

The CDS/ISIS package is included in the curricula of Bachelor's and Master's Degree Programme of IGNOU. Normally, the learners at entry level (Bachelor's Degree in LIS) possess a general Bachelor's Degree. As such, they may not have much exposure about library and information activities. Moreover, they may also not be having adequate exposure in handling the computers. Thus, the primary group of learners are those who will be undergoing training in IGNOU courses

Secondly, the package is widely used in the libraries and information centres in India, as it is developed by Unesco and distributed almost free. There are many professionals who are working in organizations intending to use this package but not having much exposure in it. The E-learning module is expected to be used by those groups also.

2. Identification of Environment

The important feature of e-learning is that it should be delivered at learner's place and pace. The availability of computer and Internet access is, thus, a pre-requisite. A survey has projected that the number of Internet subscribers and users in 2008 is expected to be 3.5 million and 10.0

million respectively (Power). The number of PCs will be around 6 million by 2006 (Statesman, April 23, 2003). Thus, in India with a population of more than a billion, a vast majority of learners may not have Internet accessibility. The accessibility of IT to LIS learners is even much less.

3. Design Features

Based on the above considerations, the project has been planned to be designed in such a manner that it should be able to cater to the requirements of both categories of users--having unlimited access as well as limited access to Internet. Thus, it has been decided to develop and implement dual mode delivery - i.e., Web and CD-Rom based. While Web-based programme may be used for interaction both synchronous as well as asynchronous, the CD-will contain the multimedia self-learning material. The features being included in the prototype are on the following aspects:

- (a) **Content Development** : The structure of courses to be developed was identified as follows:

- Module 1 - Database Concepts
- Module 2 - Introduction to CDS/ISIS and WINISIS
- Module 3 - WINISIS Installation
- Module 4 - Menus and Dialog Boxes in WINISIS
- Module 5 - Database Design
- Module 6 - Content Creation and Indexing
- Module 7 - Information Retrieval
- Module 8 - Formatting Language
- Module 9 - Sorting and Printing
- Module 10 - Database Conversion and Utilities
- Module 11 - Web Interfaces for WINISIS
- Module 12 - Project Work (Learner will work on a standardized template)

- (b) **Courseware Development** The courseware is developed in such a way that the features like database creation, automatic evaluation and student training features is possible through a generalised software package applicable both for the web and CD based interactive leaning

The package being developed reflects reusability, modifiability and scalability. Courseware is being developed in a modular format facilitating graded learning from simple to complex domains. It involves guided learning with support for an exploratory learning through related links and references.

- (c) **Content Delivery** : The key features of content delivery for the proposed programme are :

i) **Controlled Multimedia Components** (only on CD)-the objective is to incorporate controlled delivery of components step by step and monitoring under strict Learning Management System (LMS). The features of this component is to deliver self-learning material

in non-copyiable format and through Power Point slides and e-tutorials to supplement text material.

ii) **Self Evaluation with Feedback** (both on CD and Web) : The self evaluation and assessment features will consist of continuous assessment in each learning module in the form of quizzes, short answer questions, practical assignments etc and final assessment through project submission. The question bank with multiple choice, short questions and practical exercises is part of the courseware and different sets of questions are generated at different attempts.

iii) **Interactive Learning Forum** (only on Web) is provided in the prototype through Bulletin Board, E-mail, Chat sessions.

iv) **Additional Features** such as calendar (only on Web), Glossary, Related Links (on Web), FAQs (CD and Web) have been considered as the important other features for content delivery

4. Data Security

The data security features being included in the programme are in relation to access to contents, and installation (for CD). The objectives are (i) to provide online and offline security to contents (ii) stop duplication of information and (iii) protection from virus.

5. Choice of Platform

The entire E-learning package is being developed at two levels.

The front end engine of the software comprises reading material in text and graphic formats, slide shows, electronic tutorials, hands on practice (in a simulated situation), evaluation related activities and interaction. This is developed in HTML format with animation and movies in Quick Time format. Agents are incorporated to help the learner in guided learning process. The backend will involve automatic assessment, student tracking and feedback generation in the encrypted format. The database for this will be generated in MS Access. Great emphasis is being given to generation of learning curves of the learners. The encrypted data will reflect the following aspects:

- Usage of various training modules.
- Performance in self-assessment
- Number of attempts for self-evaluation
- Time spent in each module
- Time spent in other activities
- Time spent in final project

The CD version will be loaded with the multimedia components whereas the Web is to be used for synchronous and asynchronous interactions. A shell is being created with complete LMS and utilities viz. chat, e-mail, discussion forum for the delivery of the training module. The same

shell can be utilized in future for delivery of any other training programmes by incorporating necessary courseware.

6. Learning Time

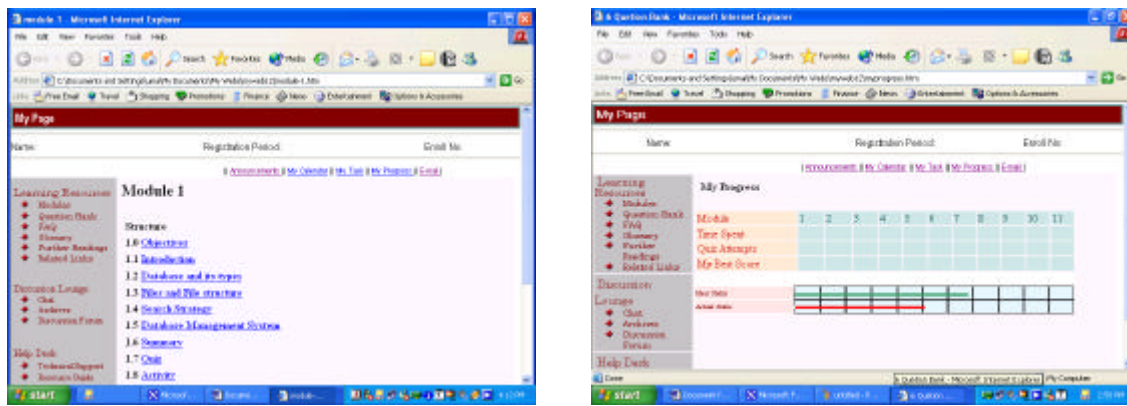
Keeping in view the requirements of ODE learners, the module is being developed in such a manner that a learner will spend 4 to 8 hours in each module, requiring 80 hours in total to complete the entire course. The break ups for time spent for each module will involve: reading course material, slide shows/e-tutorials, hands on practice on WINISIS package and self assessment/project work.

7. Prototype Development-Achievement So Far

The development of the complete package involves carrying out activities at two parallel and simultaneous level: i) development of the courseware i.e. the content development part, and ii) development of the delivery software. The content development is being done completely in-house whereas the software development part has been entrusted to a private vendor.

The development of the package has been envisaged in the following stages:

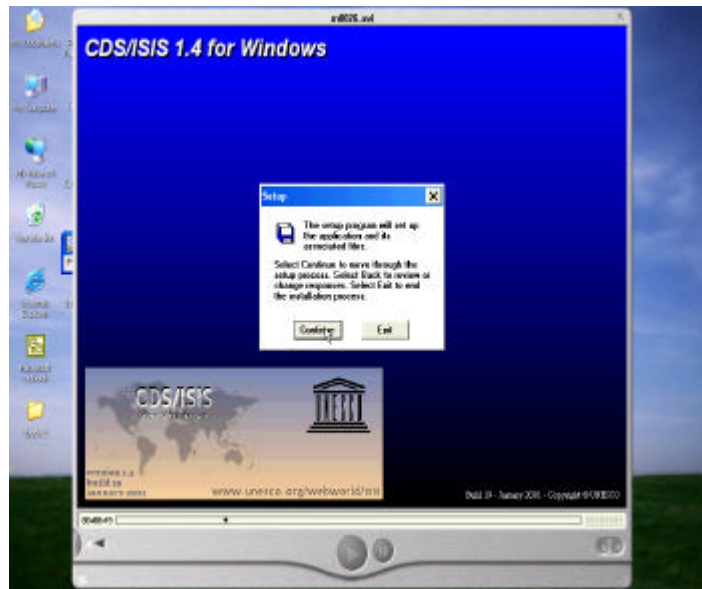
i) **Pre-planning:** In the initial stages experts of WINISIS and E-learning were invited for two day meeting to design the training curriculum and the delivery mechanism. The blue print for the complete e-learning solution was designed based on the suggestions of the experts.



Sample pages from the Blue Print

ii) **Courseware Development:** After finalizing the structure of the training modules, experts were requested to write the content of the courseware. The courseware development also involves preparation of the slides, animation and other multimedia components. The content and the slides of the all the modules are now ready. The process of development of the e-tutorial and required videos are in progress.

iii) **Software Development:** The complete e-learning solution has been developed by the vendor. The text content has been integrated with the software. The module wise integration of the e-tutorials and the videos are in progress. After completion of the integration work, the website for the training programme is to be hosted on the net and a few copies of CD to be duplicated for the purpose of Prototype testing.



Sample QuickTime Movie used in E-tutorial

iv) **Prototype Testing:** After complete integration of the courseware and the delivery software prototype testing is to be carried out. For this two weeks workshop is planned starting from third week of May 2003. Varied clientele groups will be invited to participate in this workshop.

v) **Finalization of the Training Package:** based on the feedback received from the prototype testing workshops, necessary corrections/debugging and modification will be carried out for finalization of the software. Multiple copies of CDs are then to be duplicated for delivery of the training programme.

vi) **Delivery of the Training Programme:** After finalization of the package the process of registration for the programme will commence. The duration of delivery of the programme will be one month. Online live chat sessions with national and international experts are planned, where the learners can directly interact with them.

Based on the response of the programme and feedback from the learners the future course of action will be planned.

8. Evaluating the Prototype

The evaluation of prototype envisages getting feedback regarding Programme effectiveness and technical execution.

i) Parameters for Evaluation

The parameters on which the prototype is proposed to be assessed before implementation are :

- a. Interface Design
- b. Content
- c. Technical functionality
- d. Interaction
- e. Timing

ii) Population of Evaluation

In evaluating the E-learning package, following groups of clientele are proposed to be involved.

- (a) Learners who want to undergo the training for the first time.
- (b) The professionals who are using the package for reasonable time.
- (c) The practicing professionals who have some knowledge of the package.
- (d) The trainers who are teaching the package
- (e) The LMS Experts

The content accuracy is an important aspect of evaluation. The functionality, integrity and completeness of the content have been done by an expert who has been involved in the application of CDS/ISIS for many years. In the development stage, the experts in the usage of the package were involved in the designing the modules, writing the textual matters of contents and editing the same. In the subject matter experts two groups of people were involved - the people who knows the requirements of learners and people who have expertise in developing computer-based training.

iii) Methodology for Evaluation

A suitable feedback form will be developed to elicit assessment of above aspects. The feedback will be collected through e-mail, telephone and postal service.

Concluding Remarks

The prototype development is expected to be completed by August this year when it will be available to the users who want to build up competence in this package. The completed package will have the following specialised features:

- i) Guided learning through multimedia material in a controlled environment comprising, text, slides, e-tutorials, quizzes, activities etc.

- ii) E-tutorial to replace teachers in a virtual situation. This will provide step by step guided tour of the entire WINISIS package with complete voice-over.
- iii) Hands on practice of the WINISIS package in a simulated environment.
- iv) Constant communication with the teaching end through synchronous and asynchronous modes of interaction.
- v) Generation of individual learner profile/learning curve through student tracking with LMS.

References

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