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Innovative Teaching Techniques for Distance Education

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ABSTRACT

Distance education is responsible for promoting quality information, resources and expertise. There are three reasons for disseminating education to all societies due to geographical isolation, social isolation and disadvantaged groups. Distance teaching techniques enable people to undertake a course of study in privacy. The advent of the Internet and the growth of Web have now transformed distance teaching from a broadcast mode to an interactive mode. The Web, when combined with other network tools such as listservs, Usenet newsgroups and video teleconferencing acts a virtual classroom to bring together a community of learners for interactive education. The growth of television, telecommunication, videotape, audio tele-conferencing, audio graphics conferencing and video conferencing allowed linking the learners and instructors who are geographically separated. The use of innovative teaching methods helps to sustain student's interest and make the learning process more productive and interesting.

The techniques that can be adopted are: computer-assisted learning (CD-ROMs), web-based learning, virtual laboratories, case studies, group discussion, brainstorming, audiovisual presentation, assignments, seminars, quiz and assigning project works. The faculty also prepares worksheets, manuals and audiovisual aids to supplement these novel teaching strategies. Students should be given two types of learning materials before their actual course material, viz. one on computer literacy class and other one focusing on Internet and the Web skills for searching, retrieving, locating and downloading the information. For better understanding by the students, the mixed-model approach of combining satellite teleconferencing with hands-on activity sessions can also be conducted. It is suggested that innovative assessment approaches like presentation, posters about learned material, dioramas; student displays and project fairs with test papers are to be used to know the progress of the students. The author concluded that problem-based learning would place students in the active role of problem solvers and confronts them with a real-world situation. He also concluded that DE librarians have much more critical roles to play in the new environment.

Keywords: Distance Education, Teaching Techniques, Internet, World Wide Web, Innovative Teaching.

INTRODUCTION

Change is the key element for the twenty first century that poses many challenges and enormous pressure on our daily life, work and society. Political, economical, social, and technological environments are changing significantly and rapidly. Information and communication technologies (ICT) transform all aspects of education and distance education (DE), which is a rapidly growing segment. The advent of the Internet as a means of information access and distribution and the explosive growth of the World Wide Web (Web) have transformed distance teaching from a broadcast mode to an interactive one. Faculty and librarians are all at the crossroads and being pressured to increase their productivity and to change instructional strategies to accommodate changes and educational reforms. There is a need for the new vision and the new roles of librarians within the changing DE environment. As a result, many library schools are seeking workable DE systems for themselves. To succeed in teaching library and information science at a distance, the entire faculties and related people must get involved in the development of courses and curriculum. This article deals with the distance education and the innovative teaching techniques used for that with few examples.

HISTORY

The history of DE in library and information science education can be traced back to one year after Melvil Dewey opened the first formal program of library education at Columbia College. Correspondence study was one of the first types of DE employed in this field. In 1888, Dewey urged Albany to develop correspondence courses in special library and small library services. The American Library Association (ALA) Committee on Library Training recommended in 1903 that school and/or 'leading libraries' be authorized to offer correspondence work.

Definition of Distance Education (DE)

A method of teaching students off-campus, at a distance and with a flexible schedule. To a large extent it requires self-study, but with the periodic guidance of an insturctor whom the student study may or may never meet face-to-face.- Law Library Journal (1999, V91).

An instructional arrangement in which the teacher and the learner are geographically separated to an extent requiring communication through media. – The Journal of Educational Research (1999, V 92).

Why Distance Education?

"Education is not the filling of a pail, but the lighting of a fire" - William Butler Yeats

Historically, the geographic isolation of students from educational institutions has been the prime motivation for developing DE programs. The early DE systems relied primarily on printed materials for instruction. Correspondence courses have been the most common delivery method of course materials to distant students. The Internet and the Web, when combined with other network tools such as listservs, Usenet newsgroups and video teleconferencing creates a virtual classroom. It is bringing together a community of learners for interactive education to any where, any time and any place. The three reasons to disseminate education to all societies are: geographical isolation, social isolation, and disadvantaged groups. People may be geographically isolated because of distance, terrain, or undeveloped communication systems. People can become socially isolated for a number of reasons. Mostly it is because they are disadvantaged in some way, financial, physical, emotional, or because of family circumstances. Some people lack confidence in their own ability to learn.

DE has been moving very fast from correspondence education to online education or web-based delivery of education. New types of educational technologies are emerging at an ever-accelerating pace. The integration of new types of educational technologies, technological development, globalization and massification allows flexible learning, increased potential for interaction and access to a wide clientele. It has widened the scope by including online education, online courses, virtual courses, virtual library and etc. Learning becomes more self-directed, collaborative, intertwined with personal life and work, and more resource-based, calls for perpetual access and usage of information and learning resources. Learning shifts from ***know what*** to ***knowing how***, how to learn, how to secure information, use it, and how to relate to a changing society. The new emphasis will be on access and usage. (Thomas 1995).

SKILLS & ACCESS

Many new techniques are available for teachers to learn, adapt, and employ in their classrooms. Techniques such as resource based learning, project based learning and problem based learning all encourage individual as well as group learning, critical thinking, the application and investigation of issues relevant to student's lives, and the opportunity for students to develop independent learning skills. Achieving these objectives, as well as the acquisition of a basic body of knowledge, enable these students to become skilled life-long learners. The chances that a student will remember, learn and use material are increased if they work with it and integrate it with information from other sources and their own prior learning. Therefore it is vital that teachers learn these innovative techniques and incorporate them into their teaching in the classroom. The main goal of resource based learning is to provide the opportunity for all students to develop independent learning skills which will enable them to become life-long learners. This innovative teaching technique also emphasizes the importance of establishing a community of learners in which teachers and students share the responsibility for defining and achieving the learning goals of the entire group.

Resource based learning can be identified by the following: students actively participate in their own learning, a wide variety of resources are used, varied locations for learning, teachers employing many different instructional

techniques, and teachers acting as facilitators of learning-continuously guiding, monitoring and evaluating student progress. By incorporating the above listed items, resource based learning develops skills that require application and synthesis of information by encouraging the students to engage in questioning and critical thinking about a particular topic.

Project based learning is based on self-directed learning that is usually conducted by small groups of students. Projects play an important role in learning because in addition to the achieving the objectives mentioned earlier, they also promote the engagement of complex processes of inquiry and design. A project can have many benefits over other forms of classroom activities because they typically involve more complex cognitive processing. The engagement by the student in critical thinking and inquiry typically will enable the student to develop his or her skills in this area, eventually enabling the student to become a better learner in all areas of education and life.

Problem based learning is based on self-directed learning that is usually performed in small groups. The aim is to confront problems and not limit the students thinking and understanding to required text readings and instruction. The problem based learning method encourages open-minded, reflective, critical and active learning. It respects the fact that both the teacher and the students have knowledge and understanding that they bring to the problem or project and it also reflects the nature of knowledge, which changes as groups of people focus on it.

The skills set for information professionals, which is emerging focuses around four key areas of professional practice:

- information resources
- information service and organizations management
- information systems
- policy and the broader social dimension of information work.

Library services are essential support services to DE students. Most researchers in DE access to library and educational resources and services in various ways. Access can be directed e.g. face to face, or mediated by printed material, e.g. manuals, brochure, or mediated by technology, using a variety of media such as telephone, voice mail, web site, email. Successful direct access is characterized by flexibility, reliability, availability, user-friendly, portability, efficiency and service ability.

INNOVATIVE TEACHING TECHNIQUES (ITT)

Internet. The Internet as a medium of learning is explored to the maximum for the creative use and positive impact of such knowledge on the learning process. Topics from recent advances in the subject are allocated to them. Through Internet search, the students acquire the latest know how on the assigned topics and compile the projects in the form of a brochure.

Web-based Instruction (WBI) is defined broadly as any form of innovative approach for delivering instruction to a remote audience in which the Web is included as a tool (Relan & Gillani, 1997). Presently, several Web sites have been developed to provide learners with access to instructional resources from a distance. However, Hill (1996) noted that, most course-based or learning sites simply post course materials. In such instances, use of the Web falls far short of the potential this medium affords. According to Casey (1998), currently used Web models of learning can be identified as one of the followings:

1. The Web as Source of Information: This is the simplest use of the Web. It is used as a convenient place to store supporting information for traditionally offered courses.
2. The Web as Electronic Book: Many institutions have moved to use the Web to present information in a more structured way for teaching process. Students use the screen to read materials, activate multimedia demonstrations, and take self-correcting quizzes or other activities. The course material is mostly factual information, which is to be learned from the Web page and any accompanying media. There is no interaction between teacher and the students through the Web.
3. The Web as Teacher: Some Web-based courses include some form of personal communication between students and other students via the use of email and perhaps chat rooms.
4. The Web as a Communication Medium between Teacher and Students: In this model, students learn from the teacher but "through" the Web and not "from" the Web. Thus, the Web acts as the communication medium for the necessary interaction. A model such as these aims to mirror a face-to-face learning

environment, within which the students will be able to establish some form of human relationship with the teacher. (Ruksasuk, 1999).

According to Reeves (1997), the WBI has a rich mix of media features and the pedagogical dimensions to deliver. The aim of Web-based education must surely be to develop a model, which will enable a relatively large proportion of the student population to learn relatively easily and successfully (Casey, 1998).

Computer-assisted learning (learning through CD-ROM) - The opportunities associated with the development of computer-based technology in contributing to effective science education have grown exponentially within the past decade. The multimedia software available on CD-ROM plays a powerful role with applications in labs and lectures, tutorials and project work.

Seminars –To have interaction, weekly seminars are held and all the students are required to participate actively. The best speaker of the seminar from the entire batch is given an award. The awards are given to inculcate a competitive spirit among the students and bring the best out of the students.

Virtual laboratories - Virtual laboratories detail the preparation, essential equipment, and method relevant to the practical and students then actively perform experiments themselves with simulated responses. Virtual laboratory presents a range of equipment on-screen and may offer a very high degree of interactivity. Training through audiovisual aids can play an important role in medical education.

Students as project coordinators - The department inculcates leadership qualities in students. The students actively participate as coordinators of the on-going departmental research projects, by which they are encouraged.

Teleconferencing – It is a new mixed model approach for DE combining satellite teleconferencing with hands-on activity session. It was developed to adjust for many of the disadvantages associated with DE and traditional in-person training. The mixed model used live teleconference speakers, video clips, interactive call-in sessions and local sessions.

Telematic Education – Enables students to access teaching programmes and learning materials at a more flexible time, place and pace, and results in many flexible learning opportunities.

Quiz - After all the above techniques, the most encouraging one could be the conducting quiz for the students at various rounds (six). The first round, consisting of question-answers, is based on simple recall of factual information. Rounds II and III, consisting of Jumbled Words, Multiple Choice Questions (MCQs) and Graphs and Flow Diagrams to indicate missing links are based on interpretation of information from charts, graphs, or flow diagrams or interpretation from two concepts that have a relationship. Rounds IV, V and VI, having Match the Following, Ascending Order, Trace the Path and Rapid-Fire Questions are based on testing primarily the application of knowledge to the solution of a specific problem and the fitting together of a variety of elements into a meaningful whole. The quiz conducted for students inculcates in them team spirit, leadership, better organizing abilities and interest and better comprehension of the subject. The Quizzes help in improving memory power, scientific nomenclature, and vocabulary and active learning through integrative reasoning, which helps in improving intellectual power.

USE OF I.T.T - SOME EXAMPLES

Department of Physiology, Government Medical College, Chandigarh, India, introduced a number of innovative teaching techniques emphasizing the interactive form of learning for making the subject of Physiology more interesting since 2002. Some of the teaching methods adopted are: CD-ROMs, Powerpoint presentations, Web-based learning, virtual laboratories, seminars, audiovisual aids (Video-based demonstrations) and PhysioQuiz.(Nageswari, 2004).

Sukhothai Thammathirat Open University (STOU) in Thailand for DE organizes its courses into four levels: master's degree, bachelor's degree, certificate and continuing education levels in various fields of study. STOU has devised a multi media distance education system "STOU Plan" enabling students to study independently without having a conventional classroom. STOU has developed and integrated various instructional media (ITT) into a distance teaching/learning system to help students study independently without having to enter a conventional classroom. The instructional media comprises *main media* (textbooks and workbooks which are mailed to students)

and *supporting media* (audio-cassettes, radio and television programs in conjunction with printed course materials and other audio-visual aids). (Sacchanand, 2002).

Learning and Teaching Support Network for Information and Computer Sciences (LTSN-ICS) established by the UK HE funding body aims:

> *"To provide, through a coherent and integrated network of subject specific and generic centres, high quality information, expertise, and resources on good and innovative learning and teaching practices, and to effectively promote and transfer such practices to enhance learning and teaching activity in UK higher education."* (Brine, 2002).

The LTSN-ICS' website contains full details of its activities. The Centre's current work includes:

- Innovations in Teaching and Learning in Information and Computer Sciences (ITALICS) - a peer-reviewed electronic journal;
- A development fund providing support for small projects in UK HE institutions;
- An enquiry service that links the expertise of those in LIS departments;
- A programme of conferences, workshops and focus groups;
- Projects looking at aspects of teaching and learning, including plagiarism, cross-searching of interfaces and key skills.

In Autumn 2000 Sweden established the Council for the Renewal of Higher Education to support activities that were concerned with pedagogical innovation in HE. It is also charged with collecting and disseminating information on activities related to HE in Sweden and abroad.

Telematic education at the University of Pretoria may be either "pure" distance teaching, or contact teaching supplemented by technology-based teaching. This implies that a student on campus may also be classified as a telematic student if his/her course includes sections that are supported by web-based learning and teaching. Technology-based teaching can be either web-based, or television-based (via the University's dedicated digital satellite TV channel). Distance teaching delivery can be either paper-based or technology-based or a combination of both. Web-based telematic teaching provides a continuum of learning possibilities and styles, from fully web-based courses where all material and interaction is solely via the web, to contact teaching where the web is used as a support to facilitate the access to study guides and prescribed articles, as well as for communication between lecturers and students. Many departments at the University follow the latter model. (Bothma, 2000).

In Gujarat University (India), the M.Ed. Programme is to prepare learners for higher level functions in education including teacher education, has a broad understanding of all the contemporary concerns of education like:

- Curriculum
- Educational Planning and Management
- Research in Education
- Evaluation
- Guidance and Counseling
- Education Technology.
- Information Technology in Education.

The purpose is to develop an educational leader with vision.

The New York Public Library Science, Industry and Business Library (SIBL), the world's largest public information center devoted solely to science and business, supports the use of its diverse electronic and print resources by offering a curriculum of 18 free classes to the public. SIBL reinforces Internet and electronic resource skills by using the Web as an instructional tool. (Thornton, 1999).

In-house Web pages on public workstations provide helpful tips and links to resources by category. Using these Web pages during training sessions makes it easier for librarians to teach and for class participants to follow. Instructional Web pages are particularly useful in sessions including significant hands-on training in Web sites because participants do not have to enter Web addresses and risk typing errors.

Similarly the Australian Universities Teaching Committee was created in the year 2000 to promote excellence and collaboration in university teaching and learning.

ASSESSMENT

The use of innovative teaching methods requires innovative assessment approaches. Assessment of a student's progress should ideally be evaluated using multiple intelligences and not only using conventional testing methods. Assessment tools may include class presentations, posters about learned material, dioramas, special student display nights and project fairs as well as tests and term papers. Use of these standardized testing requirements helps to evaluate the curriculum and teaching methods. The importance of interactions is stressed for assessing the students. For example, Gilbert & Moore (1998), describe two contexts for interaction: the "social interaction" between two or more people about the learning material; and the "instructional interaction" between the individual and the learning material. As for social interaction, the interactivity between students and teachers and between students and students can sometimes have little to do with instructional learning, but can still help to create a positive or a negative learning atmosphere. These interactions also provide feedback to and from students about progress toward instructional objectives. Some types of social interaction can directly foster instructional interactions. Social interaction tends to have lements of mutuality, flexibility and bi-directionality that are not as frequently found in purely instructional interaction.

The assessment acts as an:

- Information-gathering
- Impetus for innovation: uncovers a problem and points to possible remedies
- Innovation as impetus for assessment:
  - Provides feedback
  - Enhances faculty & student engagement
  - Reinforces motivation for teaching improvement

- A link between teaching improvement and assessment improvement
- Traditional markers may overlook emerging dimensions of student learning

CONCLUSION

The field of education all over the world is swept by a paradigm shift that is the result of a new awakening in the teaching-learning process. The onus is now on the learner and the teacher is now looked upon as a facilitator. Understanding that the traditional chalk and talk method can no longer enthuse the students, the college continuously strives to innovate methods that will sustain their interest and make the learning process more productive and interesting. Innovative teaching can take many forms. Educators must learn to change with the times and the methods offered for instructing students. These changes will ultimately benefit the students and the education system. The ability to adapt to these changes may be one of the most important attributes for today's educators. Academic librarians perform an in dispensable function in the educational process. DE librarians have much more critical roles to play in supporting the DE system in the new learning environment. The question remains as to whether they will remain merely information providers as in the past or whether librarians as *facilitators* of other's people learning should take a proactive roles in the changing context as instructors of the information literacy skill or partners in the teaching /learning process to create information literate distance students. As a result professional public awareness of librarians as educators and faculty status of librarians as equal to teaching faculty will be enhanced.

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