UNIT 16 COMPUTERS IN OPEN LEARNING SYSTEMS

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16.1 INTRODUCTION

The computer is right now in the early throes of a new phase of communication. The emergence, in the last few years, of the so-called 'cyber space' was a turning point no less decisive than the advent of the computer itself. Home PC is now acting as a link to the expanding cyber space (Internet/web) - which they say, would be in everybody's school, shopping center, movie hall and even in Pan Shop. There is a promise in technologies that will transform our roles, as it has never been before. The increasing capacity, flexibility, and suitability of information and communication technologies to educational applications are a driving force for the development of newer models of education. These technologies are capable of performing many functions that were done by traditional methods till now. The growth of knowledge has placed pressure on conventional models of education. People are now seeking opportunities for life long learning and with the heterogeneity they have, they require flexible access to learning opportunities and at venues such as home, the work places, and the learning centres and at the traditional institutions. People have realised that applying these technologies can enhance the quality of learning experience. In the conventional classroom we find increasing use of Internet to access information, which enriches the learning experience. Further in the open learning environment, we find the technologies being adopted to improve the learning process through interactive and collaborative learning to reduce the learner's sense of isolation. There is a demand from these learners for access and support service. Technology has come to their rescue by enabling a remote education provider to address the instructional resources available to everyone. This has made us to expect that development of newer models of education based on these technologies will reduce costs, increase productivity and enable expansion without cost increase.

Teachers must feel the power of electronic technology and the best way to master it is to use those skills of curiosity, imagination, critical analysis, and judgement that have been their primary resources. Open learning provides an appropriate environment for you to explore the possibility of using Computers. What shape the school of the future will take is amorphous, but most of the people agree that the future schools will go electronic in a big way. Students will see and hear teachers on computers, with 'remote learning' the trend of tomorrow. Accessing "classrooms" on their home computer, students will learn at times, which are most convenient to them. Yet some attendance at an actual school will be required to help students develop appropriate social skills. You might be wondering whether we are talking about future schools or open learning? The fact is, there is a striking similarity in the characteristics.
16.2 OBJECTIVES

After reading this unit, you would be able to:

- understand what open learning is all about;
- realise the benefits computer can offer to students, teachers and administrators in an open learning setup; and
- appreciate how computer and related technologies have enabled successful applications to happen.

16.3 OPEN LEARNING SYSTEM

What is Open Learning System? Open Learning System can be defined as a system of education that does not operate through the traditional conventions which are essentially restrictive in nature - admission restrictions, attendance restrictions, restriction on the candidature for examinations, restrictions on the period of time devoted to a course, restrictions on the number of examination given and taken in a year, restrictions on subject combinations for a particular degree, restriction on the modes of didactic communication and the didactic tasks etc. The larger the number of such restrictions left unobserved, the higher the degree of the 'openness' of the type of education under consideration. Open learning thus refers to non-conventional education, which defies constraints that characterise the traditional school/college/university education. Also, it can be stressed that using technological advances can easily affect learning. One can say that open learning is thus an extension of (not replacement of) the traditional lecture type, of workshop and laboratory based training and education. Open learning is essentially flexible and is essentially multimedia based. It enables learners to extend and enhance their skills and knowledge working at a time, pace and places to suit them as individuals and/or teams. In a nutshell, we can define open learning as an educational system where:

(a) the student has a choice and the freedom to learn
(b) the student is supported by the multimedia based learning materials
(c) the tutors create an effective learning environment and infrastructure to enhance and facilitate learning.

Thus, Open Learning have sub-systems which identifies the learner, conceptualise and create multimedia learning material, distribute them at the learner's place, provide support in the form of "human element" through a network of contact centres and finally, do a sort of continuous evaluation to provide feedback to the student for completing his learning. It is essentially unstructured and provides a lot of dialogue so that the learner does not feel isolated.

Good open learning programs offer the best use of learning objectives; user friendly style, environment and flexibility (with respect to time, place and pace); tutor marked assignments, and/or self assessment and finally an education process that is designed and delivered to satisfy the individual needs. Open learning includes those situations where the learning occurs at a 'distance' as well as where learning occurs without this being the factor for the learner and teacher (telepresence through teleconferencing).

Check Your Progress

Notes: (a) Write your answers in the space given below.
(b) Compare your answers with those given at the end of the unit.

1. What will be the "Key Characteristic" for the future schools?

2. What kind of "Educational System" is Open Learning System?
16.4 BENEFITS OF COMPUTERS IN OPEN LEARNING SYSTEM

Computer offers major benefits in open learning. These benefits extend to learners, teachers and of course to the institution. These benefits are to the extent that people are compelled to believe that the "institutions they know will no longer exist". To make our point a little stronger, we can list out the possible technologies in open learning where computers play an important role. They are having lot of applications on Local Area Network (LAN)/Wide Area Network (WAN), Electronic Mail (E-mail), Internet, multimedia, CD-ROM, Electronic Conference and Electronic Bulletin Boards (BBS). If you see the international scene, teachers have already started using those applications like text books recorded on CD-ROM interactive media, conferences recorded on CD-ROM interactive media, case-studies and Test banks recorded on CD-ROM interactive media, tutoring through E-mail, BBS and World-Wide-Web (WWW) etc. The list is endless. The use of computer in open learning can be classified into following three categories:

- Virtual mode
- Dual mode
- Mixed mode

Virtual Mode : Those who are using computers for the complete cycle i.e. from registration of students and educational delivery to evaluation and certification. In effect, the student never needs to interact with any entity, human or otherwise, through any other medium.

Dual Mode : Those who are using computer to complement one or more operations of their instructional model. In this mode, it is necessary for the learner to complete an instructional cycle through computer-assisted methods.

Mixed Mode : Those who are using computer to supplement the operations of their instructional model. In this mode, the learner can choose to learn through any mode. Computer assisted methods are not compulsory.

In India, Net Varsity (www.niitnetvarsity.com) is the first attempt of its kind, which fits into the first category. The Net Varsity offers short courses. It is a virtual institution of seven people operating from New Delhi, with a Web server in the US and networking around 50,000 learners and teachers together in a commercially viable manner. In the second category comes, the Virtual Campus Initiative (VCI) of IGNOU. It is possible to register for several courses ranging from short-term diploma courses to bachelor's degree courses through the web site (www.ignou.org.). Lessons can be downloaded and interaction is mainly through e-mail. Another interesting feature of VCI is that the entire study material is given to the students on CD-ROM at the time of registration. The third category comprises of a few institutions that have put the resources on the web. However, there is very little representation from schools. Interest from school administration and teachers is not lacking but there is a great lack of where and how things should be done.

16.4.1 Student-Centric Approach

Computers in Open Learning provide a student-centric approach. Let's examine it from the point of view of cost. Multimedia is inexpensive. Literally all new PCs are powerful multimedia machines with CD-ROM, video, sound and networking capabilities. So any learner having access to computer and educational resources would not bear any additional cost. More importantly, students have a choice to pace their study according to their own will, own time and own place. In the case of computer assisted learning, learning is done in a non-linear mode as compared to traditional linear mode: The learners have direct access and they learn by exploring rather than learn as told. Thus the entire learning process becomes more student-centred. Multimedia is easy to use and interactive. Most programs enable learners to move the cursor on the computer screen to explore new areas of information. This exploration act satisfies the learner's appetite for learning at their own pace and sequence, under their control. The most adorable part of this type of learning is that students can have as many goes at solving a problem or understanding a concept, as many times they require.
doing so. In the process the concept is reinforced and learning is more powerful. Mistakes can be corrected without getting ashamed. More so, multimedia tools and a variety of media are available during the learning process. The learner becomes more self-critical and participates directly in his own learning process. This kind of approach also facilitates collaborative learning needs and on the other hand permits collaboration between the peer-group. Interactive multimedia supports the concept of "tele presence", meaning that despite the fact that the learner(s) and the tutor(s) are physically apart, they are electronically linked by sharing the same material. Since failures are not exposed in open learning situations, fear is not a part of the learning and evaluation process. Multimedia supports student performance and any learning process is most successful if the learners have the opportunity for success.

16.4.2 Teaching with Technology

In the best of the classrooms, technology should be used to support the curriculum. The classroom objectives should be taken into consideration. As a teacher you must be able to specify technical and practical issues of hardware, software, and technical support. Philosophical issues of content, standard and evaluation should also be taken into account. Integration of computers and content is very important and believe it or not your content could re-emerge enriched by the use of computers. The major characteristics of teaching with technology are as follows:

1. **Professional Growth:** Teachers who have been using computers in their classroom, themselves devote a lot of their time to keep up with all the new things that are happening in schools. Anyone can succeed in some way with the new technology, but for truly imaginative classroom applications, there is a price to be paid, and that price is time. There is a wide variety of approach that integrates teaching and computers at all levels of education. It has also proved to be a good platform for teachers to grow professionally by sharing innovations and getting ideas from fellows.

2. **Digitised Archives:** The advent of computer and web has enabled us to have information in the form of digitized archives. An incredible amount of primary materials are now available free and online on the web. While proprietary learning programs and CD-ROMs once dominated teaching technology, the advent of the web has inspired a popular revolution. With a little experimenting, teachers can find a wealth of electronic resources to enhance their lessons and assignments.

3. **Collaborative Efforts:** Teaching with electronic technology is essentially collaborative in nature. Teachers have already started to collaborate with students to create online resources not only on content but also audio-video recordings. Now, this is a turning point, as this enables teachers to have more time for face-to-face conversations and group discussions. Often the 'expertise' of teacher is stretched by their student's work. Thus, the teacher's role becomes of a facilitator who works with students to help them find and analyse resources.

All the above-mentioned points are a deviation from the teaching which we know of in the yester years, the teaching where teacher used to be the only expert and authority. We can summarise the benefits of computers in open learning to teachers as follows:

(i) Teacher’s role changes towards a facilitator, consultant and guide, rather than the sole information source and knowledge provider as in the past because students will teach themselves and work on their own.

(ii) Learning does not become monotonous as the routine part of the material is grasped by the learner themselves, by means of multimedia technology, and because the difficult part is taught or explained by the tutor itself.

(iii) Interactive multimedia, when used as a combined CD-ROM based mass media and a real-time, Internet supported learning environment, offers learners the opportunity to learn about facts, to get ideas, discuss learning issues with their team members and tutors locally, or on the Internet, following the “tele presence” principles, and teachers to formulate action plans.

(iv) The teaching component gets slightly shifted towards the self-assessed learning type and teachers can devote more time to facilitate learning and developing contents etc.

(v) The courseware on CD-ROMs permits the tutors as well as students to gather information using their own or third party resources.
16.4.3 Administering with a Difference

The previous units have given you enough insight as to how computers can be used to perform the tasks that are otherwise considered mammoth in quantum. The entire process for student support, student assessment and material delivery becomes comparatively easy to handle. Staff wastes less time on routine, repetitive teaching, bearing more time for creative developments. Staff becomes more motivated and brings more enthusiasm to their teaching work. In this block, you have seen computers working for effective educational planning needs of your school, computer working for effective student support service and computer working for effective assessment and feedback needs of your school. In all, you have witnessed how useful is computer for you. You might be wondering how you were doing without it till now.

Check Your Progress

Notes:

1. Write your answers in the space given below.
2. Compare your answers with those given at the end of the unit.
3. List all possible technologies used in Open Learning System.
4. Learning is done in a non-linear mode through Computer. Elaborate.
5. Why teaching with technology is a collaborative effort.

16.5 KEY PROBLEMS

However, nothing goes without difficulties faced. You ought to face some difficulties while introducing open learning and computer based applications. Prominent among them are cost, lack of student motivation, student overload, increased marking/grading load, self-assessment and new organisational structures for lecturers/instructors and courses. In addition to this, there is always a possibility of the cultural and human resistance to accept change in a traditional education system. It is said that if the technology is working then everything is fine but if it doesn’t what happens then. Some people also claim that the effect of multimedia especially the video part drags the attention of the student from the content. But this can be countered by the fact that multimedia can be searched and controlled by the click of a mouse. There could be problems in terms of layout of the classroom, the lights, the screens, the screen projection system, and with the other local infrastructure. The cost will also be crucial in terms of the aforesaid problems. As with new technologies, many people intend to believe, that one technology will resolve all of their problems. This is of course not true, even if the technology we are talking about is the Internet. The major issue is transfer rate and bandwidth, as well as the cost of storage of data. Though there are a bunch of new technologies that are emerging in the area of compression and streaming etc. The truth is, that the Internet is extremely slow. When compared to a CD-ROM, Internet is several hundred times slower in terms of speed and storage capacity. Because of this the logical solution is to store real-time changing information on the Web and longer term, large files, videos and photos on the CD-ROM. There are typical problems with the technology but these are small enough to restrict you to plan a shifting from your traditional setup to the one that we are talking about.
16.6 SOME SUCCESSFUL EXAMPLES

We illustrate the concept we are talking about by means of successful examples where computers (Internet) are used for attaining educational objectives. These examples are by no means exhaustive, but a typical means of showing what teachers have already started doing.

Example 1

The Internet Science Room
21st Century Education
Frontier High School
Red Rock, OK

Have a safe summer! Classes resume August 14, 2000

Research
- Website Purpose and Goals
- Student Research Projects
- Research Links and News
- Search This Website
- Lab Safety and MSDS
- Plant and animal collection policy
- biological inquiry using iBooks
- Using the scientific method

Classes
- Physical Science
- Biology
- Chemistry
- Botany
- Tour the Physics room
- 2000/2001 Course Descriptions
- Oklahoma PASS Obligations
- Current School Calendar

The Internet Science room is a web site maintained at Frontier High School in Red Rock, Oklahoma. This well maintained site provides a valuable online resource for teachers and students at Frontier high school as well as others interested in combining communications technology and science teaching. The site also serves as a information bulletin for the student i.e. the student can log-in from any part of the world to know important issues and announcements about the school, it has a search facility and research links to various other sites of common interest. It clearly specifies the purpose for which it is created and goals which it deems to achieve.

Example 2

http://www.utexas.edu/world/hall/

World Lecture Hall publishes links to pages created by faculty worldwide who are using the Web to deliver course materials in any language.

Some courses are delivered entirely over the Internet. Others are designed for students in residence. Many fall somewhere in between, and all can be visited by anyone interested in coursework on the Internet, faculty developers and curious students alike.

Because World Lecture Hall does not administer the courses it links to, visitors who want to know more about a specific course should use the contact information published at that particular course Web site. For more about Internet courses, degree programs, or distance learning and teaching in general, please refer to our useful links.
The World lecture hall is a site, which integrates teaching and computers at all levels of education. It provides links to a vast and growing collection of course websites in nearly every discipline. It's a good place to get ideas from other teachers and to share innovations. The courses are mixed in nature: some delivered entirely on the Internet and some designed for students at their residence. It is maintained at the University of Texas at Austin.

Example 3

The third example is of Education World. It is a site, which claims that this is the place where educators come to learn. It has a site guide that contains archives, information about books, and links to other sites, lesson planning, school's issues, and teacher's lessons. It has a quick browser that search the database on virtually all subjects. It contains information that is of interest to teachers, parents and students. Further more, it also offers Employment Listings, Grants Center, Learning Calendar and Message Boards.

Example 4

Think Quest is a collection of award-winning student web sites and competitions that reveal an impressive range of student-generated innovations in teaching and learning technology.
**Example 5**

*Ed Sitement* is a website for school teachers and students sponsored by the National Endowment for the Humanities and MCI World Com. It includes links to outstanding resources in the humanities as well as lesson plans and a powerful search engine. These types of sites basically collects exemplary sites chosen by a panel of experts from scores nominated by scholars and teachers.

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**Example 6**

The *Learning Page* illustrate the fact that web has inspired a popular revolution. The riches of this growing collection includes not only documents of the nation’s founding or photographs of the civil war, but original audio recordings of American Folk music. There is a powerful
and flexible search engine built into this site. Teacher can find a wealth of electronic resources to enhance their lessons and assignments, with additional suggestions for activities and lessons.

Example 7

**Kathy Schrock's Guide for Education** is a categorised list of sites useful for enhancing curriculum and professional growth. It is devoted to critical evaluation at various levels of the curriculum. It gives evaluation resources that enable teachers and students to evaluate the quantity of information they encounter online.
One thing that positively emerges from these examples is that as a beginning, people are supplementing their endeavours with the help of technology. Educational applications are growing and using more and more of technological breakthroughs. It's a time when no body can afford to wait and watch. It's a time to act and perform and no wonder, once started, you can also start enjoying it. The key is that you should be prepared! And of course practice makes the master, so practice! It is fun!

16.7 LET US SUM UP

The computer based package is self-contained, in the sense that it contains all important handouts, artifacts, kit, software, books, hardware and software, that are essential for the learning process. To reduce loss, these resources can be shared. These resources have the capability to link to the Internet so that they can be made up-to-date and can provide on-line interactivity. Computer based teaching can be used to educate large number of students simultaneously (IGNOU at present has 6,50,000 students on rolls). Learning when done by exploring has a positive effect on learners. Highly interactive and non-linear navigation is possible to stimulate learners about a topic. So, this type of learning has well defined objectives and learning outcomes. It also explains the assessment structure in order to satisfy the objectives set at the beginning. It provides the feedback to the learner and thus support from the tutors. The applications of computer and related technologies are enormous and one is compelled to believe that “What one thinks is what one gets”. Unlike the saying of yester years: “What you see is what you get”.

16.8 UNIT-END EXERCISES

1. In the Study Centre, organise a brainstorming session on “Benefits of Computer in Open Learning System” with the help of your teacher/counsellor. Write a report highlighting the major points evolved and their relevance/importance in the context of classroom teaching.
2. Search any two successful examples relevant to your classroom teaching-learning in the computers (Internet). Discuss their relevance with your colleagues/fellow trainees and prepare a report.

16.9 ANSWERS TO CHECK YOUR PROGRESS

1. Future schools will go electronic in a big way. Remote learning will be the trend of tomorrow. It will be a wireless world without restrictions of time, place and pace.
2. A system where student has freedom and choice of how to learn, he is supported with the multimedia learning materials and tutors do not teach but create an effective learning environment.

4. It is non-linear as learners learn by exploring. The process is essentially not “structured”. The individualisation thus makes it more convenient for the learner to set his pace and navigation according to his own needs.

5. Because teachers collaborate with the learners to create online resources. The teacher becomes a facilitator and work the students to help them find and analyse resources.

6. There are no fixed answers.

7. There are no fixed answers.