

Distributed Learning Sequences for the Future Generation

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DISTRIBUTED LEARNING PLATFORM

Distributed learning can be conceived as a means of providing learning opportunities beyond the boundaries of the traditional education system, through utilization of an available range of information technologies. Distributed learning sequences comprise e-mail, Internet, WWW, videoconferencing (virtual conferencing), groupware, newsgroups, simulations, e-groups, chatrooms, and interactive and instructional software utilities. A distributed learning platform facilitates a learner-centered educational paradigm rather than a tutor-centered system, and promotes interactive learning, where the learner can initiate the learning processes.

According to Wilson (1994), four factors should come into play in developing a more efficient and effective learning environment: cognition, collaboration, communication, and computing. In this system the learning environment exists among a dispersed student population structured according to learner needs by integrating transformation in traditional institutional functions. Learners and educators can enter into the learning platform irrespective of time and location.

Three important parameters have gone through rapid transformation in the distance education system. These are teacher (termed as educator), classroom (independent of place and boundary), and the time or duration of a class period (elongated as per the need).

- **Educator:** The educator acts as the designer of the learning platform, from where contents can be accessed in a diversified manner as per need of the learners.
- **Place:** Not an important element in this learning system. Even tutorials can be replaced by virtual classrooms, and a class is made up of a virtual community of learners.

- **Time:** The most variable parameter in this respect, where the class time is not restricted to a specific duration of period. Flexibility of length of the learning sequences has made this process more popular to the learner, where they can expand or contract their schedules to fit into their learning schedules and learning goals.

In the traditional approach, students are staying at the outskirts of the teaching system and most of the time communication is unidirectional (see Figure 1). But in open learning systems, learners are located at the center of the system, and most of the communications are bi-directional and interactive (see Figure 2).

Existing Distributed Learning Providers

Computer-mediated communications make the teaching and learning process independent of time and space. Commonly used distance education tools are: printed materials, electronics materials, teleconference, videoconference, radio, television, fac-

Figure 1. Communication links of a conventional education system

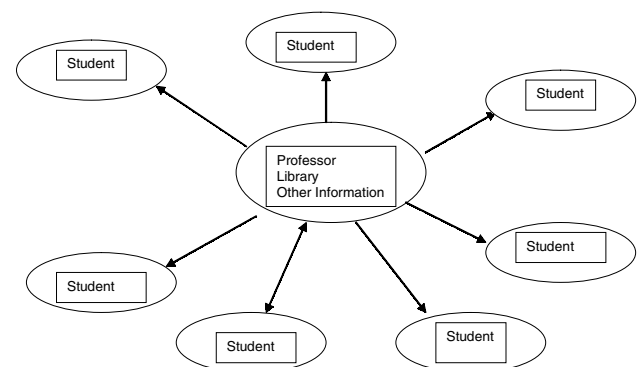
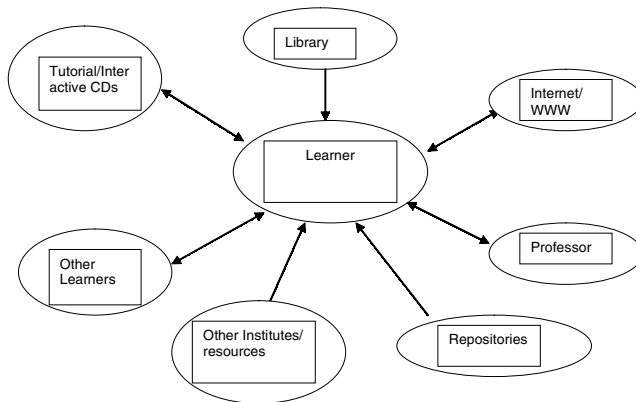


Figure 2. Communication links of a virtual learning system



simile, e-mail, newsgroups, the Internet, online chats, specialized software, and so forth (Murshed, Karmakar, Rahman, & Rahman, 2000).

There are a few distance learning providers that can be designated as the leaders in providing distance education for many years: Open University of United Kingdom, Open University of Hong Kong, Indira Gnadhi National Open University of India, Sukuthai Thamathirat Open University of Thailand, Bangladesh Open University of Bangladesh, Allama Iqbal Open University of Pakistan, and Open University of Sri Lanka are a few that serve as initiators in establishing the distance education platform for open learning systems.

Many highly reputed international universities such as Adelaide University, Athabasca University, Carnegie Mellon University, Deakin University, Keio University, Harvard University, McGill University, and the University of Wisconsin are among those in the traditional education system that have adopted learning processes in open and distant mode.

Through an organizational approach, the Commonwealth of Learning (CoL), International Center for Distance Learning (ICDL), and International Council for Open and Distance Education (ICDE) are furnishing a common platform of meeting specific needs for an open learning community. However, a repository of contents in regional form is non-existent. In the traditional education system, the Asian Institute of Technology and the Asian Institute of Management offer excellent contributions to society. But similar approaches are missing for an

open learning system. A regional institute can be provided logical supports to be transformed into a regional open learning repository.

Technologies in Distributed Learning Process

Easy accessibility has allowed educators and learners to explore the Internet as a platform of distributed learning and a vehicle of electronic communication with enormous resources. The Internet can be viewed as an elaborate model for the distributed learning environment concept. The TCP/IP communication standard has generated a highly functional workplace for cross-platform software utilities. Moreover, most of the utilities are of open source platform and run on fairly low-tech machines. This has expanded the open learning population by providing better access at lower cost. Also, Internet tools such as file transfer protocol (FTP) are being used to transport learning modules across geographically distributed servers at minimum bandwidth provision and technical effort. Using appropriate technology, Web-based multimedia technology would be cheaper and more interactive at the front end, accumulating all acquired expenses (Rahman et al., 2000).

Four technical parameters are of prime concern in a distributed learning platform: network infrastructure, file server, support servers (e-mail, e-groups, newsgroups, chat), and Web server.

In distributed learning, every learner must have easy access to network infrastructure and the Internet. To support it, the network should be robust at high traffic and diversified data flow. Interactive multimedia-based courseware sometimes demands extended bandwidth, which is often difficult to satisfy in a developing country's context, where high-speed data is still not available to most of the consumers. To address this problem, off-line interactive multimedia CDs are becoming popular.

File servers act as repositories of learning contents and resources. They must be reliable and secure, in addition to the requirement of gigabytes of cheaper storage facility. By the blessing of technology upgrades, this essence of file server is not a problem any more, except logging of immense numbers of simultaneous users may create problems. Many open source software are now available to

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