

Third Wave Changes: The Role of Information and Communication Technology (ICT) in the Definition of Librarianship

Faezeh Sadat Tabatabaee Amiree
MA librarianship student
Shahid Chamran University of Ahvaz
Ahvaz, Iran

Bentolhodah Khabbazan
Librarianship specialist and Masoume University Library Supervisor

Introduction

A scientific revolution began in the 1950s, bringing what have been called “third wave changes.” Science and information technology brought innovations and inventions with increasing speed. One of the fields affected by information technology is education, a field that had changed less than some like medicine. Third wave changes brought fast, current, cheap, and reliable tools to education.

Digital education has not only effected teaching and learning but has also had an influence on supporting services (Galusha 1997). That includes libraries and librarianship.

The definition of librarianship has changed and developed because of changing methods of library science and services. These changes have affected library users, bringing a new pattern to librarianship (Watson, 1992). The library is an essential component of an education system, and a lack of information sources will cause a decline in the quality of education (Mabawonku 2004). Designing quality digital education includes quality support services, because “libraries and information centers have a very important role in increasing the quality of digital education programs” (Sacchandand, 2002)

In Iran more attention has been paid to developing digital education with less attention to support services.

The Role of Information and Communication Technology (ICT) in Defining the Purposes of Distance Education

The increasing need for education, limitations on access to information centers, economic problems, a lack of experienced experts, and the costs of education brought about the development of new delivery methods for instruction. There is a growing need for methods that are economical, high quality, and suitable for use by large populations. The meaning of “literacy” is being able to read and write, but as Alvin Toffler has said, in the 21st century, an illiterate is not one who cannot read or write but one who cannot teach or learn.

Rapid changes in ICT have made the world face this new meaning of illiteracy and examine education requirements. The need for widespread information and computer literacy call for new teaching methods. Digital education: remote or distance education delivered online, is a way of solving this problem. Remote education systems require technology that provides access to information and

education without limits on time or place. In such an atmosphere anyone can learn according to their individual needs and abilities. Remote education systems attempt to:

- increasing the quality of learning
- reducing the time of attaining educational goals
- increasing efficiency
- increasing the independence of users and flexibility of education
- reduction of costs without effecting quality
- eliminating limitations on time and place (Kiani 2007 p:71)

Digital Education Benefits

Methods of presenting subjects

Learning and studying at any time, more subjects for students to choose from (Cantoni, Cellario, Porta, 2003. p. 338).

Communications between teacher and student and other students

- No requirement for physical presentation of student or teacher.
- Easy communication with several options

Management

Better options for supervision and control

Access to information sources

Access to digital libraries and web search with resources always available

Changing the vision and knowledge of users

- Supporting a large number of students in a class.
- Increasing creativity developing and supporting education.
- Managing information instead of saving information.
- Increasing public literacy
- Methods of learning
- Users important role.

Economy

- Reducing costs in comparison with traditional methods.
- Most of these students have career and income and this will affect the economy of the country.
- Reducing the costs of institutions and buildings.

Methods of Digital Education:

Advances in technology during these years have made changes in these methods. The following are a few of the methods of digital education:

Interactive user interfaces

Software for managing courses was first used as a supplement to face-to-face instruction but has now become an important independent method.

Video conferencing

This method allows interaction that is similar to face-to-face.

Satellite system

In this remote method, a screen, a computer connected to the network, and a projector are used. These can erase boundaries, hours, distances, and scientific and technological differences between countries. This method is used in international scale.

Web-based methods

Web-based learning does not require students and teachers to be physically present. There is no need for travel or travel time. It can use multimedia and students can manage their own learning.

Digital Education and Libraries

An information explosion and advances in ICT have influenced librarianship. Librarians should be open to the idea that librarianship is not just working in and managing a library. Today libraries can change the world, and can be the source of new educational services. No machine can replace libraries. Course management systems include provision of library services. Digital libraries are necessities for virtual education and remote education is impossible without them. Digital libraries include different collections such as journals and magazines, books, and websites.

Bringing together libraries, information technology, and education has made a union that brings economy. Education systems are under pressure to reduce costs. Information technology has helped do that. Virtual libraries and digital education systems have made fundamental changes in librarianship. Libraries have the duty of using new methods and providing new services to students. Watson (2003) divides library services into three main categories:

- Access to information sources
- Information literacy
- Methods of using information

Fatahi (2004) outlines principles for creating library service:

- Convenient access
- Speed in access
- Integration in access to information
- Quality of information and knowledge
- Updating information

Virtual libraries and digital learning

Teachers and students must be able to get information quickly and conveniently. Distance education requires virtual libraries. Virtual libraries can provide text, video, audio, and other formats for teaching and learning. Virtual libraries support digital learning. They collect and organize information and help the users to use the right information at the right time. (Schmitz, 2004)

New Professional Patterns

Digital education creates changing patterns for students, teachers, librarians, and others. This new pattern will increase the role of curators in this process. In a virtual library, librarians become curators who do not merely collect, organize, and lend material, but are also leaders, researchers, information gatherers and information analyzers. A virtual library curator is a powerful person in managing a great volume of data and providing convenient access to information (Husler 1996). Watson (2003) describes the curator characteristics and functions:

- Confidence that the offered information is needed
- Developing and keeping the quality of information sources
- Helping distance users learn library skills, study skills, and increasing information literacy.
- Guiding users in new references and subjects.
- Supporting scientific activities
- Discovering other institutions that can help the library
- Managing intellectual property and copyright

Watson also believes that the librarian should take part in distance learning systems to ensure that the virtual library is accessible and useful.

Technology is not the reason for distance education but is only an instrument, so technology skills and people skills are both essential.

History of Distance Education and Librarianship in Developed Countries

Distance education is not a new idea. Correspondence study was developed in the early 18th century. It has been common in library science since the 19th century. In 1985 a librarianship college in Wales accepted 15 students for a 3-year distance education Master's course in library science. Distance education for librarianship has been increasingly common since the 1980s. Sacchanand (1998) found distance education for librarianship in Australia, China, India, New Zealand, Japan, and Thailand.

Distance Education for Librarianship in Iran

Aboureyhan and Azad universities were the first Iranian universities with distance education programs. In 1986, Payam-nour University established a distance education program, although it has experienced some economic and technical problems. Librarianship has been taught in Iran for more than 40 years, but today there is no distance education program in librarianship, although there are 30 universities that offer librarianship.

In the recent years Iran International University has been providing infrastructure for distance education. In 2002 this university was designated as the first Iranian virtual university. After that, other universities such as Esfahan, Shiraz, Tehran, and Sharif have also instituted digital education.

Conclusion

Distance education has created new patterns for library services and librarianship services. Changes include:

- Virtual institutions that provide more convenience and rapid services for library science students.
- New relationships and communication among teachers, students, and librarians.
- Librarians in digital libraries have a very important responsibility in offering services for learners.
- Librarians need new skill in technology for better services.
- Libraries need new patterns for service to users.

Technology has transformed both digital and traditional education. All students in all countries do not have an equal chance to use these services, but technology has also erased the distance between students, teachers, and librarians.

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