

Emerging Technological Trends in Distance Education

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Abstract

Distance learning is one of the fastest growing areas of education in recent years. Despite the recent significant developments in the electronic networking world, particularly the recent global focus on the Internet, which provides major technical thrusts, other emerging technologies have also committed to changing the pattern of general education, with particularly intensifying distance education. The present study intends to explore the current technological trends in the field of distance education. The objectives of this study were to identify the emerging technological trends in distance education and to find out the effectiveness of emerging technologies in distance education. It was a theoretical study in which emerging technological trends in distance education were identified by an extensive review of studies and literature in the field. Major findings inferred from review were technology trends in the field of distance education include information and communication technologies, hybrid learning, asynchronous and synchronous media, learning management systems, social networks, mobile learning, digital libraries and the World Wide Web.

Keywords: technological trends, distance education.

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Introduction

Education can be explained as a resource of light in the darkness of ignorance. Higher education has greatly inspired the universe. There are three modes of education: formal education, non-formal education and distance education. In the distance education system, information depends only on the use of the media, since there are no regular face-to-face conversations and space and time gaps between teachers and learners, and the use of different media is responsible for bridging such gaps and promoting quality directives. The world has undergone profound changes, particularly in the area of scientific development and social change. In this context, distance education, as a multidisciplinary field, has responded to these changes, and it has been evolving and heading towards meeting this need. Therefore, as the needs of educators and learners evolve, it is important to understand the trends and problems in distance education in order to keep up with these changes (Berge, 2001). Distance education has become an alternative to the use of higher education institutions, as they expand access to higher education at the national and international levels. The mark is that technology is used to bridge the teaching gap between teachers and direct, immediate, physical contact students (Willis, 1993).

The world has undergone profound changes, especially in the area of scientific development and social change. One aspect of this is the way technology has become an important part of our lives. The impact on society as a whole is becoming increasingly apparent, and it is now highly desirable that technology be used for the proliferation of information. As a direct consequence of these expectations, education has undergone a parallel paradigm shift. Thus, the 21st century began with a shift in attitudes toward online education. Online learning is no longer a peripheral or complementary, but an integral part of the mainstream society. Our new understanding of the nature of learning influences the definition, design, and delivery of education. Changes in educational patterns lead to new models of education provision, new areas of learning, new learning principles, new learning processes and outcomes, and new educational roles and entities. Distance education, as a multidisciplinary field, has responded to these changes; it has been and continues to develop and orient itself to meet this need. It is therefore vital to keep abreast of the evolving needs of educators and learners and to understand and gain insight into the trends and problems of distance education (Kinley, 2001).

Concept of Distance Education

Distance education has become a very important way of learning. This is because in distance education issues like distance and time as conventional learning disabilities has been overcome. The term "distance education", as defined by UNESCO (2000), represents a pathway to open access to education and training, free from the constraints of time and place, and provides flexible learning opportunities for individuals and groups of learners. Peters (1973) defined distance education as a means of imparting knowledge, skills and attitudes, rationalizing it through the application of division of labour and organizational principles, and through the extensive use of technical media, in particular for the reproduction of high quality teaching materials, making it possible, while guiding a large number of students, no matter where they live. Farrell (2003) argues that distance learning includes flexible learning, online learning, e-learning and virtual education.

Distance learners and their Needs

In the distance education system, students who receive education are called distance learners. Distance learners are the majority of adult students who want to continue their work and study in family tasks; they need a flexible and accessible educational model that can only be accessed through a distance education system. Distance learning students are groups with certain defined characteristics. They may be far from their educational institutions, not only because of body distance, but also because of time, such as in the case of students living in another time zone and language. Many are full time employees and have family to care. Most of them are mature students and have not studied for a while, which may mean they need extra help in their learning. Students may need a lot of support and encouragement, as they may sometimes feel isolated (Willis, 1993).

Emerging Trends in Distance Education

The new trend in education is technological innovation, the use of the latest software and new teaching methods. Because of the rapid changes in methods and technology, distance education has also changed, so all the new concepts, the latest style, teaching methods and new technologies to promote teaching learning process is a new trend in

education. Distance education system teaching is more challenging than the formal education system. According to Natarajan (2005) "a method of teaching students off-campus, in a far-off and flexible timetable, largely self-taught, but with regular guidance from teachers, students may or may never face each other." In this age of science and technology, educators should not dismantle trees in order to produce print-based materials for the reader, because the purchase of these materials is expensive and there is a high risk of miscommunication in asynchronous media. On the other hand, the use of the Internet and state-of-the-art technology can be cost-effective, and there is less chance of erroneous communication in a synchronous manner. Therefore, bearing in mind this, most of the emerging trends in distance education are designed in a synchronized manner with the help of network technology and software (Rahman, 2014).

According to Kinley (2001) "Today focus on distance education has shifted to web-based technology and Internet-based delivery." According to Cetron (2003), one of the most obvious trends affecting distance education is technological advancement. Powerful, high-speed network connections continue to expand as computer speed doubles, costs are reduced, and faxes, picture phones, replication and other modes are merging and becoming available at lower prices. All of the latest technology used to assist the teaching and learning process is the emerging trend of education. Distance education systems cannot ignore emerging method trends; because promoting learners is a major requirement for distance education, and by using emerging technological trends, distance learners can be best promoted. The use of different emerging methodological teaching processes may be more flexible, more comfortable, and more convenient for teachers and students (Harris, Smith & Carry, 2001).

According to Holmberg (1986), distance learning will support the motivation of students and improve the fun and effectiveness of learning if provided in a way that makes research relevant to individual learners and his needs. The emerging trend here means technological innovation, the use of the latest software and new teaching and learning processes in teaching and distance learning. Because of the rapid changes in methods and technologies, distance education has changed. All new concepts, up-to-date styles, teaching methods and new technologies that facilitate the learning process of teaching are new methodological trends in distance education. Over the past decade, the field of distance education has changed dramatically. Distance education, structured learning, where students and teachers are separated by place, sometimes separated by

time, and are currently the fastest growing forms of domestic and international education. Special forms of education, once considered to be the use of unconventional delivery systems, are now becoming an important concept in mainstream education. Concepts such as learning space, flexible learning and blended learning systems, such as e-learning connectivity, have broadened the scope and changed the nature of early distance education models. Network and Web-enhanced courses appear in traditional programs and are now being added to anytime, anywhere to educate feeding frenzy (Rahman, 2014).

Noreen and Hafeez (2012) conducted a study on the use of emerging methodological trends by distance learners. The study population included MS / M.Phil students. The results indicate that distance education systems have changed due to emerging technology and methodological trends. All new equipment and technologies have a positive effect. By reducing the distance through face-to-face conversations, students now have many sources of information and their textbooks. The conclusion is that all distance learners need to adopt new methodological trends. Some students are already using emerging technologies. All students believe that the use of emerging methods contributes to better academic achievement, but that distance learners lack the skills to use the latest software.

Hybrid Learning

Another important trend in recent years has been the emergence of "hybrid" or "blended" approaches that combine online activities and face-to-face interactions (Graham, 2005). According to Purnima (2002), the term hybrid learning is used to describe a solution that incorporates several different delivery methods, such as collaboration software, Web-based courses, and knowledge management practices. Hybrid learning is also used to describe learning that mixes a variety of event-based activities, including face-to-face classrooms, real-time e-learning, and self-learning. A study by the North American Online Learning Committee predicts that a mixed approach may become the dominant teaching model and more prevalent than traditional, purely face-to-face classroom instruction or teaching that is completed entirely online (Watson, 2008).

Information Communication Technology

New communication technologies provide a creative and stimulating way to present information and provide opportunities for interaction

(Leach & Moon, 2002). According to Murali (2009) in the distance learning system learners are remote to institutions and in large-scale. It is difficult for learners to access the institution on a daily basis to obtain support available in the conventional system, and it is even difficult for the institution itself to provide various services to learners at different stages of the student learning life cycle due to the limited available human resources. ICTs are the primary resource for overcoming these constraints and are a set of technologies that provide support services at different stages of student learning in distance learning systems. A study by Rahman (2014) focused on the important role of information and communication technologies in distance education.

Asynchronous and Synchronous Media

Asynchronous online systems allow participants to interact with each other, not all participants online at the same time, including blogs, wikis, and discussion forums. In contrast, synchronization systems require everyone to be involved, including chat rooms and video conferencing. Face-to-face communication between instructors and distance learners on the Internet is a new methodological trend in e-learning, where computers with Internet facilities are needed and they can talk to each other, and students can learn from teachers, obtain guidance and instructors can instruct the learner. It not only allows students to communicate in real-time to discuss courses of course, but it allows easier access to the teacher to communicate and clarify the subject of discussion. Dede (2003) studied the experience of distance learning students in learning asynchronous and synchronous interactive media, and students reported that synchronous media helped them better understand and interact with their classmates. Further research reported that their distributed learning experiences positively influenced their participation and learning.

Learning Management System

The Learning Management System (LMS) is a software application for managing, documenting, reporting and tracking guidance programs, classroom and online activities, e-learning programs and training content. The learning management system has several definitions, and the basic description is a software application that automates the management, tracking, and reporting of training events. It provides educational content and resources for distance learners. Distance learning students have

access to learning content and management wherever they are (Ryann, 2009). Many educational institutions have implemented versions of learning management systems such as WebCt, Moodle, Blackboard Learn and e-Portal, providing users with an exciting step into the next generation of teaching and learning platforms that are new social learning and teaching tools to provide students with more logical, visual impact and positive learning opportunities to help them maintain contact with their educational experience. In their study, Nair and Patil (2012) reported on the positive impact of learning management systems on student learning. Another finding of the study was that students from previous academic years were less aware of LMS than students in the current academic year.

Social Networking

In the field of distance education, social networking sites are playing a large role, through the use of these services; students can easily communicate with their mentors and peers, and can get a lot to solve their problems. A social networking site is defined as a website that provides an opportunity for a user to increase the level of communication by connecting to each other and sharing personal content as features of the basic characteristics of the online community. Facebook, Twitter, LinkedIn, Skype, Twitter and Oovoo are common social networking services that play an important role in reducing the isolation of distance learners (Buss & Strauss, 2009). A study by Ozmen (2014) shows that students have a positive attitude towards using social networking sites and distance learning applications that have a positive impact on the quality of communication between teachers and students.

Mobile Learning

Mobile technologies, such as mobile phones, have great promise for distance education as a cognitive delivery tool to enhance interactive collaborative learning while addressing the challenges of student isolation. The term mobile learning refers to the use of mobile and handheld IT devices, such as personal digital assistants. Mobile learning via SMS helps to reduce the distance between mental and communicative spaces that are often confronted by distance learners in geographic distance and time separation (Moore, 1997). Yousaf's (2007) study on the effectiveness of mobile learning has shown that promoting mobile

learning can improve distance learning by enhancing communication among distance learners, facilitators and support staff.

Digital Libraries

The digital library provides answers to most information access questions for distance learners. A digital library is a collection of documents in organized electronic form, available on the Internet or on CD-ROM. Depending on the specific library, users may be able to access magazines, articles and books, papers, images, sound files, and videos. The digitization of academic materials is one of the many initiatives taken by the global distance learning community to facilitate the wide access and availability of such materials. Rezaei (2009) conducted a study on the use of digital libraries in the distance education process from an expert's perspective in order to investigate the quality of learning, realize the possibilities of information, reduce educational costs and improve the scientific level of students, the results show that the effective use of digital libraries in the distance education process is 95%.

World Wide Web

According to Harris, Smith & Carey (2011), web 2.0 technology provides the power to evolve as academic professionals modify learning techniques and methods. Web 2.0 can theoretically develop learning experiences by promoting group reactions, obtaining outside experts, or by encouraging and shaping communities of practice. Some examples include web-based communities, hosted services, web applications, social networking sites, video sharing sites, wikis, and blogs. It facilitates distance learners and teachers to enjoy a more vibrant educational experience at a lower cost and with more effective face-to-face learning. According to Simons (2005), Web-based learning is migrating to web 2.0, a two-way infrastructure medium that has become popular in distance education because it gives learners the prospect of communicating with mentors and teachers. Therefore, this means that Web 2.0 is a two-way media, representing the next stage of Internet use. All new devices and technologies have a positive effect and take time to learn new equipment and the use of the latest software so that learners of distance learning can be easily accessible. Instructors should also learn about the emergence of teaching needs and use of upcoming technologies to meet the needs of distance education systems. Gilani, Zaman and

Ambreen (2012) discuss the effectiveness of Web 2.0 technology in distance learning. The study is essentially experimental; study population consisted of 89 students enrolled in the M.Phil education program. The results show that the Web 2.0 tools can improve the average learning performance of the distance learners more effectively than the ordinary ones, and the network skills are more helpful to improve the average problem solving ability of the distance learners than the traditional ones.

Research Questions

The present study was designed to find out answer of the following questions:

- What are the emerging technological trends in distance education?
- Do emerging technologies are playing effective role in distance education?

Objectives

- To identify the emerging technological trends in distance education.
- To find out the effectiveness of emerging technologies in distance education.

Statement of the Problem

The present study intends to explore the current technological trends in the field of distance education.

Methodology

Present study was theoretical typology study in which relevant existing literature on the topic has been reviewed and related studies are targeted by a comprehensive search of publicly available literature. In order to study the emerging trends researcher also consulted experts on distance education, distance education teachers and students.

Discussion and Conclusion

Distance education is likely to change with the development of technology and learning science, which opens up new areas of research in a very short period of time. In addition, the latest developments in

open educational resources and online courses have brought a new dimension to the field, which has brought its own impetus. It is therefore necessary to reflect the field of distance education in order to be able to understand and explain new trends, namely, distance education trends. The main purpose of this study is to analyze research articles in this field so as to be able to explore current trends in the field of distance education. This study aims to identify emerging trends in the field of distance education. As can be seen from the above literature, teachers and students in the field of distance education has been using many new technologies. Under developing countries and developing countries face some problems due to the lack of access to modern technology, but with the advent of technology, they also use modern tools and technologies in distance learning. Within the scope of the study, the latest emerging technologies used by students and teachers in distance education are highlighted. As a result, it is clear in the literature and research in this field that with the rapid changes in the technological world of the changing world and distance education have changed by the adoption of new technologies and tools, new technologies and methods are replacing the old traditions Technology at very fast pace. Investigation in this study shows that learners become motivated and active through the use of hybrid learning and social networking. Technology trends in the field of distance education include information and communication technologies, hybrid learning, asynchronous and synchronous media, learning management systems, social networks, mobile learning, digital libraries and the World Wide Web. Technology facilitates efficient and efficient use of distance learning processes. The research shows that the emerging technology trends of distance education play an effective role in the process of teaching and learning (Harries, 2001; Leach, 2002; Cetron, Dede, 2003; Graham, 2005; Natarajan, 2005; Yousay, 2007;Murali, 2009; Gillani, 2012; Noreen, 2013; Ozmen, 2014).

Suggestions

After reviewing the literature regarding emerging technological trends in distance education generally, following suggestions are put forth:

- Distance learning institutions may take steps to organize a specific website for students so that they can easily communicate with their peers and mentors.
- Social networking sites like Facebook, Twitter and LinkedIn may be used to develop a better relationship between peers and academics.

- For video conversations students and teachers may use Oovoo and Skype.
- Alert text messaging service on cell phones of the students may be started along with the letters.
- There is an urgent need to provide distance learners with the use of digital libraries in a quick and easy way so that they can easily get help from books and articles to complete assignments and research.
- It is further recommended that students use the Internet and the latest software to adopt new methods and trends.
- It is suggested that further research could be conducted to investigate the effectiveness of emerging technologies for different levels of distance education including administrative, teachers and students.

References

- Berge, Z. L. & Mrozowski, S. (2001). Review of research in distance education, 1990 to 1999. *American Journal of Distance Education*, 15(3), 5 - 19.
- Buss, A., & Strauss, N. (2009). *Online communities' handbook: Building your business and brand on the web*. USA: New Riders Press.
- Cetron, M. J. & Daview, O. (2003). *50 trends shaping the future*. Special Report Published by the World Future Society.
- Dede, C., Brown, T. & Whitehouse, P. (2003). *Designing and studying learning experiences that use multiple interactive media to bridge distance and time*. In: Vrasidas, C. & Glass, G. V. (editors). *Distance education and distributed learning*. London: Eurospan.
- Farrell, G (ed). (2003). *A Virtual University for Small States of the Commonwealth*. Vancouver: The Commonwealth of Learning.
- Gilani, S., Zaman, T. & Ambreen, M. (2012). Effectiveness of Web 2.0 Technologies in Distance Learning. *Pakistan Journal of Education*, 29 (1)
- Graham, C. R. (2005). Blended learning systems: Definition, current trends and future directions. In C. J. Bonk & C. R. Graham (Eds.), *Handbook of blended learning: Global perspectives, local designs*. 3- 21. San Francisco, CA: Pfeiffer.
- Harris, Smith & Carry (2001). *The Practice of web technologies in Teaching*. Harlow: Pearson Education Ltd.
- Holmberg, B. (1986). *Growth and structure of distance education*. Kent, England: Croom Helm.
- Kinley, E. R. (2001). Implementing distance education, the impact of institutional characteristics: A view from the department chair. A Dissertation at the University of Nebraska – Lincoln.
- Leach, J. & Moon, B. (2002). Globalisation, digital societies and school reform: realizing the potential of new technologies to enhance the

knowledge, understanding and dignity of teachers. 2nd European Conference on Information Technologies in Education and Citizenship: a critical insight. Barcelona.

Moore, M. (1997). *Theory of transactional distance*. In D. Keegan (Ed.), *Theoretical Principles of Distance Education*, 22- 38. New York: Routledge.

Murali, M. (2009). Web-enabled User Support Services System in Distance Education.

Nair, S. C., & Patil, R. (2012). A study on the impact of learning management systems on students of a University College in Sultanate of Oman. *International Journal of Computer Science*, (IJCSI) 9(2), 379 - 385.

Natarajan, M. (2005). Innovative teaching techniques for distance education. *Communications of the International Information Management Association*, 5 (4), 73 - 79.

Noreen, Z. & Hafeez, A. (2013). A study on adopting emerging methodological trends by distance learners. Paper presented at 3rd International Conference on Business Management Feb 2013 at University of Management and Technology, Lahore.

Peters, O. (1973). Distance teaching and industrial production. A comparative interpretation in outline. In Sewart, D., Keegan, D., & Holmberg, B. (Eds). *Distance Education: International Perspectives*, London: Croom Helm.

Purnima, V. (2002). http://www.asttd.org/LC/2002/0802_valiathan.htm

Ozmen, B. & Atici, B. (2014). Learners' views regarding the use of social networking sites in distance learning. *The International Review of Research in Open and Distributed Learning (IRRODL)*, 15(4).

Rezaei, G. R. (2009). Survey the role of using digital library in distance education process, in distance education centres of province of Kermanshah from the perspective of specialist in education year of 2008- 2009. MA thesis, Azad University of Kermanshah, Iran.

- Rahman, H. (2014). The role of ICT in open and distance education. *Turkish Online Journal of Distance Education (TOJDE)*, 15(4), 162.
- Ryann K. Ellis (2009). *Guide to Learning Management Systems American Society for Training & Development (ASTD)*.
- Simons & Solomon (2005). Social Aspects of Web Learning in Education. *Review of Research in Education*, 23, 1-24.
- UNESCO (2000). World development report 2000. Paris: UNESCO.
- Watson, J. F. (2008). Blended learning: The convergence of online learning and face-to-face education. http://www.inacol.org/resources/promisingpractices/NACOL_PP-BlendedLearning-Ir.pdf
- Willis, B. (1993). Distance education: A practical guide. Englewood Cliffs, NJ: Educational Technology Publications.
- Yousaf. M. I., (2007). Effectiveness of Mobile Learning in Distance Education. *Turkish Online Journal of Distance Education*.8(4), 114 - 124.

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