Evolution and Significance of Distance Education

Randhir Singh¹*, Dr. Sindhu Bala² ¹ Research Scholar, Dept of Education, OPJS University ² Assistant Professor, Dept of Education, OPJS University

Abstract- Distance education has its access to one and all within a very short period of time cutting of all barriers. Distance education is also essential to attain the cherished goal of the nation for univeralisation of education. Distance education is used to educate people of different ages and to educate courses from a wide range of discipline or areas both vocational and non-vocational. Distance education is essential from the point of view of self-learning and self-improvement of an individual who has been deprived of receiving proper education. The varied needs of the students are better fulfilled by distance education rather than by formal system of education. The desire to improve one's own qualification and knowledge without disrupting one's present employment can be made possible by distance education. Distance education leads to self-learning and self-improvement. Here one can learn according to his own pace. It is a very flexible educational system which is not limited by time and place restriction and suits to the varied needs of the students of different age groups. Distance education makes higher education accessible to all sections of society. It is economical in terms of time, energy and money.Distance Education can satisfy the educational needs of learners with different social and occupational backgrounds. It is necessary, however, to verify from time to time whether it has provided the desired access to the groups for whom it was primarily intended. Moreover, the changing needs and aspirations of anticipated learner groups in particular and society in general can influence the planning and management of distance education system with a view to making the system socially responsive. Therefore, research is needed to identify the needs of distance learners as well as the future target groups, keeping in view the general course of socio-economic development of the country. Since distance learners belong to a heterogeneous background in terms of age, experience, socio-cultural, educational and occupational backgrounds, sustaining their motivation to continue with courses till completion is a crucial issue. Other factors like personal, occupational, institutional and instructional do affect learners' adjustment with studies in varying degrees. Identification of learners' environmental factors affecting their studies is also an area of research in distance education.

Keywords- Significance Of Distance Education, planning and management of distance education system, socio-cultural, environmental factors

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1. INTRODUCTION

The use of visual, auditory, audiovisual and multimedia materials can be very effective from distance education. In the form of text, drawings, photos, graphs and models and like, visual content may be available. Auditory facilities are a speech or oral presentation, music, various sounds, etc. Contents of audiovisual material, usually in TV shows, films or videos, combine visual and auditory content. Multimedia, combining and playing text, pictures, sound, animation and video before using very distinct means, although mostly used multimedia, data storage or the Internet, recently for playback of multimedia files. Multimedia in distance learning is extremely important since the lecturer usually does not physically present themselves to the participants, to motivate them to learn and to explain the content of students with difficulty. In computer science and technology, the beginning of the new

millennium is a very dynamic period. The digital world becomes a support for everyday life, but it is also the fundamental factor in globalisation. On the other hand, computers can be recognized, on the one hand, as a leader in the world economy's growth. New technologies are constantly being introduced and almost as soon as they occur become obsolete. On the other hand, the rapid development of computer discipline has a significant impact both on education content and on education methods. This makes networking and web, for instance, a fundamental foundation for informatics and, at the same time, one of the main pedagogical resources, changes in the education process, not only in informal and other fields. Progress in multimedia technology in personal computers, networking, and especially internet and web technology has created new opportunities for transformation of significant educational processes and systems, particularly in

the developed world and in Serbia. Although the globalization of information technology makes it possible for students to visit far-flat museums, take electronic trips to far-away archeological sites, and communicate through videoconferenced communication, the school requires students to learn critical thoughts, social behaviour, performance, and responsibility.



Figure 1: E-learning

Without the significant use of ICT, distance learning cannot be imagined today. However, several different software systems can create a negative initial attitude to distance learning on both sides, which will enable potential teachers/instructors and online students. Lecturer / instructor should know all kind of software for use in teaching (software). Teachers / instructors for each software are available for instructions on the successful implementation of special teaching methods for distance learning using appropriate technology. Training for the practical use of all software necessary to carry out elements of online learning as provided in a learning scenario is recommended at least once and preferably several times. The next important aspect of technical support for quality (requires teachers/instructors to be hardware, software and support staff) will facilitate online education (for example, audio/video recording, data digitalisation, converting to the selected format) and the adaptation of the appropriate configuration software, technical difficulties taking account of the hardware being used (h) For students to participate in different kinds of technology-supported remote education activities, technical assistance should be organized easily. Students should use theological methods to enable them to use on-line educational materials and a range of communication activities. They should also use them theologically.



Figure 2: ICT and distance education

In the past two decades, there has been a significant increase in the number of universities worldwide offering distance education programs and most countries have experienced an increased growth in distance learning. Literature on trends in distance learning, evolving delivery methods and emerging technology is comprehensive. Still, research in practice, design and models has surpassed rapid technological growth in this area of education. One distance learning researcher said "Because technologies such as delivery systems are so important for the growth of distance education, research reflects not driven practices." This form of learning has evolved from a form of specialized education to a "important concept in general education." It is also explained.

One reason why distance learning, particularly in higher education, has become and remained so prevalent is that different studies validate its practice - which shows no substANtial difference in learning results between traditional students and distance learners. This was shown in a recent study published in 2005 when comparing students who received exactly the same content via one of three installations: the traditional classroom, online course management software and a CD-ROM. In the student satisfaction between the three groups, the authors measured no significant change. A 20-year meta-analytic, released last year, argued that 70% of students who studied distance learning in traditional classes actually outperformed their students' counterparts. Clearly, distance training is here to be a form of education and it keeps changing the higher education landscape. The use of two-way electronics as a central tenant was a definition of remote education as early as 1990. Almost all current distance trails, including those extending to the most remote parts of the world, are certainly incorporated into their implementation by using communication

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technology. Furthermore, it is now common for campus students to communicate with their teachers outside the classroom via email or Internet-based course management software. In the last ten years, students who attended university will likely have been accompanied by CD-ROMs for at least one of their textbooks. Educators now have more options to offer distance courses than ever before. Most of these technologies are already combining to foster learning, commitment and retention for students. As mentioned, model research has not kept pace with ongoing developments; however, a thorough review of the different available technologies is a good starting point for institutions that seek to increase their effectiveness in distance training and online education. The modes of delivery are diverse and the selection of programmes, including geography, student characteristics and government support for such programmes, will depend largely on the national context of the University. Given the potential of remote training to reduce cost and increase revenues, it is also important to institutions to continuously seek to improve and increase students' skills in this field, otherwise they might be left out of traditional higher education at the classroom.

2. DISTANCE EDUCATION TECHNOLOGIES AND IMPLEMENTATION

The earliest forms of distance education were little more than self-taught courses wherein course materials were delivered to students via postal mail and assignments were returned to instructors along the same route. Correspondence courses of this type still exist and are an option for students that do not have a reliable access to internet or telephone. However, even they can now be delivered on a CD-ROM (containing either audio files or some other computer-based media, such as PDF or PowerPoint).

Table 1: Major Distance Education Technologies

Technology	Advantages	Disadvantages
Print	Materials Inexpensive Portable High comfort level Readily available	No interactions Limited sensory involvement Requires reading skills Time delay
Voicemail	Low cost Easy to use Increases interactions	Length may be limited No visual cues May involve toll charges
Audio files/CD	Inexpensive Easily accessible Easily duplicated	No visual cues No interaction
Audioconference	Inexpensive Easy to set up	No visual cues Requires hardware
E-mail	Flexible Interactive Convenient	Requires hardware Software variations
Online Chat	Real-time interactions Instant feedback	Requires similar software Must be scheduled Requires hardware
Web-based Education	May incorporate multimedia Worldwide access Interactive	Requires computer Requires Web access May be slow
Videotape/DVD	Inexpensive Easily accessible Easily duplicated Audio and visual elements	Complex to record No interaction Requires hardware
Satellite Videoconference	High realism May be interactive	Expensive hardware Must be scheduled Usually one-way only
Internet Videoconference	High realism May be interactive Relatively inexpensive	Must be scheduled Small windows May be slow, jerky video
Cable/Broadcast Television	Easy to use Easily accessible May be videotaped Includes audio and visual	High production costs Requires hardware No interaction Must be scheduled

Given the importance of technology in modern distance education, it is important to understand the strengths, weaknesses, and potential of technologies currently in use. Such comprehension will enable administrators to make more informed decisions when it comes to course design and implementation.

> Print Materials

Although educators in distance learning are offered numerous new options, printing remains an important part of most courses. In 2004, only 24% of distance students had high-speed internet at home. Although this number has certainly risen in the last six years, open- and remote training programmes, if the print material is completely removed, could exclude potential students. Printing materials could either be the primary source for instruction or as an additional source i.e. textbooks or other printed readings required. In this case, the student questions, assignment submissions and instructors feedback could be communicated via email or other electronic means. Printed guides for studying distance learning have been identified as key resources, although other media are primarily used for the content delivery. Such additional printing materials may be disseminated via regular email or even a website for courses.

Advantages of Print Materials

- **Extremely portable:** Print materials can be used in any location.
- **High comfort level:** Most students are very comfortable using print materials to learn.

- **Cost effective:** Print materials can be created and duplicated with little expense.
- **Readily available:** Many distance learning courses can take advantage of existing textbooks, thus saving the time and expense of creating custom materials.

There are several advantages to print media that are likely related to why it has remained, and will continue to remain, an important resource for distance education. Once printed or distributed, students are able to bring these hard copies with them anywhere they go. This allows for study at any number of locations. This can be important to distance learners since many of them choose distance education due to responsibilities that prevent them from being at the same place at the same time on a regular basis. Print materials also do not require batteries or advanced technology to support their use (other than a reading light), and by the time they reach higher education most students are accustomed to using print materials for learning.

Disadvantages of Print Materials

- **No interactions:** Print materials do not generally provide built-in interactions. Additional technologies, such as e-mail, must be supplemented.
- **No audio/visual elements:** Print materials are static and are not appropriate for teaching languages and visual concepts.
- **Require reading skills:** If the learners are non-readers or language skills are required, print materials will not be effective.
- **Time delay:** It may take days or weeks for printed matter to travel between student and teacher.

Printed materials are limited in terms of what they can provide to a potential learner. Clearly they do not provide the opportunity in themselves for two-way interaction with the instructor or other students. Only certain content can be delivered effectively via print – language courses that require an audio component will require additional resources. Learners also need well-developed reading skills in order to be able to utilize print successfully. The time it takes to deliver materials to the student is something else that should be taken into consideration.

Guidelines for Incorporating Print Materials

- Distribute print materials well in advance: Although the mail system is generally quite reliable, issues may arise if the print materials are not distributed well enough in advance.
- Include clear directions for use: Students need to know exactly which print materials they are responsible for reading and the specified timeline.

- Require interactions: Print materials are inherently non-interactive. Therefore, you must design for the required interactions. In some cases, this may mean a specified timeline for e-mail messages, or a required number of postings to a list serve.
- Specify a timeline: Distribute a timeline for students to help them organize their study learning activities.
- > Audio Technologies

Another cost-effective method of enhancing a distance education course is to incorporate some form of audio or voice technologies into delivery. This can be as simple as a telephone with voicemail or as sophisticated as an audio conference.

Voicemail

When speech or interaction is not possible directly, voicemail is a very common contact mode. One resource shows that voicemail offers a lot of initiatives for distance learning. By means of voicemail students can leave teachers' messages irrespective of the time. Advanced voicemail systems allow trainers to leave messages to students in whole groups at once. In addition, this communication mode can replace the email of pupils without the Internet. The main benefits of voice mail are that the majority of people in developed countries and the ever-increasing numbers in less-developed countries have telephone access (or night). The length of the messages, however, is usually limited and a tollfree number is required for students who call from outside the area. Given these limits, voicemail is normally used to add additional delivery methods in a course.

Audio Files and CDs

CDs and Audio files represent another inexpensive resource that can be combined with other implementation techniques. Entire lectures can be delivered via audio files as well as panel discussions or instructions for the student. As one publication notes, "audio is especially useful in courses that require nuances of inflection, such as foreign languages, or those that are designed for non-readers." Though audio files are easy to create, duplicate and use, they are not interactive and do not provide visual elements that many students may need or want.

Audio conferences

Telephones are one of the most accessible technology in the world. As such, the efficient delivery of distance training can be essential for their use. A large number of students – even through a conference call at the same time – can be reached via phone instructors. Many students can interact with an instructor at locations with

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speech telephones under the supervision of the instructor. Many people can call a telephone-free number with advanced audio conference systems and what are called bridges and mainly attend classes (audible) or engage in telephony discussions. Again, audio conferences offer a viable option to foster interaction and sense of community for students who do not have access to the internet and the computer - something that researchers have emphasized as essential elements of an effective distance course. One thing is to note however that audio conferences are guite simple to set up and conduct; however, because of a lack of visual stimulation in the phone call, it may be difficult to retain the interest of students for a long period of time. Therefore it should not be too long to attend audio conferences for distance courses, and it is important to complement them in advance with the visual media.

Podcasts

Podcasts can be used to provide ease of access for students with Internet access and preferably a computer to digital audio and video files. Learners can set their computers to download new episodes automatically in an online series. For them that's very easy. They simply tell their software to subscribe to the RSS feed and automatically download the latest episodes (or posted files) to their computer. Then, vou can transfer these files to more portable playback technology like CDs, audio, iPods and PDA (the term Podcast comes from combining iPod and broadcasting). They can also be played on most computers with multiple media programs. Many "Net Generation" students will be relatively comfortable using the podcasts since they have been created in the popular music download program, iTunes, in the beginning. Fewer technologically capable students may find it difficult to establish a podcast on their machine and will probably need help or explicit guidance. If podcasts are included as a major element of course delivery, teachers must be sure that students have a computer (or at least have regular access to a computer).

Advantages of Audio Technologies

Inexpensive: All of the audio/voice technologies are relatively inexpensive.

Easily accessible: Most people around the world have access to a telephone (either landline or mobile). In addition, most students in developed countries will have access to an audiotape player in their home or in a car.

Easy to use: Almost everyone is comfortable using a telephone and an audio cassette. With voice technologies, there is no software to install and no hardware to configure.

The main advantage of audio technologies is their cost-effectiveness. Though they are easy to use and most people around the world will have the required devices necessary to take advantage of audio, there are certainly potential students that may not have the suitable technology for access. This should be kept in mind when planning a distance course that will utilize audio. Costs for students and schools may increase if special accommodations need to me made.

Disadvantages of Audio Technologies

May require scheduling: Some of the voice technologies (such as audio conferences) are synchronous, meaning that they must be scheduled at a convenient time for the students and teacher.

Not conducive to visual information: Many students find it hard to focus and learn strictly through audio input. In addition, audio-only format restricts the content that can be conveyed (abstract concepts are very difficult to convey through audio).

May be impersonal: With audio-only interactions, there is no eye contact and no body language. Students may be "turned off" by a talking box.

Clearly scheduling issues need to be considered for any form of synchronous delivery. One of benefit that attracts students to distance education is the ability to access information at one's own schedule. While podcasts, CDs, audio files, and even voicemail allow for this, audio conferences do not. Again, interaction and a sense of community have been established as key determinants of student satisfaction in distance courses. If audio conferencing is not used to allow for both, some of the technologies discussed in the next sections should be incorporated into overall course implementation to foster such an environment.

Guidelines for Incorporating Audio Technologies

- Distribute visual materials in advance: If an audio conference is scheduled, handouts or other visual materials that might be of value during the presentation should be distributed well in advance.
- Set communication protocols: Since the participants will not be able to see each other, it is important to agree on protocols to help identify the speaker in an audio conference.
- Encourage interaction: In an audio conference, interactions should be built into the format. For example, instructors should call on specific students, instruct students to take turns asking questions, and make sure that one student is not

allowed to monopolize the conversation. With both audio conferences and audiotape delivery, students should be required to use email, fax, or voicemail to engage in further interactions with each other and the instructor.

- **Record audio conferences on audiotapes:** It is very easy to record an audio conference. That way, you can distribute the tapes for students who were unable to participate in the conference and for those who would like to review the content.
- Get to know the students: If possible, seek ways to get to know the students, such as visiting the remote sites, gathering the students together in one place, or exchanging photographs or videotapes.

Computer Technologies

With the increasing use of the internet worldwide in computer technologies, distance education is becoming more common. Online learning does not necessarily imply distance learning as many traditional university courses now use software to assist the learning process using internet-based courses management. However, a lot of research has been carried out in order to establish best practice and guidelines for distance education and programs based on the Internet. The primary computer technologies used for distance education were e-mail, online collaborations and Web-based education. Obviously, only students with reliable computer and internet access can take courses using these technologies.

E-mail

E-mails are a simple and cheap way to communicate for instructors and students throughout their course. Designers occasionally plan an entire e-mail communication course. This works especially well for students who prefer asynchronous education and allow students who are too timid to talk to the instructor in a traditional face to face training course. E-mail is more often used in addition to print, audio or video technology. In addition, bulletin boards and listings can be used to improve the quality of the distance course in addition to conventional e-mail Bulletin boards communication. are online newsgroups or discussion groups, where students and teachers can post messages to which each subscriber can read and reply. Most instructors know the list of services, which can be also used to send an e-mail to a student list or group. The newsletter boards and the list can be an effective way to facilitate student and instructor interactions. E-mail is also a convenient way of distributing different files like PowerPoint presentations and tablets of PDF documents in the form of attachments. These types of files are computer technologies and, as long as students are comfortable in their usage, they are available for internet courses to substitute imprinted materials. As stated above, email is essentially

asynchronous – students need not login to receive them at the same time – and this is one of the main advantages of email technology. It is available any time, night or day. In addition, for little or no cost you can obtain e-mail accounts. The cost of an internet connection is the majority of the costs of an e-mail account. The main disadvantage of e-mail software is, of course, the requirement of an Internet connection. Students will have to learn how to access and download annexes by using email software. As a resource notes, "You must ensure that you have all the hardware, software and expertise necessary to make communications successful before students participating in the email instruction."

3. DISTANCE EDUCATION DESIGN, IMPLEMENTATION, AND FUNDING

Text, audio, TV and computer are the four major mediums for distance learning. But more than one technology can be used for each medium. Through selecting various media, administrators and course planners can therefore further refine courses. The digital-age definition of distance education implies, as noted in the introduction, distance courses allow that two-wav communication between the teacher and students. The communication can be synchronous or asynchronous, depending on the technology employed. However, any effective programme, in order to allow for two-way communication and collaboration, any form of technology needs to be used. Early researchers pointed out two extra features that have proved critical for optimizing the study situation .:

- The ability of the medium to reach all learners, or provide access;
- The flexibility of the medium.

In order to be effective as a program, the medium selected for the course should be able to reach all learners. This implies that if it is known that all potential students will have internet access then utilizing chat and email as a form of communication is a viable option, for example. The medium must also be flexible enough that students have some ability to adapt its use and it to their specific situation. An audio CD is an example of a flexible medium because it can be played on various devices, including a computer, and audio files can be extracted and transformed to different formats as needed. Updated research expands on these characteristics. When designing a distance learning program and deciding which technologies to incorporate into the courses, experts point to six factors that need to be kept in mind.

- Delivery and access
- Control
- Interaction

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- Symbolic characteristics of the medium
- The social presence created by the medium
- Human-machine interface for a particular technology that takes into consideration how the equipment interfaces with the end users.

4. DISTANCE EDUCATION SUSTAINABILITY AND GROWTH

Established distance education programs must find ways to maintain stability, create a return on investment, and scale for growth. This section examines some of the concerns that institutions face when considering growth strategies, best practices for financial sustainability, methods of estimating program costs, and price setting.

Institutional Concerns for Growth: According to Miller and Schiffman, "many of the most important short-term concerns are administrative but other issues strike at very important academic issues." Table 2 presents some of the key challenges that the authors identify with regard to the expansion of distance education:

Table 2: Administrative and Academic Challenges for Distance Education Expansion

Administrative	Academic	
- Funding course development	- Fully recognizing faculty contributions when	
- Supporting the new needs for technical help and other student support issues	their individually authored content is shared by other faculty	
- Ensuring a flow of resources back to academic	- Championing a new pedagogy	
units that take faculty members from their regular teaching to reach out to online learners	- Effectively assessing and evaluating all aspects of the performance of online courses	
- Deciding which services should be supported centrally and which should be provided locally	- Holding faculty members accountable for their use of online materials in a blended environment	
 Managing the breakdown of traditional areas of administrative authority and "turf" as innovation diffuses throughout the institution 	- Ensuring curricular coherence across sections of a course or across campuses	

Financial Sustainability: In a 2007 article published in the Online Journal of Distance Administration, Meyer, Bruwelheide, and Poulin drew upon the combined expertise of experienced online administrators to draft a series of ten principles that facilitate the financial sustainability of online programs.

Program Costs: A thorough understanding of the existing costs of a distance learning program is essential for establishing reasonable projections of future costs. All other operations must be scaled together as the distance program grows. This materials. includes professional services, registration, support personnel and the quality of the training. Programs must ensure the cost of developing an online course is accurately estimated. Underestimation can endanger or even jeopardize a program's long-term development. The prices of media and technology, materials and equipment, staffing costs and the design and production of

courses, including time management, assignment of resources, formative evaluation, and quality control will be an important element that affects the costs of the online program. A number of commercial off-shelf tools are available, but notable lack of information on best practices for estimating costs is available to the public. A "web based cost estimation program based on expert evaluations... and years of experience in the design of hybrid, synchronous, asynchronous, CD-ROM, two-way video and online courses" was developed by the Center for Learning Technologies at Old Dominion University (ODU).

Determining a Price – Alternative Fee Structures:

When institutions determine their programme's costs, they have to identify ways of meeting these costs. Apart from securing external grants from foundations or federal programs and funding from the home institution, price setting is an innovative way to guarantee the financial sustainability of distance programmes. A common strategy that institutions pursue is to create alternative payment structures for students in online courses, according to the study commissioned by the Association of Public and Country Grant Universities (APLU) in August 2009 cited early in this report. This can include technology fees for online students or completely different tuition structures. Some institutions charge online students (or all students) technology fees to facilitate technological improvements on the campus, including technology purchases to support distance training programs. Other institutions have separate teaching structures, typically called e-rates, which are used to pay the costs of supporting specific courses or programs online. Such rates often provide an important tool for recovering costs by individual departments, especially in response to growth or contraction in programmes.

5. CONCLUSION

Distance education became an effective alternative to the formal education system. The formal education system is organized learning in the institutions, including schedules, curricula and curricula that are provided by the teacher and led by the student by an exam system. Non-formal education is learning organized outside the formal system and focused on its organizational character, flexibility of its hours of study. Informal training is incidental education, through reading, attending a lecture, participating in seminars, etc. Distance training is very popular in modem time since a learner can do his best in his or her education within a short period without hard work and without attending daily classes. It also provides students with a wide chance to gain while learning. Distance learning is an effective alternative to the formal education system. It is extremely important for the emerging learning society as a whole and for the society that is educationally underdeveloped or developed. The

distance education program is intended to educate people who cannot join a school or a university for one reason or another. The message is both for lifelong learning and for univeralizing training. Distance education is, therefore, a type of open formation whereby there is a part-time organization that covers the life of a person in his or her own environment, according to his or her self-imagery and time, outside the time table of the formal system. The education is conducted at distance by means of a range of means such as correspondence courses, contact programs, electronic media such as radio, television, video and audio cassettes, etc. Distance learning, distance learning, Open University, open schools and correspondence education, etc. are all terms used for distance learning.

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Corresponding Author

Randhir Singh*

Research Scholar, Dept of Education, OPJS University