

Chapter I

INTRODUCTION

1.1 Background of the study

The emergence of new technologies has almost revolutionized the field of teaching and learning. With the advances in the educational technologies, more emphasis is laid on self learning and on the use of effective technologies to access education anywhere, anytime. New media technologies enable collaboration over the Internet. Blogs and Wikis offer collaboration among a small or large group, depending upon the nature of the media (Friedman & Friedman, 2013). Collaboration and interaction between the student-student, teacher-student and student-content are vital for distance education courses (Bernard, Abrami, Borokhovski, Wade, Tamim, Surkes & Bethel, 2009). A distance education institution utilizes various media to deliver learning information and to connect with teachers and learners. The media are grouped into two categories, one is the media which can be used to deliver subject content, such as print materials, video tapes, audio tapes, television, computer-based courseware, CD-ROM (Compact Disk Read Only Memory), and the other being the media which permit communication between teachers and students such as fax, radio, teleconferencing, videoconferencing, and the Internet (Ponmeni, 2013). The fourth generation of distance education, the Flexible Learning Model identifies the development of World Wide Web and its interactive capability and access to an increasingly

extensive range of teaching-learning resources offered by connection to the Internet (Taylor, 1995).

Distance education is the fastest growing field of education in the world today, in both the developed and developing countries. The earliest form of distance education was correspondence education, which emerged in the mid-nineteenth century in Europe and the United States and later flourished to other parts of the globe. In the 1840s, Isaac Pitman provided the first distance education course in the modern sense, as he taught a system of shorthand by mailing texts. This was the beginning of learning at a distance with the help of available media. Until 1910 the main delivery system of distance education was the mail, but gradually other technologies paved their way into the field of distance learning. Holmberg (1983) said that, despite the fact that distance education is designed for independent study, it should not be recommended that it can be realized with no study support services. The widespread use of internet and computers made distance education easier and faster with the help of virtual classrooms and virtual universities. The one way delivery of education through the print and electronic study materials to the learners is complemented by the two way interaction between teacher and learner during the counselling sessions. Distance education has a long history but its popularity and use has grown exceptionally with the initiation of more advanced technologies.

In India, the history of distance education is not very old. The Kothari Committee formed in 1961 by the Department of Education paved the way for correspondence education in the country. The wave of distance education entered

the country in its true form in 1982, with the establishment of the first open university of India, Andhra Pradesh Open University, Hyderabad, which was later renamed as Dr. B. R. Ambedkar Open University. The Open and Distance Learning system in India has grown to an exceptional level with the establishment of the only national open university of the country, IGNOU in 1985, mostly due to its unique user-friendly qualities. In today's competitive world, the open and distance learning system provides scope to all categories of people to opt for and create a good life for themselves. And it is preferred by a large section of the society, including people from various age-groups, social and economic backgrounds, and so on.

There are several meanings of the term 'distance'. Distance can mean geographical distance, distance of time or even intellectual distance. Some distance educators claim that distance education is the best way to learn as it allows students to acquire knowledge when it is most relevant to them. The biggest development in the field of distance education in the last 20 years has been the growth in the media by which distance education is delivered. The delivery mechanism of distance education has come a long way from the days of using postal services and phone lines, with the advancements in technology.

The term 'new media' is often used without a clear meaning or definition. Technological innovations and advancements have brought massive societal change. Instructional radio, television, personal computers, computer-based instruction, the Internet, Web 2.0, e-learning, m-learning, being the latest technological innovations of our times which have made great impact on

education. One of the significant characteristics of the kinds of media under study is that they are digital in nature (Lister, Dovey, Giddings, Grant and Kelly, 2009). Lister et al. (2009) refers to four main results of the turn towards digital media. We can now read books on the internet, watch television and movies on the Internet or on mobile phones, and upload photographs on social media, blogs and hang them on digital frames. Information can be compressed and fit in a very small space like USB (Universal Serial Bus) drives. Access to data can be very fast and data can be manipulated in numerous unimaginable ways. According to Eugenie Siapera, the term digital appear to focus mainly on the technological element of the media. But, since the digital element is not the only characteristic of these media, we can therefore keep away from the use of the term digital media. According to Shawn Lawson, “New Media has no definition”. The new media reuses the conventions of old media, such as, television, radio, film, print. New media also include the internet, which already has a “40 year old history”. Since the term ‘new’ refers to dynamism and penchant for constant change, new media can include all kind of media formats as long as they are evolving (Siapera, 2012). The term ‘new’ implies the openness and struggle between different ideas, users, logic and so on, which seem to be a part and parcel of the new media.

Marshall McLuhan (2011) has claimed that we have left the ‘Gutenberg Galaxy’ behind and it is now electronic communication, rather than print media, which drives cultural development. For McLuhan, television was the dominant electronic medium, but gradually, the Internet and the World Wide Web have grown into global metamedia, for which it is quite hard to find precedents.

Manuel Castell (2001) has named the era we are currently living in as the 'Internet Galaxy'.

The print has been the dominant medium of instruction delivery in distance education since long. Gradually, the distance education system started relying on different media support to assist their learners in learning. With the rapid advancements in the field of technology, the use of new media technologies in imparting education has also made a significant leap. Peters (1994) made a major contribution to the theory of distance education by acknowledging and speculating the 'industrialization of education'- the use of technology to reach the masses. Distance education is atleast 160 years old with the establishment of the opportunity to learn through the use of postal services (Schlosser and Simonson, 2010). But with the arrival of the voice mail, CD-ROM, e-mail, internet, the basic assumptions about teaching/learning have been altered. The teaching-learning is no longer confined to the classroom. With the advent of new media technologies, both the campus-based learners and distance learners could get education through numerous technologies without sticking to the obligations of a particular timing or place. New media signifies digital interactive media. Some describe new media as the ability to combine text, audio, digital video, interactive multimedia, virtual reality, the Web, email, chat, a cell-phone, a PDA (Personal Digital Assistant), computer application, and any source of information accessible by a personal computer. With the emergence of the micro computer, the internet, e-mail, the world wide web and cell-phones, a new communication and information ground emerged that was truly interactive and that changed the figure of each and every media. The popular understanding of new media identifies it with the use of

computer for distribution and exhibition, rather than its production. In 1984, Rice defined new media as communication technologies that enable or facilitate user-to-user interactivity and interactivity between user and information.

W. Russell Neuman (1991) suggests that whilst the “new media” have technical capabilities to pull in one direction, economic and social forces pull back in the opposite direction. According to Neuman, “we are witnessing the evolution of a universal interconnected network of audio, video and electronic text communications that will blur the distinction between interpersonal and mass communication” (Neuman cited in Croteau, Hoynes & Milan, 2012). Neuman argues that New Media will:

- Alter the meaning of geographic distance
- Allow for a huge increase in the volume of communication
- Provide the possibility of increasing the speed of communication
- Allow forms of communication that are previously separate to overlap and interconnect

The use of ICT (Information and Communication Technology) has already been recognized as an integral part of the distance or informal education. In a developing country like India, the most preferred forms of new media technologies for education are the internet, mobile phones, internet, PDAs and smart phones. Distance education is a broad term, as explained by S. Tichapondwa Modesto and Daniel R. Tau (2009), which includes a range of teaching and learning strategies used by correspondence colleges, open universities, distance education departments of open universities and distance

education training units of private sector organizations. The convergence of the need for continuous learning and unprecedented technological innovations in communications has pushed distance education approaches to the forefront of educational practice.

New Media Technology also has strong portability which is replacing books and notes. Their capabilities enhance learning through interaction and collaboration; it creates a learning community, providing access to a variety of online resources, allowing new skills or knowledge to be applied immediately. One of the most advantageous characteristics of new media technologies is that it does not need a classroom, which creates just the right kind of environment for distance education for today's busy learners. And new devices having new features and capabilities are appearing at an accelerated pace. Learning through mobile phone is convenient as it is accessible from virtually anywhere, it is collaborative, and the same content can be used to share instantaneously among almost everyone.

Learners with disabilities, both physical and mental, are often particularly drawn to distance learning. For many of them, it might be the only form of education open, their disabilities making it impossible for them to study in full-time or face-to-face settings (Simpson, 2012). In the social and cultural situations like India, the differently-abled populace might face obstacles to a large extent, in attaining higher education through the conventional mode, and hence, leaving only the distance mode to choose. The needs of the learners vary widely, and they have to be reassured of the flexibility of the university/institution in meeting their

needs. Some of the media technologies that can be extended as help to the differently-able learners of the distance mode could be audio-tapes, text-voice converters or readers for the visually-challenged learners. The hearing impaired could be provided with text-phones, transcripts, and so on. The lessons provided over e-mail or mobile phones are more welcoming for the learners who embraced the distance mode of education for one or the other reason.

Some of the modes of learning new media technologies, which have helped the distance-learners in accessing education anywhere anytime, have been discussed below.

1.1.1 *Internet*

The Internet revolutionised the computer and communications world like nothing before. The invention of the telegraph, telephone, radio and computer set the stage for this unique integration of capabilities. The Internet is a worldwide broadcasting capability, a mechanism for information dissemination, and a medium for collaboration and interaction between individuals and their computers without regard for geographic location. It has been the contention of scholars such as Douglas Kellner, Callum Rymer and James Bohnam, that new media, particularly the Internet, provide the potential for a democratic postmodern sphere, in which citizens can participate in well-informed, non-hierarchical debate pertaining to their social structures. The Internet has created new forums of social interactions and social relations including social networking websites such as Facebook and MySpace, which could be used as tools of imparting education and information at a distance. Over six million people use blogs and message boards

as a means of communication and for the sharing of ideas (Beena & Mathur, 2012). Educational video-clips uploaded on You Tube, blogs, and social networking sites, are being successfully adopted into the delivery process of distance education by many institutions around the world. Distance education via the Internet provides learners with a low cost, flexible option to expand into global markets (Casey, 1998). Cutting-edge technologies have enabled universities to implement distance education to reach more diverse populations and increase the availability of Web-based learning environments. The web holds several advantages over traditional learning. The Web allows interactive delivery with multimedia content that helps overcome the limitations of static resources. (Desai, Hart & Richards, 2008).

1.1.2 *E-learning*

E-learning is commonly referred to the planned use of networked information and communication technology in teaching and learning. A number of other terms are also used to describe this form of teaching and learning, as online learning, virtual learning, distributed learning, networked and web-based learning. The letter “e” in e-learning stands for the word electronic. E-learning would include all educational activities that are carried out by individuals or groups working online or offline, and synchronously or asynchronously via networked or standalone computers and other electronic devices. E-learning not only covers content and instructional methods delivered via CD-ROM, the Internet or the Intranet, but also includes audio and video tape, satellite broadcast and interactive television (Benson, 2002). Moore and Kearsley (1996) define teleconferencing in terms of describing “the

interaction of students and instructors via some form of telecommunications technology. There are four different types of teleconferencing: audio, audio-graphics, video and computer”. Telecommunications is provided using a variety of communication technologies. Many educational institutions are turning to online education as a technique to offer education at a reasonable cost.

1.1.3 *Open Educational Resources in digital form*

The concept of Open Educational Resources (OER) describes any educational resources (including curriculum maps, course materials, textbooks, streaming videos, multimedia applications, podcasts, any other materials) that have been designed for use by educators and learners, without the need to pay royalties or any fees. OER has emerged as a concept with great potential to support educational transformation. Its transformative power lies in the ease with which such resources, when digitized, can be shared via the Internet. OER is dissimilar from e-learning. Open Educational Resources aim to promote open access to digital educational resources “that are available online for everyone at a global level” (Caswell, Henson, Jensen & Wiley, 2008). The term was introduced by UNESCO (2002), which defined OER as the “technology-enabled, open provisions of educational resources for consultation, use and adaptation by a community of users for non-commercial purposes”. The William and Flora Hewlett Foundation defined OER as “teaching, learning and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or repurposing by others” (Huyen, 2007).

The open licensed education materials have tremendous potential to contribute to improve the quality and effectiveness of education. The scope and availability of OER is ever expanding. OER are increasingly being regarded as a solution, to overcome the challenges of access, quality and cost in providing or participating in higher education, all over the world. Inequitable access to learning, especially at the tertiary level has been cited as a reason for OER in the developing nations. Bateman, Lane & Moon et al (2012) support the development of OER policies and strategies to increase access to educational programmes, build capacity among educators, including appropriate infrastructure, design quality assurance frameworks, and develop cost-effective strategies and business models.

1.1.4 *Electronic Book*

An electronic book or e-book is a portable hardware and software system that can display large quantities of readable textual information to the user, and that lets the user navigate through this information (Borchers, 1999). The definition of e-book differs from one researcher to another. According to Hawkins (2000), “an e-book is the contents of a book made available in an electronic form”. An e-book is an “integration of the classical print structure with an electronic environment giving additional value added features that paper cannot provide” (Landoni, Wilson & Gibb, 2000). They can be accessed anywhere, anytime with the technological developments, proving to be very handy for a distance learner. The various advantages of e-books are the easy availability and search, customization, portability, multimedia facilities, environment-friendly, cost-efficient, and easy storage. E-ink technology has made reading on a screen comparable to reading

from paper, and walkmans, cell phones, iPads and iPods have made it comfortable for the people.

1.1.5 *Internet Radio / Web radio*

By 2001, radio programmes were being delivered over the Internet. With the technological innovations, radio programmes are available not only from terrestrial networks but also from a large variety of satellite, cable and telecommunications networks. Radio is now assuming the shape of various multimedia-enabled computer devices (e.g. desktops, notebooks, PDAs, Internet radio). Traditional broadcasters could stream their content over the channel of Internet radio, and brand new broadcasters could reach online audiences generally without requiring any governmental approval. Internet radio services are accessible from anywhere in the world, with the help of a suitable internet connection. One can listen to the Internet radio on a personal computer or similar devices, through an embedded player programme located on the respective station's website. Streaming technology is used to distribute Internet radio.

Digitalization and internet are changing media markets to a great extent, particularly radio. Radio listeners have an increasing amount of content, such as news, information and entertainment in different platforms and formats, competing with radio (Cordeiro, 2012). Through the internet, even a small local station (e.g. a community radio station) can potentially become a global player or an international station.

1.1.6 *Audio/ Audio-visual materials*

In the 1970 and 1980s, audio and video cassettes offered greater flexibilities and more opportunities for media integration and student-active learning. During the late 1980s and 1990s, the technologies became cheaper, more accessible and more powerful, computers and telecommunications became progressively more important, predominantly in the more industrialized parts of the globe. The trend is continuing into the 21st century too (Thomas, 2001). Audi and video cassettes and CDs possess most of the capabilities of radio and television, and can be listened to and viewed as per the convenience of the learner, and hence, providing the learner a control over the learning process. The 15 to 20 minutes of discussion or interview on any topic related to the study area of the learner could help in capturing the attention of the learner while providing knowledge. It is sometimes as good as face to face learning. These audio/audio visual study materials could effectively help in filling the gap between the teacher and distance learner to a great extent, at a much lesser cost.

1.1.7 *Social networking*

Social networking covers a wide range of online environments, with many formal definitions broad enough to encompass almost any Web 2.0 collaborative environment (Alexander, 2006). Social networking is a tool, with both its advantages and problems for usage in teaching and learning. These tools offer significant advantages for distance education, in terms of pedagogical requirements and student learning outcomes. Social media sites enable communication among small or large groups of people, and serve to make the world a smaller place. The groups of people on these media are able to interact

more regularly and accomplish various tasks through interactions (Friedman & Friedman, 2013).

According to Liu, Kalk, Kinney, Orr & Reid, (2009), the most commonly used social media technologies in higher education are blogs, podcasts, social networking, and virtual environments. Various other web technologies which also possess the characteristics of social media, like eBay, YouTube, etc., could also be utilized as a platform for creating a learning organization (Andrus, 2005). Social media tools can be used to teach students how to collaborate and work with others, which is very helpful in the distance learning scenario. The students could actively participate in the learning process, rather than being passive recipients of transmitted knowledge.

1.1.8 *Online Discussion Forums*

Online Discussion Forums can prove to be useful in maintaining a motivational level of the learners (Simpson, 2012). These forums can be used by the learners for any kind of discussion regarding the course in which the learners are enrolled, or on any other related area of study. In some cases, the teachers or experts could also be involved in the discussion. Today, there are innumerable discussion forums available on the Web on numerous topics and areas, from which anybody can be benefited. A forum can easily be formed on the Web with the help of some web space or some hosting providers. A discussion forum enables participants to communicate online using text. They can also be used to share viewpoints, create and share thoughts, share information, knowledge and multimedia, and create and share relations. These forums can prove to be useful in the field of distance

learning as they can provide a platform to the physically distant learners and teachers to interact and share.

1.1.9 *Mobile phones and Mobile devices*

Keeping in view the increasing number of mobile phone users, its personal and portable nature, and rural nature of the learners in distance mode, the mobile technology has lot of prospects in bringing improvements in the distance education scenario of the country. The technology can be used for imparting the quick and small messages very easily as well as learning materials, which could be received by the learners on their mobile phones. Mobile learning or m-learning has been defined as learning that takes place via wireless devices as cell phones, personal digital assistants (PDAs) or laptops. A vast area of new possibilities has emerged for today's mobile generation due to the recent advancements in computer technology, wireless communication, including Wi-Fi, and global wireless technologies like GPS (Global Positioning System), GSM (Global System for Mobile Communications), GPRS (General Packet Radio Service), and 3G. The utilization of new media technologies in the field of learning has led to a new learning paradigm. Moreover, mobile technology offers a very hopeful way to reach the vast population of the developing countries as it does not require bandwidth connections (Deb, 2011).

Jonassen (2000) claims that many students are often prolific and fearless users of technology and can assimilate new software and hardware very easily. There is a need to integrate appropriate technologies into existing education systems (Ferry, 2009). The most successful use of the mobile phones is as a video

recording device or as a digital camera. As the constructivist learning approach is embraced more in course design, online learning continues to flourish. With mobile networks, m-learning provides greater flexibility for the learner to access course material, engage with the course activities, and interact with the instructor and classmates anywhere, anytime and on-demand on a mobile device. Mobile learning could encompass gaining knowledge while doing something else, such as commuting on public transit, waiting in an airport or doctor's chamber. When the two words, mobile and learning, are blended together, it is easy to recognize how this method of course delivery and interaction is able to fit more easily into the active lifestyles of the adult learners and provide further flexibility for their busy schedules. The m-learning ecosystem is made up of a wide variety of devices connected to different kinds of networks. The most common forms of mobile devices are mobile phones, smart-phones, personal digital assistants (PDAs), net-books, tablets, e-readers, digital cameras, portable media players, and gaming devices. Mobile education is recommended as the path to follow in distance education for developing countries and areas such as South Korea, China and other parts of Asia, and Africa (Motlik, 2008). Moreover, mobile telephony is more common and accessible and easily available than the Internet.

1.1.10 *Digital Library*

Digital libraries are an organized and focused collection of digital objects, including texts, images, video and audio, with the methods of access and retrieval and for the selection, creation, organization, maintenance and sharing of collection (Smith, 2001). The major benefits of digital libraries are improved access through

internet and CD-ROM, which can be accessed anywhere, anytime, making the technology suitable for distance learning. Digital libraries have wider access; thus, meet the requirements of large number of users at a time.

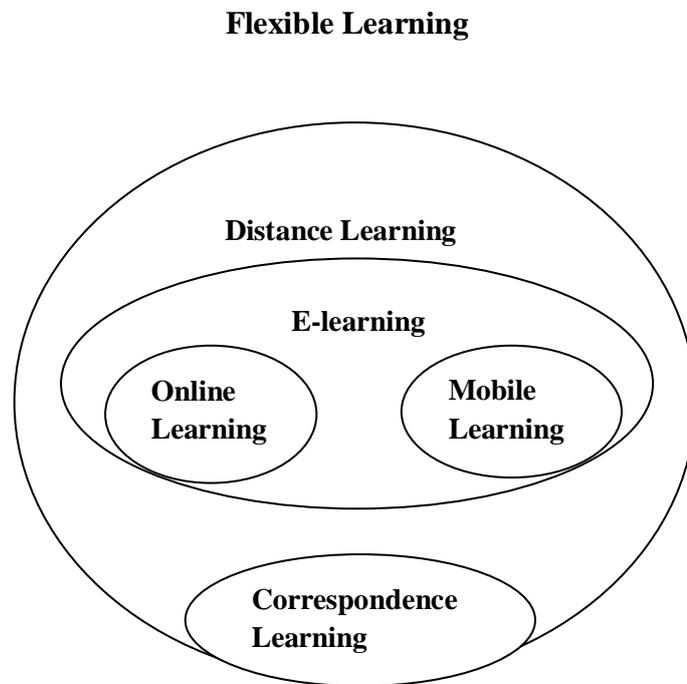


Fig. 1.1: The Subsets of Flexible Learning

(Source: Brown, T. H. (2003). The role of m-learning in the future of e-learning in Africa)

1.2 Statement of the Problem

The research problem is entitled “**New Media Technologies in Distance Education: An Analysis of Usage and Impact**”. The proposed study will make an endeavour to make a study on the nature and extent of the use of new media technologies in distance education, along with its impact on the process. The study also seeks to learn the delivery mechanism of the distance learning materials

adopted by the leading distance education universities/institutions of the country and look into the changes that have undergone since the inception of these technologies in the field of distance education in the country. The proposed research would study the types and forms of new media technologies adopted by the premier distance learning universities/ institutions of the country. It will also study the uses of these technologies by the learners of the distance education process and the impact on their learning process.

Many distance education providing universities around the world are making use of various new media technologies in the delivery mechanism of their study materials. In India also, the distance education scenario has changed with the advent of new media technologies in the recent years, as almost all the distance education universities/ institutions possess and make use of some or the other form of new media technologies. These universities maintain well-furnished websites, providing almost all necessary information to the learners, along with having other media necessary for delivering education to their distance learners, in the form of multimedia learning materials, Open Education Resources, e-books, educational radio over the internet, information over the social networking sites and blogs of the institutions and so on.

In this study we are going to relate the term new media technologies with the internet, websites, blogs, social networking sites, CDs, DVDs (Digital Video/Versatile Disc), and audio and audio-visual multimedia productions, open educational resources (OER), internet-radio, e-books and so on. The new media technologies which have so far been recognized and utilized by the distance

learning universities of the country would be considered for the study. The use of technology has many-a time received concerns regarding the relationship between usage and age, gender, social and economic background and the likes; the Oxford Internet Institute Survey administered in 2005, 2007 and 2009 reports that while almost 92% of under 18 year-olds are using the internet, less than 20% of those aged 75 years and above are online (Siapera, 2012). The World Internet Project reports differences in the use of technology between men and women, the gap being more prominent in the case of countries like Chile, Colombia, and the likes as compared to the developed ones. These differences might pose as barriers in the smooth flow of education to each and every individual through the use of technology. Yet, the enormous advantages of use of new media technologies cannot be undermined by these small barriers, which could be researched upon and resolved. The proposed study would try to find out the gaps in the usage of new media technologies by the distance learners and analyze the reasons behind.

1.3 Social Significance of the study

Education is one of the much needed necessities for the development of an individual, and thereby of the society, in today's context. Since it is not viable for every person to avail education in the formal education system, distance education provides an option to many to continue their studies. In a developing country like India, which is still struggling with a large section of poor and uneducated population, many people fail to complete their education in the formal system due to one or the other reason. For many, the prospect to get education is often

curtailed by several reasons, like poverty, necessity to earn at an early age, geographical constraints, and so on. The distance learning system provides an opportunity to the people to avail education for their individual development. By getting education from the distance learning system, an individual prepares oneself for better employment opportunities, further promotions, and better income generation. The society is also benefited by receiving service of highly educated employees in different sectors. This would have a multiplier effect in generation of income, poverty alleviation and illiteracy mitigation.

The distance education system is dependent on the delivery mechanism opted for the delivery of the learning materials to the learners. The learners in the distance learning system are separated from the institution by space. Hence, the delivery of study materials is an important aspect of the distance education system, as it is one of the ways for an institution to reach the learners. Since the inception of distance education system, the print medium has been the prominent method of delivering education to the learners. But gradually, with the advent and development of various technologies, the education system is embracing the available technologies to reach the students. Technologies help in overcoming the difficulties faced in delivering distance education through print medium. The distance learning system has also incorporated a number of technologies into the system to deliver education to its learners, beyond the boundaries of distance and time. The emergence of the new media technologies paved a new way in the field of distance learning. The well-known open and distance learning institutions around the world have already utilized the technological tools for the benefit of their learners. In India, the use of new media technologies in both conventional

and distance learning fields is growing rapidly, but still it has to go a long way to meet the needs and problems of each and every individual.

Hence, this study is undertaken extensively on the distance education field of India, specially, Assam, focusing on the use of new media technologies and new opportunities available in the present scenario. Due to the growing importance of technology usage and distance learning, the present study will be of immense importance to the academicians, government officials, policy makers, politicians and others who are involved in the development of the education field.

1.4 Objectives of the study

The general objective of the study is to analyse the factors that determine the use of new media technologies in distance education vis-a-vis certain select universities. The specific objectives are:

- 1) To study the present status of use of new media technologies in (selected) leading open and distance learning institutes/universities of India
- 2) To analyse the usage and impact of available new media technologies by/on the learners of Krishna Kanta Handiqui State Open University, Assam
- 3) To analyze the prospects of the use of new media technologies in open and distance learning to benefit the ODL learners in India

1.5 Outline of the Thesis

The thesis for this study consists of six chapters in total. The first introduces the research as a whole. Background information on the research topic, the statement of the problem, social significance and objectives of the study are given.

It is followed by the review of relevant literature in the Chapter 2. The chapter reviews the literature on distance education, new media technologies used in distance education. Chapter 3 deals with the conceptual and theoretical part of the research study and present in details the same. It also discusses in details how the research was designed and conducted. The research strategies adopted in the study are explained and justifications are given for the use of questionnaire and interview schedule as the major methods of data collection and for the selection of location for the study. The tools adopted for data collection and data analysis are presented and explained here.

Chapters 4 and 5 present the data analysis and research findings. They contain the findings and analysis of case study method, interviews and questionnaires. The questionnaire analyses are presented, starting with data cleaning, followed by data validity and reliability. Chapter 6 discusses the key findings of the research, limitations of the work, and suggestions for further research.

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