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The Role of Information and Communication Technology (ICT) In Learning at a Distance

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ABSTRACT

Information and Communication Technology (ICT) has turned out to be a vital part of every discipline of world. It has brought a revolutionary change in the field of Education. ICTs have helped to do away with the segregation of Learning at a Distance and changed the character of Distance Education. Open and Distance Learning is getting more dependent on ICT and has been playing a central role in the delivery strategies of Distance Learning. A Distance Education Course may use the internet; one way and two way transmissions through open broadcast, closed circuit, cable, microwave, broadband lines, fibre optics, satellite, or wireless communications devices; audio conferencing; or video cassettes, DVDs, and CD-ROMS etc., Educational Technologies are replacing direct teacher-student interaction. Anything that helps distance learners to communicate: learner with tutor, learner with learner and learner with the learning materials may be termed as Information Technology. Technological advancements especially in the area of ICT allow teachers to make use of various strategies that could actively engage student's interest. This paper focuses on the role of ICT in Open and Distance Education. It also explores Impact on Distance Learning and major Challenging factors affecting utilization of ICT for Learning at Distance.

Keywords: Distance Learning, Electronic Communication, ICT, Teaching Learning

I.INTRODUCTION

Education is an indispensable need of every human being and today's technology has a big part in every subject of Life. Information Communication Technology (ICT) has become on the whole universally used slogan. ICT is the modern science of gathering, storing, manipulating, processing and communicating desired types of information in a specific environment. It has affected all walks of life in one way or the other. It is impossible to deny its importance in the educational, cultural, agricultural, scientific and technical disciplines of the world. Information needs are increasing day by day and in the present day society, every person is intending to be information oriented.

The advent of the internet and the capability of a global network of computers have completely transformed the nature of Distance Education. Learning at a Distance was conventionally a response to barriers such as geographic remoteness or physical inability to participate in face-to-face classes and was particularly prevalent in countries where small pockets of population was scattered over large distances such as in Australia and Canada. Now every country is using distance education even if their learners are able to access traditional face


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to face education. The concept of globally connected learners has resulted in global distance learning through virtual campuses that can enable access to any educational institution in the world or exist only within the networked computers. The present paper is mainly descriptive-analytical in nature. Relevant books, articles and newspapers are used in this paper. Data and information are collected from the concern sources as per need to support my research. Interpretative approach has been followed in this research. This paper focuses on the role of ICT in Open and Distance Education. It also explores Impact and major Challenging factors affecting utilization of ICT for learning at distance.

II. DISTANCE LEARNING

By definition, Distance Learning denotes an educational experience where the teacher and the learner are not face- to- face during the teaching and learning process. The word "distance" in itself denotes separation or isolation. "Distance Education is planned learning that normally occurs in a different place from teaching necessitating special techniques of course design, Instruction, special method of communication by electronic and other media and special organization and administrative arrangements" (Moore and Kearsley 1996).[1]

The Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) in its Distance and Correspondence Educational Policy Statement (July 2014) defines Distance Education as, "...a formal educational process in which the majority of the instruction *(interaction between students and instructors and among students)* in a course occurs when students and instructors are not in the same place. Instruction may be synchronous or asynchronous. A distance education course may use the internet; one way and two way transmissions through open broadcast, closed circuit, cable, microwave, broadband lines, fibre optics, satellite, or wireless communications devices; audio conferencing; or video cassettes, DVDs, and CD-ROMS if used as part of the distance learning course or program."

With the advancement in communication technology a variety of audio-visual media- radio, television broadcast, video cassettes, video compact disc, video text, CD, computer and other innovative techniques are used for effective transmission of knowledge to the learners at a distance and open learning system. Open and Distance Learning is the second chance for those who are not able to continue their studies due to certain reason. Distance Education on demand has been a way of reaching students who are unable to attend a traditional classroom base course. (Habibur Rehman 2014)[2]

III. USE OF ICT IN DISTANCE LEARNING

In the Concept of new Technology, Distance Learning provides Multimedia- based Education content to the students utilizing Standard Data Networking, Protocols and Infrastructure. The main advantages of using Technologies in Distance Education are Cost Effectiveness, Independence of Time and Place, Quality of Education Access resulting from the Mass Production of Course Materials, Teaching a lot of Students simultaneously, and finding a lot of Educational Resources.

Haddad and Draxler (2002) [3] identify five levels of Technology used in Education: Presentation, Demonstration, Drill and Practice, Interaction, and Collaboration. Each of the different ICTs—Print,

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Audio/Video Cassettes, Radio and TV broadcasts, Computers or the Internet—may be used for Presentation and Demonstration, the most basic of the five levels. Except for Video Technologies, Drill and Practice may likewise be performed using the whole series of Technologies.

ICTs are potentially powerful tools for extending Educational Opportunities, Formal and Non- Formal. ICTs also facilitate access to Experts, Resource Persons, Researchers, Professionals, Mentors, Business Leaders, and Peers- all over the world. For developing countries ICTs have the potential for increasing access to and improving the relevance and Quality of Education. ICTs stand for Information and Communication Technologies are defined, for the purpose of this primer, as a "diverse set of technological tools and resources used to communicate, and to create, disseminate, store and manage information." These technologies include computers, the internet, broadcasting technologies (radio, television) and telephony (Victoria, 2002). [4] This may include all types of Learning Technologies such as Print, Audio, Video and the Computer. The use of Computers in Open and Distance Education has provided new Pedagogical Strategies in Distance Learning as well as giving more independence to the Distance Learners.

The diverse Communication Services which have relevance to Distance Learning include Electronic Mail, Telex, Facsimile Transmission, Bulletin-Board service, Video Text, Voice System, Voice Message System, Teleconferencing, Audio Conferencing, Audio Graphics, Teleconferencing, Video conferencing, etc., All the above services make use of the special equipments, computer based message systems and computer networks. The special equipments include: Fax Machine, Automatic Telephone Dialler, Voice Recognition Systems, Voice Synthesizers, Data networks, and Commercial Data bases, Optical Disk Storage and Retrieval Systems, Telex Terminals, Communicating Word-processors, slow scan TV, High Definition TVs, and so on. What is important is not just using these media but properly organizing them into a well defined Instructional Strategy is the Essence of ICT application in the context of Distance Education (S.L. Mahajan 2002[5] &Taylor 1995).[6]

The Information and Communication Technology-based media is very important for Distance Learners. In Open and Distance Education different types of technologies and media are used to transfer education to the learners. Rumble (1986, 1994)[7,8] said that four types of media namely- Print, Audio, Television and Computer are available for teaching purposes, in one technological form or another. A medium is a generic form of communication associated with particular ways of presenting knowledge. According to Prof. Bates (1991, 1995) [9, 10] there are five important media in education: Direct Human Contact (face to face), Text (including still graphics), Audio, Television and Computing Media (e. g. Internet, online technologies). The use of each media gives both variety and the chance of accommodating different learning styles. One medium may serve a teaching function better than another in a particular area. The potential of each technology varies according to how it is used.

IV. IMPACT OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

As different Levels of Education embrace Distance Education Strategies, the impact of use of ICT on this type of learning must be considered in all contexts.

(I)Schools

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(i)Teachers and students have to learn new skills and work practices.

(ii)Teachers have to learn to deliver classes to students they could not see, creating new challenges for classroom management.

(iii)Teachers also had to achieve skills in technology so that they had sufficient confidence to deliver their classes to their distant students.

(iv)Students have had to learn a new range of communication skills using telephone, e-mail, video-conferencing and discussion forums.

(iv)Combining face-to-face and distance education: It is easy for the teacher and class to forget the distant students just as it is difficult for distant students to keep their focus on a teacher/class they cannot see.

(II)Vocational Education and Training: Introducing*:* workplace training linked to programs taught from Colleges of Vocational Education through ICT has opened up a range of issues about learning and learning support. Professional development of staff and development of students into self directed, independent learners who can engage with learning online is often a challenge particularly in practical vocational skills. Institutes need to focus on digital network development, Web site development, and professional development of staff -for teaching and student support, management systems for delivery, access and equity issues, and project co-ordination between workplaces and colleges.

(III)Universities and Institutes of Higher Education: The University Education system has gone through a revolutionary structural change. In the recent past, with the integration of computer and communication technology, continuous fall in the price of personal computers, along with the explosion of the world-wide-web, the nature of the distance education system in higher institutions is going through a continuous qualitative improvement. Now this process of improvement has gathered enough momentum to bring qualitative transformation not only to the Distance Education system but also to restructure the present University Education system entirely (Turoff, M,1995).[11]

Principles of adult education and self directed independent learning is again feature of Learning at a Distance in Higher Education. Experiences of traditional institutions now entering this area as they provide programs online can be informed by the Distance Education Universities and their adaptation to ICT over the past decades. Issues raised include:

(i)Collaborative learning and the development of a learning community at a distance is now possible with ICT and this has changed the way Distance Learners linked to Universities now learns.

(ii)The resource base now possible through databases and World Wide Web sites has also greatly changed their ability to research at a distance and libraries are now centres of ICT expertise and equipment.

(iii)The support infrastructure required to provide quality higher education at a distance is of major importance to the success of virtual campuses.

It is expected that in coming future, most of the universities will get restructured into virtual universities. The distinction between on-campus and off -campus, full -time and part-time, and local and distance students may almost vanish. (Mahajan 2002). [5]The concept of Net University, a two –tier virtual university, can only satisfy the present societal demand of higher education. Each university of repute must cooperate and coordinate with


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few other universities and institutions to build a Net-University so that with the limited number of quality staff large number of quality professionals can be produced, and trained without any geographical constraint or relocation.

V. CHALLENGING FACTORS AFFECTING UTILIZATION OF ICT IN DISTANCE LEARNING

There are various factors put forward by S.L.Mahajan, which influence the growth and adaptation of communication technology -

I. Appropriateness: The technology should go well with the geographical setting of the country. For instance, India's Policy of having own communication satellite to cover the entire country is justifiable.

ii. Accessibility: Certain constrains such as lack of money, Lack of adequate software/Courseware, lack of political will, etc., will have invariable affect on the accessibility of technology to educational sector.

iii. Handling: Computers need specialized operators and programmers to use them. More so, because technologies are changing so fast that one finds it difficult to keep oneself up-to-date in handling and maintaining them.

iv. Maintenance: the poor maintenance of various technologies imported from the developed countries, may be due to lack of expertise, lack of resources/ Infrastructure, non-availability of spare parts, or indifferent attitude of users.

v. Storage and use of information**:** the hot and humid climate of many south Asian countries is not suitable for computer technology. It is difficult for educational institutions in these countries to arrange venues free from dust, heat and moisture for the storage of data, software and hardware.

vi. Software/Courseware**:** there is a dearth of relevant software/Courseware (a lesson stored electro-mechanically for teaching/Learning a particular skill) for educational sector all over the world, including the developed countries.

vii. Technology: Technology must be reliable and Helpdesk and Warranty covered. Technology must be available to anyone who wants it. Teachers and users need to be trained regularly as new hardware/software is released.

viii. Support: Teachers need time to write courses (perhaps training in multimedia), tools to write courses, to be valued for their contribution to the school, and need peer support (training, networks, attend conferences). Students need to be allowed to learn in chosen style, and appropriate technology tools.

ix. Teaching and Learning: Courses should reflect modern teaching and learning methods, including the use of appropriate technology (problem based, constructivist theory, project presentation). Courses need to promote innovation, and via ICT, courses should introduce experts, conduct regular classes, admin meetings, peer networks, and conduct training.

x. Management: *Planning*/negotiating curriculum between provider and student needs to be done centrally. Assessment needs to be decided centrally. Funding for technology/ tele-courses and course planning/implementation, should be available; evaluation must be done regularly.

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VI.CONCLUSION

The emergence of technology especially in the field of Open and Distance Learning has opened a new horizon for distance learners. Information and Communication Technologies (ICT) are potentially powerful enabling tools for educational change and reform. Rapid advances in Information and Communication Technology pose new opportunities as well as challenges for every society. In the education sector, ICT has enormous potential to help countries address issues of Access to Learning, Quality of the Teaching-Learning Process and Management of Education Systems. In order to ensure the Quality of Education, the Distance Education Institutions must be careful about the use of proper Technologies and Media. We have to think the uses of Media and Technology in regard to appropriateness and acceptability in the society as well as on the ability of the institution offering the program. The socio-economic and cultural background of a person influences their ability to learn from different media technology.

The emergence of new Global Economy has serious implications for the nature and purpose of Educational Institutions. Hence it is need of the hour that Academicians collaborate and cooperate at the National, Regional and International level in the optimum utilization of technology to enhance the academic pursuit of knowledge while at the same time to achieving the noble mission of Quality Education for citizen of the universe. The Teacher's guiding is the key factor in ensuring and enhancing the Education Quality in any education form. Application of Technology in Education is not the ultimate goal; instead, we should use it to pursue Quality. The factors like Accessibility, Cost Effectiveness, Human Acceptance and Pedagogical Suitability should be considered. Effective combination of Media and Technology is necessary for assuring Effectiveness of the Open and Distance Learning System.

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