

## Introducing Educational Technologies in Distance Education Teaching Learning: IGNOU Experiences

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### ARTICLE HISTORY

**Paper Nomenclature:**  
Case Based Study (CBS)

**Paper Code (DOI):** V10N4OD2018CBS1

**Originality Test Ratio:** 32%

**Submission Online:** 2-April-2019

**Manuscript Acknowledged:** 5-April-2019

**Originality Check:**

**Peer Reviewers Comment:** 20-April-2019

**Blind Reviewers Remark:** 2-May-2019

**Author Revert:** 15-May-2019

**Camera-Ready-Copy:** 10-May-2019

**Editorial Board Citation:** 18-May-2019

**Published Online First:** 30 June 2019

**EDITORIAL BOARD EXCERPT** Initially at the Time of Submission (ToS) submitted paper had a 32% plagiarism, which is an accepted percentage for publication as some of the work depict are overlapped by the author's past research which the author had already communicated and undertook. The editorial board is of an observation that paper had a successive close watch by the blind reviewer's which at a later stages had been rectified and amended by the author (Ravi) in various phases as and when required to do so. The reviewer's had in a preliminary stages remark with minor revisions which at a short span were restructured by the author. The comments related to this manuscript are tremendously noticeable related to **Educational Technologies in Distance Education** both subject-wise and research wise by the reviewers during evaluation and further at blind review process too. The authors have crafted the paper in a structured manner. Considering the need and demand between the conventional methods of education the use of multimedia in education is considered as a powerful weapon for the aspiring learner community in distance teaching and learning. The introduction gives a clear perspective on the need for the research. Overall the paper promises to provide a strong base for future studies. All the comments had been shared at different dates by the authors' in due course of time and same had been integrated by the author in calculation. By and large all the editorial and reviewer's comments had been incorporated in paper and the manuscript had been earmarked and decided under "**Case Based Study**" category it focuses on the various technologies used in distance education.

**ABSTRACT Purpose:** The main purpose of the study is to explore the technological interactive communication applications used in distance education and also to highlight its merit and demerits.

**Design/Methodology/Approach:** Theoretical approach

**Findings:-** In the year 1986 the National policy on education expressed the role and usage of all available media for educational purpose. Distance teaching- learning process is being identified as multi-multiple media learning system. The basic vision of Open and distance learning (ODL), cater education to all irrespective of demographic location and time. The introduction of various educational technologies offers flexibility to the learner to absorb knowledge, concepts at their own pace anytime anywhere. Since it is interactive, it facilitates the continuous evolution of knowledge of distant learner utilizing the available. Information Communication Technologies (ICT).

**Proposed Implications:** The study mainly highlights the technological applications used in distance educations which will help the policy makers of education sector.

**Originality/Value:** The study mainly focuses how digital platform is promoting knowledge among global learners.

**KEYWORDS** Distance Learning | Education | ICT | Teaching | Technology

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<https://doi.org/10.18311/gjeis/2018>

Volume-10 | Issue-4 | Oct-Dec, 2018 | Online ISSN : 0975-1432 | Print ISSN : 0975-153X

Frequency : Quarterly, Published Since : 2009

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## Introduction

Open Distance Learning (ODL) owes its origin largely to the fast pace of socio-cultural, political and technological growth of modern era. Thus, considering the need and demand between the conventional method of education and the aspiring learner community forced to the use of Multimedia as a powerful weapon for distance teaching learning. Print is dominant media compared to the other medium like audio, radio, video, television, and teleconferencing, used as complimentary and to supplement the print.

The National Policy on Education (1986) expressed the integration of all available media for educational purpose. Distance teaching- learning process is being identified as multi-multiple media learning system, i.e., learning through multimedia like audio-video, radio, television, and teleconferencing, and other electronic media. “The technology mediation helps in overcoming space and time limitations and designs educational process based on learner’s needs. The mismatch between supply and demand, and other quality issues, can be balanced through technology interference. The basic concept of ODL, being its availability anywhere, everywhere and all time education, the whole ICT (Information Communication Technology) issue should not be seen as a religious practice or as a dogma. On the contrary, it should be viewed as one of the important tools to practice teaching-learning process” (Satyanarayana, 2002). In the year 1993 ISRO initially used video and audio from teaching end audio was integrated both teaching and receiving

ends targeted for school and collegiate educational purposes and in-service training. The system, named as the Training Development and Communication Channel (TDCC) is a regular operating system since 1995.

As per India 2011 Census with population of 1.21 billion people which is more than a sixth of the world’s population and it is reported that India will be the world’s most populated country by 2025 and has a great demand for higher education. The conventional system of education alone is not able to meet the continuously growing demand. There is an immense development in delivery mode of broadcast. This provides for an ample scope for utilization of multimedia in ODL.

Dolmen (1977) views ODL as of “systematically organized form of self-study in which student Counselling, the presentation of material and securing and supervising of students” are monitored by a group of teachers, with distinct responsibilities. Use of ICT in a systematic way will overcome the challenge

## Integration of Technology for Distance Learner

In the beginning we didn’t have the technological support in the education systems. After the technological advancements, the doyens of the distance education explored the possibilities of technology mediation for interactive methods of teaching-learning in ODL. One of the famous educationists Jim Taylor (2001:3)

Table 1: Types of Distance Education Institutes Based on the Prevailing Media

| S. No. | Media  | Elements  |
|--------|--|---|
| 1      | First Generation Providers (the correspondence model)                | Print   |
| 2      | Second Generation Providers (the multimedia model)                   | Print, Audiotape, Videotape, Computer-based learning, Interactive video (disc and tape)   |
| 3      | Third Generation Providers (the Tele-learning model)                 | Audio teleconferencing, Video-conferencing, Audio graphic Communication, Broadcast TV/Radio and audio-teleconferencing  |
| 4      | Fourth Generation Providers (the flexible learning model)            | Interactive multimedia (IMM) online, Internet based access to WWW resources, Computer mediated communication  |
| 5      | Fifth Generation Providers (The Intelligent Flexible Learning Model) | Interactive Multimedia (IMM) online, Internet based access to WWW resources, Computer mediated communication, using automated response systems, Campus portal access to institutional process and resources |

Source: Adapted from Taylor, Jim (2001:3)

Table 2: The various technological interactive communication applications in distance education

| Media           | Technologies  | Distance Education Applications  |  |
|-----------------|---|--|--|
|                 |   | One way  | Two- way   |
| Text & graphics | Print   | Self-learning Materials (Course Units and supplementary readings )                                 | Correspondence tutoring fax  |
| Audio           | Cassette<br>Radio<br>Telephone  | Audio cassette programmes<br>Radio Broadcast<br>-----<br>-----                                     | Audio Conferencing<br><br>-----<br>Telephone Tutoring                          |
| Video           | Broadcasting<br>Video Cassette<br>Cable TV<br>Satellite TV                | TV Broadcasting<br>Video Cassette Programmes<br>Cable TV Broadcasting<br>Satellite TV Broadcasting | Interactive TV<br>Video Conferencing<br>----<br>----                           |
| Computing       | Computers,<br>Telephone,<br>Satellite,<br>Fiber Optics<br>ISDN,<br>CD-ROM | Computer assisted learning/instruction, computer-based training, DVDs, CD-ROM, Computer data bases | Emails, Interactive Multi-media, computer conferencing, interactive databases. |

Source: Bates (1995-2005)

## Merits and Demerits of Media and Technologies used Distance Education

The use of Various technology in ODL provides immense support to the teaching/learning process by increasing the interactivity, improving the structure

and organization of materials, overcoming the cost and distance barriers, providing access to remote databases and the knowledge pool, apart from providing rapid feedback that enhances Counselling and evaluation considering the Cost, access interactivity the strengths and weaknesses are different.

Table 3: Merits and demerits of Media and Technologies used in Distance Teaching education

| Media                                 | Access  | Costs   | Teaching |         | Interactivity |         | Social  | Organization | Speed   |
|---------------------------------------|---------|---------|----------|---------|---------------|---------|---------|--------------|---------|
|                                       |         |         | Large    | Small   | Presentation  | Skills  |         |              |         |
| <i>One-way media and technologies</i> |         |         |          |         |               |         |         |              |         |
| Print                                 | Good    | Good    | Average  | Average | Average       | Average | Poor    | Poor         | Poor    |
| Radio                                 | Good    | Good    | Poor     | Poor    | Poor          | Poor    | Poor    | Average      | Good    |
| Audio cassette                        | Good    | Good    | Average  | Average | Good          | Good    | Poor    | Good         | Average |
| Educational broadcast TV              | Average | Poor    | Poor     | Good    | Average       | Poor    | Poor    | Poor         | Poor    |
| Pre-recorded ITV                      | Poor    | Good    | Poor     | Average | Average       | Average | Average | Average      | Poor    |
| Video cassettes                       | Good    | Average | Poor     | Good    | Good          | Good    | Poor    | Average      | Poor    |
| Computer-based learning               | Average | Poor    | Poor     | Average | Average       | Good    | Poor    | Poor         | Poor    |
| Multimedia                            | Poor    | Poor    | Poor     | Good    | Good          | Good    | Poor    | Poor         | Poor    |
| <i>Two-way media and technologies</i> |         |         |          |         |               |         |         |              |         |
| Audio conferencing                    | Good    | Poor    | Good     | Poor    | Average       | Poor    | Good    | Good         | Good    |
| Live interactive TV                   | Poor    | Poor    | Poor     | Poor    | Poor          | Poor    | Average | Average      | Good    |
| Video conferencing                    | Poor    | Poor    | Average  | Poor    | Average       | Average | Average | Average      | Good    |
| CMC                                   | Average | Average | Good     | Poor    | Good          | Average | Good    | Good         | Good    |

Source: Bates (1995)



Table 4: Evolution of Development in Satellite based Teleconferencing in India

| Year    | Organization  | Development  |
|---------|---|--|
| 1975-76 | ISRO  | Satellite Instructional Television Experiment (SITE)   |
| 1979    | ISRO-Posts and Telegraph Department                                 | Satellite telecommunication Experiment (STEP)- Seminar in teleconferencing mode for professionals using Franco-German satellite .                  |
| 1983    | ISRO  | Testing and impact in terms of knowledge through teleconferencing technology for education   |
| 1983    | UGC , NCERT   | Country wide class room(CWCR) and Programmes for children by NCERT by using Indian national satellite system (INSAT)                               |
| 1991    | Department of Adult Education<br>Gujarat and Gujarat<br>Vidhyapeeth | Training Programme with the use of INSAT-1B  |
| 1991    | UGC   | Talk back experiment for under graduate students in science  |
| 1992    | IETE  | Skill development Programme for maintenance engineers at six locations.  |
| 1993    | IGNOU-ISRO  | Teleconferencing for Distance education experiment   |
| 1995    | ISRO-IGNOU-AIMA-NCERT-<br>NIPCCED                                   | Use of INSAT 2c - Training and Development Channel TDCC one way video two way audio teleconferencing for IGNOU and other agencies on regular basis |
| 2001    | IGNOU-NIEPA-ICAL-<br>NCERT-RCL                                      | Launching of Gyan Darshan dedicated Educational Television channel GD-2 for teleconferencing   |
| 2003    | DPEP-DEPSSA   | Judicious mix of teleconferencing with other media ,for the successful implementation of the project   |
| 2004    | ISRO  | Launch of EDUSAT – Dedicated to meet the need for education  |

Source: *Four Decades of Distance Education: Reflections and Policy and Practice* by Suresh Garg, Venkayya santosh, Panda and Puranki

## Role of Video Teleconferencing in Education

The best option for our education system to reach the learners in widely dispersed remote areas of the country and the possibility for supply to meet the demand of teacher is through video conferencing. “Tele-Counselling /Teleconferencing is another method which provides an opportunity for learner-teacher interface. Teleconferencing is an electronic means which can bring together learners in groups at different locations and discuss their problems with the teacher /tutor stationed at a different location. This could be either in audio or audio/video mode” (Satyanarayana, 2004). “The growth of distance education, both quantitatively and qualitatively, has been phenomenal during the last two decades, particularly after the introduction of single mode and dedicated Open Universities in the country. Further, the application of ICT (Information and

Communication Technology) gave a major fillip to the accelerated development of distance education. The scope of distance education is going to be more and more predominant in the coming decades “(Garg et al, 2006).

According to Y.K. Singh distance learning refers to the learning beyond the classroom walls. Courses are offered via satellite and internet which link students directly to peers, professors, programmers and the change agents, in recent day’s universities for award of degree or certificate through distance mode become a practice

## Application of Multimedia Electronic Media Production Centre at IGNOU

IGNOU adopts “blended learning” approach for teaching-learning at a distance. This involves use of

a mixture of different technologies for creating the appropriate learning environments. The traditional classroom teaching methods are combined with the modern state-of-the-art-technology such as video conferencing session (Murthy & Satyanarayana, 2006)

The University follows the multiple media approach for its instructional purpose. TV and Radio broadcasts as well as audio-video programmes are used as an integral part of the instruction to supplement, enrich, support, demonstrate or otherwise strengthen the learning experiences of courses. The instructional system of the University consists of:

- Printed course material as a master teaching material.
- Interactive radio programmes and audio conferences through Gyan Vani FM Radio to supplement the course units; which is well known to the public at large.
- Produced programmes available on audio tapes CD, DVD, which are either broadcast on AIR or on the Gyan Darshan TV channel, web casting and available at Audio video library of EMPC and at study centres and on swayam platform
- Video conferencing sessions through Gyan Darshan
- Several projects are using the multimedia technologies to meet the target groups.

## New Trends and government of initiatives in Education

Ministry of Human Resources Development (MHRD) government of India designed and developed "Study webs of active learning for young aspiring minds" (SWAYAM) is an integrated IT platform using the information communication technology. It is a platform for the massive open online course (MOOC) for higher education; skill development courses are available at nominal cost to the students. It is a one stop web location for e-content along with interactivity for the students of primary to higher education. It also provides for peer group interaction,

discussion mandatory and certification.

Recent development in educational broadcast is a SWAYAM PRABHA is a bouquet of 32 DTH channels dedicated to educational programmes on 24X7 bases using the GSAT – 15 satellites.

## Conclusion

Open and distance education is a technology enabled learning process which include all possible multimedia tools for teaching learning at a distance otherwise defined as "Any meaningful communication is an education, if it is written or produced in multiple media; then it is called open Distance Education" Ravi Ayyagari and Rampelli Satyanarayana (2014). The technology plays a pivotal role in Open and Distance Learning. In this process, learners must take the advantage of the available technologies were used by the educational institutions to gain the knowledge from any place any time. The recent growth of Massive Open Online Courses (MOOCs) is revolutionizing traditional higher education worldwide. On one hand it reaches to global learners and on the other hand it promotes knowledge to huge enrolments with the help of a digital platform.

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### Undertaking and Acknowledgement

I (Ravi Ayyagari), the undersigned author of the manuscript entitled "Introducing Educational Technologies in Distance Education in Teaching Learning: IGNOU Experiences" hereby declare that the above mentioned manuscript which is submitted for publication in the Global journal of Enterprise information system in its Volume-10, Issue-4, Oct-Dec, 2018 is my original research work and ongoing study. The present research work is linked with my previous first hand information collected in due course which is a prerequisite for this study. Thus some of the contents might be overlapped and may be a necessity for accomplishing this paper hence would be affect the originality in a pretty manner and its percentages.

### GJEIS Prevent Plagiarism in Publication

The Editorial Board had used the ithenticate plagiarism [http://www.ithenticate.com] tool to check the originality and further affixed the similarity index which is 32% in this case (See Annexure-1). Thus the reviewers and editors are of view to find it suitable to publish in this Volume-10, Issue-3, July-Sep, 2018

## Annexure 1



#### PRIMARY SOURCES

|   |   |     |
|---|---|-----|
| 1 | <a href="http://iujharkhand.edu.in">iujharkhand.edu.in</a><br>Internet Source                                   | 13% |
| 2 | <a href="http://webserver.ignou.ac.in">webserver.ignou.ac.in</a><br>Internet Source                             | 10% |
| 3 | Stephen James Marshall. "Chapter 16 Using Evidence to Guide Sense-Making", Springer Nature, 2018<br>Publication | 4%  |
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| 11 | Lawrence A. Tomei. "chapter 12 Delivering Instruction to the Distance Learner", IGI Global, 2010<br>Publication  | <1% |
| 12 | Aras Bozkurt. "chapter 16 From Distance Education to Open and Distance Learning", IGI Global, 2019<br>Publication  | <1% |
| 13 | Submitted to University of Southampton<br>Student Paper  | <1% |
| 14 | "Technology for Efficient Learner Support Services in Distance Education", Springer Nature America, Inc, 2018<br>Publication                                 | <1% |
| 15 | Shweta Pandey, Satyam Prakash Tripathi. "chapter 2 Exploring a New Learning Environment Through Massive Open Online Course", IGI Global, 2018<br>Publication | <1% |

#### Citation

Ravi Ayyagari  
"Introducing Educational Technologies in Distance Education Teaching Learning: IGNOU Experiences"  
Volume-10, Issue-4, Oct-Dec, 2018. (www.gjeis.com)

<https://doi.org/10.18311/gjeis/2018>  
Volume-10, Issue-4, Oct-Dec, 2018

Online ISSN : 0975-1432, Print ISSN : 0975-153X  
Frequency : Quarterly, Published Since : 2009

Google Citations: Since 2009  
H-Index = 96  
i10-Index: 964

Source: <https://scholar.google.co.in/citations?user=S47TtNkAAAAJ&hl=en>

Conflict of Interest: Author of a Paper had no conflict neither financially nor academically.



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