INTERNATIONAL JOURNAL OF RESEARCH CULTURE SOCIETY
Monthly Peer-Reviewed, Refereed, Indexed Journal
Volume - 06, Issue - 09, September - 2022

ISSN: 2456-6683
[ Impact Factor: 5.743 ]
Publication Date: 10/09/2022

DOIs:10.2017/IJRCS/202209002 --:-- Research Article

# Acceptance of online education in India : A historical perspective

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***Abstract**: India advanced in the field of education at an innovative pace, experimenting with different modes of delivery to even reach the disadvantaged mass. Progressively, just as the distance education gained popularity and acceptance via radio and television, the online education through satellites and internet also gained popularity to touch the untouched, which is today being embraced by students seeking higher education, certification courses, up skilling, training for competitive exams and in-house training and development to employees. Considering the need to understand this historical advancement of education, this discussion paper, based on secondary data is significant in order to examine the roots of long-distance education in India till the emergence of online education as a significant mode of education in the present. This paper is able to establish the various educational programmes conducted by the government of India and other bodies until today to help the larger masses. Considering the significance of the history of online education as mentioned in the paper, future researchers can also test the efficiency of each programme of online mode of education.*

***Key Words:** Online Education, Historical Perspective, Radio, Television, Satellite, Internet.*

## 1. INTRODUCTION:

Education can be identified as the process of learning or acquiring knowledge, skills, values, morals, beliefs and habits. Education, is generally perceived as a continuous sequence of essential lifelong learning framework for helping humans develop their personal organizational skills, knowledge, and abilities (Miloš S. Krstić, Vladimir Radivojević, 2021). Basic education and superior knowledge help persons enhance utilization of accessible economic opportunities. Education in India is historically considered to be very vital in the social, economic and political improvement.

In India, education is a sacred right of every individual below 14 years of age. Individuals of all ages irrespective of sex, and social affiliations are encouraged and supported to receive education. The concept of education in distance mode is not new to India, since the stories of Ekalavya receiving education in archery from his Guru in a distance mode is widely believed in the country. Folklore mentions that even from days immemorial, India has been aware of the significance of education for wide-ranging development of a society. It is however true for today that education can be delivered in different modes including Online, Distance, Offline or even Hybrid. Different modes of delivery have different impact on both educators and learners. Online teaching in India dates back to the broadcasting of educational programmes in the radio, followed by the telecasting of educational classes in the television.

## 2. RESEARCH METHODOLOGY:

This study is based on the secondary data on the evolution of online education, apart from the traditional formal classroom education. The data is collected from the various research papers, magazines, online journals, online portals and different websites. The paper follows descriptive methodology to discuss the various means of education.

Objectives of the study:

The purpose of this study is to identify and examine the stages of education and its advancement towards complete online delivery mode at different times. The necessity to know the various modes of delivery is significant in order to understand the evolution of educational scene in India, with a historical perspective.

## 3. DISCUSSION - A VIEW ON THE HISTORY OF ONLINE EDUCATION:

### *3.1 Online education and radio:*

In 1894, long distance education went to a new height when Guglielmo Marconi invented the spark transmitter and obtained the first patent for a radio device (Omaha World Herald, 1897; Buckland & Dye, 1991). In 1906, a distance-teaching unit was founded University of Wisconsin-Extension. In 1919, the professors of University of Wisconsin started an amateur wireless station later known as WHA. It was the first federally licensed radio station devoted to educational broadcasting (Engel, 1936). Later during 1922, 73 other educational institutions received regular broadcast licenses. However, only half of those with licenses had stations on the air (Wood & Wylie, 1977). During the late 1920s, broadcast licenses were issued to 176 educational institutions.

According to the website of Prasara Bharathi, the radio was first introduced in India when Radio Club of Bombay made its debut broadcast in June 1923, followed by Calcutta Radio club in November 1923. Four years later to it came the Indian Broadcasting Company (IBC) working from July 23, 1927. However, it closed after 3 years. After several experimentations of different departments and Organizations, All India Radio launched its operations. Akashavani and Vividh Bharathi were the two official broadcasting services.

AIR after launching in 1936, became the fast-growing radio service provider expanding across 198 broadcasting centres. It is in the 8$^{th}$ five-year plan that AIR was expected to cover 97% of population approximately, according to the report of (*IGNOU, 2000).*

*Advisory Committee on Educational Broadcasting, UNESCO* discloses that earlier to AIR, educational broadcasting was started in India by the Municipal Radio Station at Madras for elementary schools inside its Civic limits.11 schools listened to this school programme. During October 1938, AIR started broadcasting to schools from stations including Delhi, Bombay, Madras and Calcutta and from Tiruchirapalli in 1940 *(Advisory Committee on Educational Broadcasting, UNESCO,1949)*. On November 2nd 1939, educational programmes for colleges started in Madras in English, twice a week lasting for 30 minutes each. During October 1942, the various stations of AIR started broadcasting 15 minutes programme in English once a week for the universities. Since 1947, the same programme was broadcasted in the evenings between 7 and 10 at different times by diverse stations, with both one-way teaching followed by discussion among students and even with teacher *(Advisory Committee on Educational Broadcasting, UNESCO,1949).*

The major educational programmes broadcasted in the radio (*Vyas, V. & Sharma, Ramesh & Kumar, Ashwini., 2002*) includes School Broadcast Project, Adult education and community development project, Farm and Home Broadcast Project, University broadcast project, Language Learning Programme, IGNOU-AIR Broadcast, IGNOU-AIR Interactive Radio Counselling, Gyan-Vani, Radio-Vision, Radio-text.

School Broadcast Project was started in 1937 for school students from Delhi, Calcutta, Madras and Bombay. Although the syllabus did not focus on the curriculum, AIR later broadcasted more curriculum-oriented programmes. However, the lack of common syllabus and time-tables amongst the schools of even same states made it difficult to broadcast programmes as per syllabus.

Adult education and community development project (Radio Forum), an agriculture-based project started in 1956, involving 144 villages near Pune. With the help of UNESCO, a listening, discussion and action group involving 30 minutes radio programme on agricultural and community development programmes was a great success.

Farm and Home Broadcast Project, started in 1966 aiming farmers were planned to offer information and guidance on agriculture and allied topics, providing assistance in adopting innovative practices to sustain with the local methods. The experts also conducted occasional farm radio schools, which proved to be very effective.

University broadcast project concentrated the higher education students, started in 1965. The Programme comprised of two segments, General programmes and enrichment programmes. The general programmes involved issues of public interests and enrichment programmes supported correspondence education offered by universities in their respective jurisdictions. School of Correspondence studies, University of Delhi and the Central Institute of English and Foreign Languages, Hyderabad are well known for preparation and broadcast of programmes through AIR.

As part of the experimentation, Language Learning Programme widely known as Radio Pilot project commenced in 1979-80 by both AIR and Department of Education Government of Rajasthan mutually, with an intention to teach Hindi to School going children in 500 primary schools of Jaipur & Ajmer districts. With the success of the project improving the vocabulary of children it was repeated in Hoshangabad district of Madhya Pradesh with some alterations but in vain.

IGNOU-AIR Broadcast- in association with IGNOU, AIR stations of Mumbai, Hyderabad and Shillong started radio broadcasts of IGNOU Programmes from January 1992, open to students of Open/ Conventional Universities.

During 1998, IGNOU in association with AIR Bhopal, IGNOU-AIR Interactive Radio Counselling (IRC) was started for students of Open / Conventional Universities to bridge the gap between institutions and students by responding to questions and to provide academic counselling in their subject area as an experimental programme for one year (Sharma, 2002a). It was extended to 8 other AIR stations including Lucknow, Patna, Jaipur, Shimla, Rohtak, Jalandhar, Delhi and Jammu, and later to many other.

In 2001, Gyan-Vani (Educational FM Radio Channel of India) project was launched to students of Open / Conventional Universities. As noticed by Sharma, (2002b) Gyan which means Knowledge and Vani means aerial broadcasting is an FM

Radio Channel of India which is unique and a decentralised concept of extending mass media for education and empowerment helping the students of local community.

Radio-Vision (Multimedia through Digital Radio) originally started by BBC, the technique of radio-vision allows the subject matter transmitted in two channels, the audio and the visual. The visuals are presented in the form of still filmstrips, charts, slides, models, etc, while the explanation is given through recorded narration. Educational institutions use this as a substitute for educational television. A successful and encouraging experiment was conducted by National Council of Education Training and Research, India in 1975-76 using radio-vision as one of the components of the multi-media package for teacher training designed and operated during Satellite Instructional Technology Experiment (SITE) (Asif A. Siddiqi, 2020). A series of charts and picture cards were presented to about 24,000 participating teachers 2400 centres along with verbal explanation provided through specially prepared radio broadcasts (IGNOU, 2000). A pilot project was run in IGNOU in 2001 with the support of UNESCO for testing the feasibility of using the new digital technology for cost effective transmission of audio-visual courseware. The project proved that FM Radio transmitters and Satellite Radio technology can be used to transmit multimedia courseware using the Asia Star of World Space (Dikshit, 2002).

Radio-text is a method of transferring data via computer networks instantaneously to create a radio and text environment. The teaching is broadcasted through FM radio which are sent through textual mode to the receiving end via a computer network. The learner can listen to the radio and watch the computer screen to receive the textual data. Since both audio and text are broadcasted together, the learner at the receiving end gets high quality and low-cost teaching. This was a successful experiment made on radio-text at Yashwant Rao Chavan Maharashtra Open University, Nasik, India. As mentioned by Chaudhary, 1996 this can also be used for peer-group discussions indicating the variety of objectives of radio-text.

### *3.2 Online education and television:*

W. Bates (1988) mentions that television has a unique role to play in distance education because of its distinctive delivery, presentational, and control characteristics. As mentioned in the article by Hope Kentnor it is said that in an interview with Frederick Smith (1913), Thomas Edison once said,

*"Books will be obsolete in the public schools. Scholars will be instructed through the eye. It is possible to teach every branch of human knowledge with motion picture. Our school system will be completely changed inside of ten years" (p. 24)* (Hope Kentnor, 2015)

According to Koenig & Hill, Educational television can be defined as "a medium which disseminates programs devoted to information, instruction, cultural or public affairs, and entertainment" (Koenig & Hill, 1967, p. xv). Television is unique in its own kind, since it has a feature of combining both audio and visual technology unlike radio, hence it can be considered to be more effective medium of educational delivery.

Although television was available since 1927, it was first used for broadcasting between 1932 and 1937 at the University of Iowa (Koenig & Hill, 1967) as part of an experimentation for educational purposes. By 1961, 53 stations were affiliated with the National Educational Television Network (NET) with the primary goal of sharing films and coordinating scheduling, and with a slow rise in the educational programmes (Hull, 1962 cited by Vyas, V. & Sharma, Ramesh & Kumar, Ashwini., 2002). The educational television channels increased swiftly during 1960s. It was by1972, that 233 educational channels were there. (Carnegie Commission, 1979).

Television first entered India as 'Doordarshan' (DD) on Sept 15, 1959 as the National Television Network of India, being first telecasted black and white on Sept 15, 1959 in New Delhi. Later after 13 years, second television station was established in Bombay in 1972 and by 1975 there were five more television stations at Shrinagar (Kashmir), Amritsar (Punjab), Calcutta, Madras and Lucknow. It was during the 1982 Asian Games, television in India saw a colour telecast.

Education has been a part of television programmes since its beginning in India. There are several projects that were telecasted on television, which can be considered as online education. They are Secondary School television project (1961), Delhi Agriculture Television (DATV) Project (Krishi Darshan) (1966), Satellite Instructional Television Experiment (SITE) (1975), post-SITE project (1977), Indian National Satellite project (INSAT) (1982), UGC-Higher Education Television Project (HETV) (1984), IGNOU-Doordarshan Telecast (1991), Gyan-Darshan Educational Channel (2000) and the popular Teletext in India.

Secondary School television project was designed for secondary school students of Delhi in October 1961, to improve the standard of teaching based on syllabus in view of shortage of laboratories, space, equipment and scarcity of qualified teachers of Physics, Chemistry, English and Hindi.

Krishi Darshan was a successful mission started on the occasion of republic day, 1966 to help the communities of farmers on experimental basis for the 80 selected villages of Union territory of Delhi through Community viewing of television and further discussions among themselves.

Satellite Instructional Television Experiment (SITE) launched on August 1, 1975 was one of the largest one-year projects on techno-social experiments in human communication for villagers and their Primary School going children of selected 2330 villages in the 6 states of India including Rajasthan, Karnataka, Orissa, Bihar, Andhra Pradesh and Madhya Pradesh. Objectives of the project are to study existing process of rural communications and the role of television as new medium of education and to study the process of change that the community television brought in the rural structure with developmental education programmes in the area of agriculture and allied subjects, health, family planning and social education.

SITE experiment was a successful launch which showed the world that it is possible to reach even the remote villages for the purpose of education, right from adults to primary school children. (IGNOU, 2000).

Post-SITE project was also a successful project launched in Rajasthan in March 1977 to train the villagers with the improved technology of farming and the usage of fertilizers and to maintain health and hygiene. Also, to bring national and emotional integration making rural children aware of the importance of education and healthy environment.

Indian National Satellite project (INSAT) (1982) was proposed to help villagers to know about the recent technological advancements in the field of agriculture, health and hygiene, initially for the villagers and their school going kids of selected villages in Orissa, Andhra Pradesh, Bihar, Gujarat, Maharashtra and Uttar Pradesh. Later from 15 August 1982, ETV was launched through terrestrial transmission in Orissa and Andhra Pradesh furthering the rest of the states Bihar, Gujarat, Maharashtra and Uttar Pradesh were covered under INSAT service using INSAT-1B in June 1983.

UGC-Higher Education Television Project (HETV) (1984) was launched on August 15, 1984, where University Grants Commission in collaboration with INSAT started educational television project- 'Country wide Classroom'. The purpose of the project was to update, upgrade and enrich the quality of education together with maximising the reach. It was one-hour programme telecasted in English on a variety of subjects with an aim of overall improvement for undergraduates, educated public and the teachers. An inter-university Consortium for Education Communication (CEC) together with a chain of about 20 audio-visual media Mass Communication Research Centres were set up by the UGC at different institutions in the country, to ascertain high quality of programming for this project, also some programmes were imported from other countries, and are edited to suit the necessities of the Indian students.

IGNOU-Doordarshan Telecast was started May 1991 for Distance learners initially on Monday, Wednesday and Friday from 6.30 to 7.00 A.M through the national network of Doordarshan to provide tele-counselling to the students of open universities in remote areas. With an increased response to the programme, it was increased to five days a week.

Gyan-Darshan Educational Channel was a joint venture of Ministry of Human Resource Development, Information & Broadcasting, the Prasara Bharti and IGNOU launched on 26th January 2000 as an exclusive Educational TV Channel of India. IGNOU was given the complete responsibility to be the nodal agency for transmission.

Teletext is one of the significant booms to education delivered online where text and graphics are transmitted as digitized signals through air broadcasting or cable channel for display on television set as part of the communication system.

### *3.3 Online Education and Satellite:*

EDUSAT- According to the website of ISRO, EDUSAT was launched on 20 September 2004. GSAT-3, is a Geo-synchronous satellite developed on I-2K bus. GSAT-3 was co-located with METSAT(KALPANA-1) and INSAT-3C at 74o E longitude which was named as EDUSAT was meant for distant class room education from lower schooling to higher education. It was the first dedicated "Educational Satellite" that provided India with satellite based two-way communication to class room for delivering educational materials.

It was appreciated largely because it had formed a network of almost every district. It is considered as the first step towards tele-education. It actually helped around 57,000 schools and colleges, where nearly 15 million students are benefited every year.

### *3.3 Online Education and Internet:*

According to the Oxford dictionary, Internet means a global computer network providing a variety of information and communication facilities, consisting of interconnected networks using standardized communication protocols. Utilising internet facility to various fields, education has been one of the top most critical field using internet, especially after the lockdown situation in the whole world due to Covid-19 pandemic.

Khan has defined online learning as "the delivery of instruction to the remote audience using the web as an intermediary" (Khan,1997). Electronic learning has 3 different models which includes Synchronous, Asynchronous and Blended Learning system (Joshi, Piyush & Dewangan, Dr., 2021).

Under Synchronous e-learning there is an interaction between the learner and teacher via web-based Portals. Asynchronous e-learning allows has no interaction facility between the teacher and the learner. Blended learning is the

combination of the above two e-learning methods. Online learning is open to access in today's world as eBooks, Journals, Videos, Recorded lectures, Quizzes, Discussion forums, Live Q&A sessions and Interviews.

Online learning has been the coexisting reality along with the formal education system after the series of lockdowns that shook the whole world. It also must be noted that the mission of Digital India, which is being pushed forward by the Government of India, is a reason for the massive usage of internet applications all through the country.

The significant motive for the growth in online education is MOOCs (Massive Open online courses) along with the schools and colleges continuing teaching their children with the syllabus through online real-time applications like zoom, google meet, Microsoft teams and such other to continue with synchronous and formal education.

MOOCs are online courses that help in boundless participation which can give open access through the web (Kaplan, Andreas M.; Haenlein, Michael, 2016), gaining popularity by 2008. Hundreds of universities around the world have launched at least one MOOC, where millions of students have taken advantage of it. MOOC providers include Coursera, edX, XuetangX, Udacity and FutureLearn.

In India as a major step towards providing Massive Open online courses SWAYAM is a programme initiated by Government of India and designed to achieve the 3 cardinal principles of Education Policy that is access, equity and quality whose objective is to take the best teaching learning resources to even the most disadvantaged. SWAYAM is developed to touch the untouched by the digital revolution who have not been able to join the mainstream of the knowledge economy.

SWAYAM has appointed 9 National Coordinators produced and delivered to ensure best quality comprising of AICTE (All India Council for Technical Education) for self-paced and international courses, NPTEL (National Programme on Technology Enhanced Learning) for Engineering, UGC (University Grants Commission) for non-technical post-graduation education, CEC (Consortium for Educational Communication) for under-graduate education, NCERT (National Council of Educational Research and Training) for school education, NIOS (National Institute of Open Schooling) for school education, IGNOU (Indira Gandhi National Open University) for out-of-school students, IIMB (Indian Institute of Management, Bangalore) for management studies, NITTTR (National Institute of Technical Teachers Training and Research) for Teacher Training programme (SWAYAM website)

Some of the other e-learning portals of India includes- Indiaeducation.net, Khan Academy, Coursera, EDX, Byju's, Meritnation, Ask IITians, W3 School, Academic Earth, Code Academy, Open Yale Courses, Investoo (Joshi, Piyush & Dewangan, Dr., 2021).

The future of education in the coming days will be e-Learning or web-based learning system (Joshi, Piyush & Dewangan, Dr., 2021). There are a lot of challenges and opportunities for the growth of online education, the key factors being internet penetration; low cost of online education, ease of doing course, initiative by government, employer's recognition and bridging gap (Jindal, Aman & Chahal, Bhupinder. 2020). However, Online teaching methodology strikes challenges to many teachers and students due to lack of experience in conducting or attending live classes, may be because of lack of training to use it. (Wang et al., 2020). Once more utilisation is made out of the internet applications to teach and learn with required amount of training, education will be taken to the next level of learning/teaching anything, anytime and anywhere.

## 4. CONCLUSION:

Education has seen several changes in its evolution in India. The long-distance education using technology started with the invention of radio which is proved to be an effective medium in reaching out quality education and training to the masses, followed by television through several incarnations in its own way to reach the students and other section of seekers of knowledge more effectively as an asynchronous mode of education. This was followed by the most important experiment that is the dream of the then president of India, Dr. APJ Abdul Kalam, to reach the students with a synchronous attempt of online education through satellites. Although the experiment did not work as expected, the evolution of Internet led to the major breakthrough, in the history of education. Since online education through internet gave more exposure to interact, learn together and reach the remote areas, it evolved as a blessing during the hard times of lockdowns around the world. This major milestone is not free of challenges too. Lack of training to utilise the various knowledge portals and applications stands a major setback. However, not very far India through its digital mission can step forward towards more advancements to make education a basic necessity that can be reached to everyone without bias, through internet.

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