Status, Effectiveness and Challenges of New Media in Indian Open Universities with Special Reference to Video Lectures

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CERTIFICATE

This is to certify that Mayank Gaur, a Ph.D. Student of Journalism, School of Continuing Education, Vardhman Mahaveer Open University, Kota, Rajasthan, has done his research work duly following UGC Regulations on Minimum Standards and Procedure for the award of M.Phil./ Ph.D. Degree Regulations 2009 and written his thesis titled, **"Status, Effectiveness and Challenges of New Media in Indian Open Universities with Special reference to Video Lectures"** under my guidance and supervision. To the best of my knowledge and belief his work is original and a product of his self-acquired knowledge. This Thesis is being forwarded to the Vardhman Mahaveer Open University, Kota, for the award of the degree of Doctor of Philosophy in Journalism.

Dated: September 21, 2020 **Dr. Rashmi Bohra**

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CERTIFICATE OF ORIGINALITY

The Research work embodied in this Thesis entitled, **"Status, Effectiveness and Challenges of New Media in Indian Open Universities with Special reference to Video Lectures"** has been carried out by me duly following UGC Regulations on Minimum Standards and Procedure for the award of M.Phil./ Ph.D. Degree Regulations 2009 at the School of Continuing Education (Journalism), Vardhman Mahaveer Open University, Kota, Rajasthan, India. The work, submitted for consideration of the Award of Ph.D., is original based upon the data by me. No part of this thesis has formed the basis for the award of any degree or fellowship previously.

Dated: September 21, 2020 **Mayank Gaur**

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LIST OF ABBREVIATIONS

- AIR- All India Radio
- BBC- British Broadcasting Corporation
- CMS- Content Management System
- CNN- Cable News Network, US
- DD- Doordarshan
- FCP- Final Cut Pro
- FGD- Focus Group Discussion
- FM- Frequency Modulation
- GB- Gigabyte
- HD- High-Definition
- HTTP- HTTP Live Streaming
- ICT- Information and Communication Technology
- IT- Information Technology
- IOUs- Indian Open Universities
- IGNOU- Indira Gandhi National Open Universities
- IBC- Indian Broadcasting Company
- IBS- Indian Broadcasting Service
- ISDN- Integrated Services Digital Network
- MB- Megabyte
- ODL- Open Distance Learning
- PCR- Production Control Room
- PCI- Press Council of India
- PDF- Portable Document Format

- PIB- Press Information Bureau
- PTI- Press Trust of India
- VMOU- Vardhman Mahaveer Open University
- UOU- Uttarakhand Open University
- VL- Video Lecture
- SITE- Satellite Instructional Television Experiment
- TV- Television
- URL-Uniform Resource Locator
- VO- Voice Over
- WWW- Worldwide Web

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ABSTRACT

New Media technologies embraces the most modern pedagogical tools used for Open and Distance Learning across the world as it possesses the capacity to provide education using a multisensory approach which yields in improved learning and better understanding. Video lectures are among one of the new media-based material extensively used in the Open and Distance learning system. The objective of the present study was **to find out the status, effectiveness and challenges of New Media in Indian Open Universities with special reference to video lectures** for which the Sequential Explanatory design was used among many of the mixed method research designs. For the present study, the current status of use of new media based digital tools were investigated for which a purposive sampling was used on 14 Indian open universities which were listed in DEB/ UGC website. For subsequent objectives data were collected from 600 students, 60 teachers, 7 Information Technology Experts and 11 video producers and video experts selected using purposive sampling from the three universities IGNOU, VMOU and UOU. Multiple tools were used for collection of data including Questionnaire, Rating scale and Interview. The data collection also included focus group discussions with experts. The result revealed that the effective use of new media-based technologies at Indian Open Universities in general and at State Open Universities in particular is still in preliminary stage and are not being used as required. The major reason behind it is lack of financial and human resources at State Open Universities as compared to IGNOU. Further stakeholders also reported that in Indian circumstances video lectures of moderate duration (15-20 Minutes) displaying presenter and the PowerPoint presentation of the content together format integrated with animations and graphics delivered through any web-based platform are more effective than that of video lectures of shorter or longer durations in some

different format or without animations and graphics. In addition, the study indicated a need of short term training for presenter as well as presenting team and it has also been reported the need of awareness campaign for learners about these multi-sensory, new-media based multimedia materials is required for better utilization of video lectures developed by Higher Education Institutions (HEIs) in India.

Key Words: - New Media, Indian Open Universities, E-leaning, Distance Education, Video Lectures.

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CHAPTER 1

INTRODUCTION

1.1: Background of Study

New Media is a form of media that is an internet-based medium that provides e-learning material through various digital platforms. New Media is used to define all content related to the internet and the interplay between technology, images, and sound. The definition of New Media is dynamic, and thus frequent changes occur in its descriptions. In the broader sense, New Media includes internet such as websites, online newspapers, blogs or wikis, video games, CD-DVDs, mobile apps, social media and electronic digitized materials like e-books, e-SLM (Self Learning Material), etc.

New Media technologies enable collaboration over the Internet. 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).

New Media has been viewed as "new media," which are digital, often having characteristics of being manipulated, networkable, dense, compressible, and interactive (Flew 2008).

New Media refers to “those digital media that are interactive, incorporate two-way communication and involve some form of computing” (Logan, 2010). However, New Media does not include television programs (only analog broadcast), feature films, magazines, books, or paper-based publications unless they contain technologies that enable digital generative or interactive processes (Manovich 2003).

New Media also includes Social Media, which consists of YouTube, Facebook, Twitter, LinkedIn, Google+ or similar other web and mobile-based services which facilitate group interaction. In the present era, New Media has penetrated all geographical regions. New Media has been playing a pivotal role in the area of education. It provides an interactive e-learning platform for learners, facilitating instruction and strengthening the teaching and learning process. Presently, many educational institutions are extensively using the New Media platform for teaching and learning. As a result of the development of New Media, creative changes took place in the non-formal education system in the 21st century. They contributed to progress in the e-Learning system. ODL system provides students easy access to education at their doorstep. It bridges the gap between formal education and drop-out learners. At present, many Educational Institutes and Universities are widely using e-video learning through New Media. New Media technology has become the most modern pedagogical path for Open Distance Learning. The capacity to provide education using multisensory approach makes the New Media based learning system equally beneficial for normal as well as exceptional learners (blind, deaf, dumb, gifted and creative). New media promotes involvement and participation in learning.

ODL established its roots in the form of instructions at least 150 years ago as a correspondence study. The University of London was the first university to offer distance learning degrees, establishing its external program in 1828. The background to this innovation lay in the fact that the institution (later known as University College London) was non-denominational and, given the intense religious rivalries at the time, there was an outcry against the "godless" university. The issue soon boiled down to which institutions had degree-granting powers and which institutions did not (Rothblatt, et al., 1988).

Otto Peters observed that open and distance learning methods have had a significant impact on teaching and learning. He emphasized on "Lifelong Learning" through the spectacular use of New Media. He summarized, "The concept of open learning offers interesting opportunities for the further development of distance education. It can only be exhausted if teacher and students work out a new formation of themselves, and if learning and teaching in distance education are structured, arranged and organized differently so that it can be adapted flexibly to the different learning requirements of a very heterogeneous clientele" (Peters, 2001).

1.2: Mass Communication

It is a medium of dispersing information to a large number of people. Many channels or media are mediators of mass communication. Probably the first medium of mass communication was the book. The writing of books started about 5,500 years ago. In mid-fifteenth century, the Johan Gutenberg of Germany invented the printing press. He published the first machine-printed book- *The 42 lines Bible*. Then there was the creation of newspaper. The first newspaper was established in 1625. There was an advancement in it through various stages and by the beginning of the 19th century, it had developed into a full-fledged mass medium.

Towards the end of the 19th century, in 1895, cinema came. Then, in 1920, came the scam radio. Television followed soon and arrived in the 1930s. Now, the latest mass medium is the Internet, which has the characteristics of all other mass media in some way or the other.

Mass Communication is an ancient process that has been working since the primitive times. The medium can differ according to the current technology. Mass communication is a process to serve the Message to a large number of receivers. It is the most popular and influential communication. Today's era depends on

technological invention, and mass communication technology is creating a broad spectrum in the communication world. Mass Communication studies have innovated many ways to communicate with people like Print Media, Electronic Media and New Media. It has penetrated the society through TV, Newspaper and the Internet, etc. It is creating a bridge between politics and society. It has been developing the knowledge of people since a long time. It has robust resources to communicate with people like newspapers, television, advertisement, websites, apps, etc.

1.2.1: Meaning of Mass Communication

A mass media is essentially a working group organized around some device to share the same Message, at about the same time, to a large number of people. Mass communication has defined as- Mass communication, a process whereby mass-produced messages are transmitted to large, anonymous and heterogeneous masses of receivers (Dayal & Patra).

McQuail (2000) defined mass communication as "only one of the processes of communication operating at the society-wide level, readily identified by its institutional characteristics".

Mass Communication is often used loosely to refer to the distribution of entertainment, arts, information, and message by television, radio, newspaper, magazines, movies, recorded music, and associated media (Chaturvedi & Mittal, 2011).

Mass Communication has been defined by many experts in many languages, but its main relevant contents are: Sender- Message- Gatekeeper- Receiver with some Noise. Mass Communication is always mediated. It is usually one-way communication or has a limited source to communicate with a large number of people. There is no or low feedback on the information that has been given to the audience.

1.2.2: Elements of Mass Communication:

The mass communication process requires a sender, a message, a channel (Medium) and receivers, including the feedback process, which is the response of the receiver, which comes back to the sender through the same or another channel. In all this process, which plays an important role, the barriers are noise or ambiance. Noise may be present in all mass communication or in some part of this process. This process, with all these elements, is called mass communication.

Mass communication is different from other levels of communication, as it evolves a large number of receivers. The mass communication process is different from the other form of communication; it takes time for feedback. In interpersonal communication, the feedback is received instantly. But in mass communication, the feedback can be delayed and in many cases, there is no feedback.

It has some basic elements of communication. In mass communication, the sender is known as the *source of Message*. The medium of the message in mass communication is called *media* or *mass media.* The multiple receivers are called as the *audience*. It has some additional elements as well. The elements are as follows:

A. SOURCE:

The communication source or sender may be the same or different. Source mainly describes the institute or organization where the idea or message has been generated. The sender may be different. In case the source or sender is different, the sender belongs to the media institutions or is a media professional or communication expert like a reporter or announcer. For example, if a socialist or scientist generates the idea or Message to be communicated to a mass of people, he can send a script of the Message or idea to the media for delivering the Message through an announcer or an Anchor.

B. MESSAGES:

The message is the most significant element of mass communication. The message is transferred through source or sender with the help of Broadcast television, radio, print media, internet, mobile, or any other medium of communication to the receiver. There is uncertainty regarding receiving feedback about the interaction. Generally, mass communication creates noise in this process. So, the message of communication should be clear and specific.

C. MEDIUM or CHANNEL:

The term channel and media are interchangeable in mass communication. Modern Mass Media is mainly classified into four broad categories which are:

1. Traditional Media
2. Print Media
3. Electronic Media
4. New Media

There is also the fifth category, which includes all traditional media like folk dance, drama, folk song and so on. Thus, print media are newspapers, books, magazines, still photography, painting, etc. The audio medium is Radio, like FM, AIR, etc. Audio-visual media are Television, Films, Theatre (Drama), etc. and New Media is providing internet-based medium and mobile app-based medium, which have been changing to mass communication medium in a revolutionary mode. These have the ability to communicate in a broad and far range of areas. Mass media plays an essential role in fulfilling our requirements. Today, media plays a more critical role than the message. These have become very powerful. Also, each medium is so unique and different, that they have developed their unique importance. In the current scenario, digital and internet-based media are undergoing frequent growth.

D. RECEIVER

Mass communication is a process to communicate the message to the mass or the people. In this process the one who receives the message is called the receiver. Receivers are the mass of people. This mass of receivers is called a mass audience. The mass audience can be defined as *'individuals united by a common focus of interest (to be informed, educated or entertained) engaging in identical behavior towards common ends (listening, viewing and reading)'* (Chaturvedi & Mittal, 2011). Whatever be the type of media content or message, it is to be ensured that the maximum number of audiences receives the message.

E. FEEDBACK

Feedback is a critical component of the communication process which indicates the effect of communication. But in mass communication, feedback is almost absent. Mass Communication process communicates to a large number of people or a group. It is seen that in mass communication, a large number of people are included, but it is not possible to get feedback from a large number of people. It has indirect feedback, as direct feedback is possible only in interpersonal communication, and to a limited extent, in group communication.

F. NOISE

During the mass communication process, noise is induced. There are two types of noise in mass communication- channel noise and semantic noise. Channel noise is generated during transmission through media. In print media, channel noise will be misspellings, scrambled words, or misprints. It is any mechanical failure that stops the message from reaching the audience in its original form. Semantic noise will be related to language barriers, education level, socio-economic status, age and experience.

1.3 Medium of Mass Communication

There are four types of medium of mass communication:

1. Traditional Media

2. Print media

3. Electronic Media

4. New Media

These medium shows the structural development in mass communication field and it has also changed the pattern of Journalism also.

1.4: Traditional Media

It refers to the old way of communication. People in rural areas might not be able to view television. Similarly, illiterate people will not be able to read newspapers or magazines. They have adopted different ways of communication depending upon the local language and culture. A traditional media form is very general but it fulfils the purpose of communication in the whole society. Many types may not be popular, but they help to communicate. Traditional media comes in different forms and is known by different names in different regions of different countries.

Traditional media refers to the medium of mass communication as used by various global communities and cultures since ancient times. Folk media are one of the most vibrant representations of traditional media because they reflect communication channels of the ordinary people of a society or region. Since the ancient period, different types of the medium have been used in the world, which are as follows: Folk Dance, Folk Music, Drama, Opera, Tamasha, Nautanki, Khayal, Street Theatres, Puppetry, Painting, Storytelling, Motifs and Symbols, etc. It is interesting to note that in some forms of traditional media, all of the above can be used. For example,

‘Ramleela’, which is a folk play telling the story of Lord Ram in a classic style, is popular in north India and uses all the above traditional mediums.

‘Nagada’, one of the famous traditional forms of communication, is the announcement made by beating a drum with a stick which is used for communicating messages from one village to another through its beats.

‘Puppetry’ is a popular form of traditional media that exists in rural areas of India. Puppets are the characters made from the clothes and stories are told through them. Shadow puppetry, Glove puppetry, Rod puppetry and String puppetry are its fine forms. ‘Patachitrakatha’ refers to stories that have been told through the medium of palm leaf paintings.

‘Storytelling’ is an exciting format of traditional media that existed at a time when the written word form did not exist. For example, many historical stories of heroes who fought battles and participated in the freedom struggle were performed through song and drama. These were not written or documented. Instead, they were verbally communicated from one village to another. Story-telling forms such as ‘Harikatha’ and ‘Kabigan’ played an emerging role in communicating historical and epic stories.

‘Nautanki’ is a renowned form of folk art that involves a mix of music and dance and is widespread in northern India. It was a popular form of entertainment before the advent of cinema.

Fairs and festivals, including social, ritual and ceremonial gatherings, created a platform for people to meet and exchange thoughts.

Folk dance is a region-based traditional form and it differs from one place to another. Every region has a different dance form and dress, accessories, symbols and motifs. Traditional paintings, wall paintings, inscriptions, statues and stupas have been playing a vital role in communicating ideas and cultures from one generation to

another. Communication through traditional media helps in building good relations. For a long time, rural masses have been using the folk media to communicate with the mass for expressing their social, ritual, moral and emotional needs.

1.5: Print (Press) Media

Print media is an ancient medium of mass communication. It has been working as a mass media for many decades. Presently, it is being used socially and professionally. The term Press refers to the printing press, but in a journalistic way, it means the different types of printing mediums of mass communication. Newspapers, books, magazines, journals, periodicals, pamphlets, leaflets and hoardings, etc., are parts of Print Media. Professionally, Advertising is the most critical segment for print media. People are using print media for business purposes. The newspaper generates 70–80% of its revenue from advertising, and the remaining income is from sales and subscriptions. The part of the newspaper that is not advertising is called editorial content, editorial matter, and NEWS. Today producers cannot think about a boost in the sale of their products without advertising or marketing. Marketing is a prominent process to sell their product. Marketing is done through advertisement and advertisement is mostly done through print media. Marketing, commercial and print media is an integrated process to communicate with the mass. Print advertisements are more common and useful for business purposes. These types of ads can be in text format or in image and text format, which can easily be read by customers. Advertisements are published in Newspaper or Magazines. Print advertisements can be business oriented, promotional, social or for infotainment etc. A business-person uses print media for product advertisement. Social or public sectors use it for the promotion of their policies or ideas. Apart from this, advertisement is used through

leaflets, pamphlets, brochures and hoardings to communicate with people. These all are being used for professional print media.

1.5.1: Print Journalism- Print Journalism is a vital part of print media. It is a medium to provide social information to people. Print journalism is an old and active medium of mass communication. It is mostly used for newspapers and magazines. The present era is based on information sharing.

1.5.2: Newspaper- The newspaper has played an important role as a mass communication medium. It is used for dissemination of information among people. Before the invention of the internet, newspapers were the primary source of current affairs. Its journey started around five centuries ago in Europe. Germany was the country which published the first newspaper in the world. The various techniques of printing also underwent a lot of change over time. The development of rolls of papers in early 1800 enhanced the original Gutenberg press. The steam-powered press used iron, which replaced wood printing. The penny press was credited as the first true mass medium in 1833. In India, newsletter was started in king Ashok's era, which was used in the Mughal period. India's first newspaper, named The Bengal Gazette, was published on 19 January 1780. James Augustus Hikki was the editor of this weekly political & commercial newspaper. He is considered as the Father of the Indian Press. It started as a weekly newspaper during the East India Company's period. Censorship was introduced in 1795 in Madras. Newspapers cover a variety of fields such as business, sports, politics and art materials such as opinion columns, weather forecasts, editorial cartoons, advice columns and comic strips. Newspapers are published in daily and weekly mode. News magazines have a weekly format. The

newspaper has a variety of news, including business and finance, political events and personalities, crime, weather, natural disasters, health and medicine, science and technology, sports, entertainment, society, food and cooking, clothing and fashion and the arts.

Newspapers are focused on four criteria:

1. Public accessibility 2. Periodicity 3. Currency 4. Universality

Many nations have one or two leading newspapers that circulate through the whole country, and are called the National newspapers. In India, some national newspapers such as The Times of India and Hindustan Times are based on English language. There are many National Newspapers in India in the Hindi language. Rajasthan Patrika, Hindustan and Dainik Bhaskar are sold throughout the country.

1.5.3: Magazine- Magazine is a vital print medium of mass communication. The origin of the magazine was in the 17^{th} century. The first magazine was published in 1665 by the French journal Des Scavens. Since the 19th century, magazines have become the predominant international medium. The pattern of the magazine differs from the Newspaper. It can be classified in terms of its publication and time-wise as Weekly, Monthly, Bimonthly, Quarterly, Annually, Biennially, etc. The subject of Magazines can focus on Political issues or Current affairs or Sports or Lifestyle fields including business-related stories or worldwide affairs. Functions of magazines are to provide information, entertainment, advertisement and editorial facts to the mass or the people. There are some magazines which are being published online. Along with this, other experiments are also happening, such as magazines on CDs or podcasts. From the perspective of an advertising business, magazines allow messages to be highly targeted. Magazines also offer a variety of audiences which may be highly targeted and subject-specific like Vogue, Femina and Vanita for women, from India

Today to highly detailed Cat Fancy, which offers a lot of options to both consumers and advertisers. Categories include General Interest, Celebrity, and Food, Lifestyle, Service, Fashion/ Beauty, Shelter (home), Art, Music, Entertainment, Regional/Local/City, Business, Newsweekly, Health, Literary and Travel. Many of these can be categorized into ethnic groups, language groups or lifestyles.

1.5.4: Books- Since ancient times, books have been playing an essential role in communicating to the society. It has become an essential tool for record-keeping and transmitting knowledge to the future generation. But these faced some barriers in communicating with a large no. of people. Firstly, books were not printed but transcribed by hand. Secondly, the low literacy level in the masses created limitations in reading the books exclusively. In 1452, Gutenberg conceived the idea to bring together the technologies of paper, oil-based ink and the winepress to print books. It was in the 19th century that books developed as a mass medium. Books have become one of the most effective mass media in the contemporary world. It is a good source of education that provides information, knowledge, literacy and entertainment through pictures, images and language. Books offer permanent records. Some books that were published several years ago are still in existence. Some ancient books, like Bhagwat Geeta, Ramayan and Veds, are the landmark of knowledge. Since the beginning, they have demonstrated their capacity to bind traditional societies together and give rise to new and revolutionary thought patterns. Presently, books are providing education and literacy to the community in the form of the Novel, Grants, Comics, Subject-Specific Books etc. Books are categorized into Trade Books, Paperback books, Textbooks and Professional Books.

1.5.5: Newsletter- Newsletters can be an effective, low-cost way to reach readers. A newsletter provides information in the briefest form. Its readers are selective.

Commercial concerns usually use newsletters to reach their clients or potential clients in an effective way.

1.5.6: Pamphlets and Leaflets- Both pamphlets and leaflets are adequate to convey a message to the target audience. However, these usually have a localized influence. They are informative and persuasive rather than entertaining.

1.6: Electronic Media

Electronic media is an important medium to communicate with the masses. Electronic media has become the backbone of mass communication. Electronic media refers to Television, Radio, Telephone, Computer and many other analog and digital electronic communication mediums.

Mass communication, through the latest technology, has provided speedy gathering of information and dissemination and this has become an essential part of modern society. Marshall McLuhan said that electronic technology is reshaping and restructuring patterns of social dependency and every aspect of personal life. The extraordinary information explosion has dramatically reduced time and distance and has converted our world into a Global Village. Electronic media has transformed communication to share, store and gain information and knowledge. Society must understand these changes and effects in order to develop our electronic resources for their benefit.

These changes have reduced the distance and time in disseminating the information, events, and ideas. The access of the information has become easy and universal. Information exchange has become cheaper and simpler. It has become easy to interact and exchange ideas with people. Maximum reach and low reception costs encourage centralized information dissemination. Electronic media has facilitated multi-channel

listeners and viewers with the opportunity to pick and choose from the programs of their liking. Electronic Media has empowered the society to give knowledge, information and thoughts about politics and society. It has provided the medium for transmission and broadcast of News, Entertainment Programs, Drama, Educational Programs, etc. Electronic media is divided into two mediums:

1. Radio
2. Television

1.6.1: Radio

History tells the story of Radio. Henirich Hertz was a German physicist who was the first person to prove that electric waves could be transmitted and received wirelessly. Today, this is recognized as the fundamental building block of radio and every frequency measurement is called the Hertz. There was a certain amount of controversy regarding the first person who invented the radio. In 1893, the inventor Nikolai Tesla had demonstrated a wireless radio in St. Louis, Missouri. Despite this demonstration, Guglielmo Marconi was called the father and inventor of the radio because he had made the first wireless telegraphy patent in England in the year 1896. After a year, Tesla filed for patents for his basic radio in the U.S. which were granted in 1900. Marconi placed his name in history when he became the first person to transmit signals across the Atlantic Ocean on December 12, 1901. The New York Station transmitted the first radio news bulletin in 1916 during the elections for the US President.

Radio telecasting in India was started in 1923. Private ventures collaborated with three radio clubs which were established in Bombay, Calcutta and Madras (now Chennai). The first radio program was transmitted in India in June 1923. The Radio Club of Bombay was the first-ever radio broadcaster in the country. These stations

had to shut down in 1927 due to lack of sufficient money. The Indian Broadcasting Company (IBC) was established on July 23, 1927. IBC started the operations on an experimental basis under the Department of Industries and Labour. Lionel Fielden was appointed the first Controller of Broadcasting in August 1935. Akashvani Mysore, a private radio station, was set up in the following year. On June 8, 1936, the Indian State Broadcasting Service (IBC) had been changed into All India Radio.

The Central News Organisation (CNO) was started in August 1937. In the same year, AIR was taken over by the Department of Communications and after four years, it came under the Department of Information and Broadcasting. When India got independence, there were six radio stations in India, which were located at Delhi, Bombay, Madras, Tiruchirapalli, Calcutta, and Lucknow. At that time, AIR transmitted to coverage of just 2.5 % of the area, which covered 11% of the population. The following year, CNO was divided into two divisions: the News Services Division (NSD) and the External Services Division (ESD). In 1956, the AKASHVANI became the National Broadcaster. The Vividh-Bharati Service was launched in 1957 with popular film music as its primary entertainment.

In the present scenario, All India Radio is one of the largest media organizations in the world. It has an extensive network of 262 radio stations, which are broadcasting programs in 23 languages and 146 dialects. AIR is accessible to almost the entire population of the country and tentatively 92% of the total area. It has created a vast spectrum of socio-economically and culturally diverse people.

External Services Division has broadcast the different radio programs in more than 100 countries in 11 Indian and 16 foreign languages. These have been aimed to inform the overseas listeners about the developments in the country as well as to provide a rich content of entertainment.

All India Radio has broadcasted 647 bulletins daily in 90 Languages/Dialects. At present, AIR is operating 18 FM stereo channels, called AIR FM Rainbow, which aim to target the urban audience in a refreshing style. AIR is switching from analog to digital technology in a phased manner. It has the target to complete digitization by 2017 with the Digital Radio Mondiale technology. The listeners will be able to listen to highly enhanced transmission quality soon. In modern society, radio is a standard technology for entertainment and information. In fact, in today's world, radio has become an essential instrument in people's life.

Presently radio technology is spreading world-wide with mainly three formats of radio which are as follows:

1. FM Radio, 2. Community Radio, 3. Web Radio.

1. FM Radio-

FM broadcasting began on 23 July 1977 in Chennai (then Madras), and was expanded during the 1990s. India's first private FM station – Radio City, Bangalore, came on air in 2001. From the past decade, FM radio has been enjoying spectacular success with 200 different stations are now in operation. FM industry is going beyond economics. It has seen remarkable growth in revenues and listenership. Many FM Channels which are focused on entertainment, social issues, information and education are running in India.

2. Community Radio Channel

Community radio is a type of radio service that caters to the listeners of a specific area. It broadcasts the audio material that has relevance for the local audience. Community radio is commonly non-profit and non-commercial, and many a times, it is used for infotainment and education purposes. According to the Ministry of Information & Broadcasting India (2018), 217 community radio stations are operating

in India.. These are mostly education-based community radio stations (Ministry of Information and Broadcasting, 2018).

3. Web Radio- Online radio is a web-based audio channel that reaches the audience through the internet. The Internet has become a vital medium for audio and video streams and files. Web radio is becoming popular, especially among young people and internet users. The first Internet radio service was launched in 1993. Presently, some popular internet radio platforms and applications in the world include TuneIn Radio, iHeart Radio, and Sirius XM. It is a software-based system that is run on the internet. All types of digital radio can be run on this platform. Internet radio is usually accessible from anywhere in the world with a suitable internet connection. A February 21, 2007 *"survey of 3,000 Americans released by consultancy Bridge Ratings & Research"* found that *"as much as 19% of U.S. consumers 12 and older listen to Web-based radio stations"* (Kharif, 2007). Edison Research and Triton Digital presented their research about internet radio in 2015- Infinite Dial webinar. They found that in 2015, 53% of Americans 12+ are monthly listeners of online radio, or approximately 143 million American people (Edison, 2015).

1.6.2: Television

Television has become a trendy and approachable medium of mass communication. It has been playing an important role in communicating with the society for some decades. We can't imagine a world without television. Without daily soaps, serials, news channels or cricket matches, it will be a boring world. Today, television has become an integral part of the society. It is a vast industry that serves thousands of programs in many languages over the world. Television has created a bridge between different international societies. Radio and print were already there before the arrival

of TV. Several inventors were working on the creation of a technology that could transmit sound as well as visuals. But John Baird is generally regarded as the father of television.

1.6.2.1: Origin of Television

Foundation of Television started in 1873 when the telegraph operator Joseph May discovered the photoelectric effect. The cathode ray tube with a fluorescent scene was invented in 1897. The French word "télévision" was used for the first time in 1900 by the Russian physicist Constantin Perskyi who delivered a speech during the great Paris exhibition. The word "télévision" became "television" in English.

The first television service was started in Berlin in March 1935, which was based on 180 lines/frame and 25 frames/second. Pictures were recorded on film and then scanned using a rotating disk. Electronic cameras started to record videos in 1936, at the time of the Berlin Olympic Games. In November 1935, television broadcasting started in Paris with 180 lines/ frame, 25 frames/second mechanical systems for picture analysis. In the same year, the EMI company in England developed a fully electronic television system with a 405-line definition, 25 frames/second, and interlace. In November 1936, BBC launched the first television broadcast service in London.

The first practical demonstration of color television was done by Baird in 1928. He used mechanical scanning with a Nipkow disk having three spirals. Each spiral had a separate set of color filters. In 1929, Vladimir Zworykin demonstrated the first practical electronic system for both the transmission and reception of images using his improved kinescope tube. In same year, Bell Labs demonstrated a mechanical color television system. In France, Georges Valensi (1938) proposed the principle of dual compatibility, which means black and white receivers should also receive the program

which was transmitting in colour. As 1940 approached, only cathode-ray tubes were envisaged, at least for displaying the received picture. In 1940, Dr. Peter Goldmark at CBS developed an electronic color television, but it was incompatible with the 525-line broadcast standard.

Cable television was introduced in Pennsylvania. The purpose was to extend the reach of television in rural areas. In 1950, Zenith Radio Corporation created the first television remote control. The first successful program in color was transmitted by CBS (Columbia Broadcasting System) in the USA in 1953. Colour television broadcasting officially began on The Colgate Comedy Hour in 1953.

In 1933 W9XK, State University of Iowa made the first television broadcast from an educational institution. In 1950, Iowa State College launched WOI, the first television station owned by an educational institution, although it operates commercially. The University of Houston started the first non-commercial educational television station, KUHT, in 1953.

1.6.2.2: Television in India

Doordarshan (DD), a division of Prasar Bharti, became an Indian public service broadcaster. Presently, it is one of the largest broadcasting organizations in the world in terms of the studios and transmitters. Doordarshan has started to replace its analog transmitters with digital transmitters. It offers a three-tier program service – National, Regional, and Local. The National programs focus on events and issues which are of interest to the entire nation. These programs include news, current affairs programs and documentaries on science, art, culture, environment and social issues. The regional programs are broadcasted on DD National at a specific time and also on the Regional Language Satellite Channels. The local programs are area-specific and focus on local issues. Television (Doordarshan) had come to India on September 15, 1959,

with experimental transmission from Delhi. It was a small beginning with a studio, a low power transmitter and only 21 community television sets. AIR (All India Radio) provided the engineering and program professionals for this. All India Radio started regular daily transmission in 1965. Doordarshan began a five-minute news bulletin in 1965; Pratima Puri was the first newsreader. Krishi Darshan was the first program to be telecasted on Doordarshan on 26 January 1967, and it was one of the longest-running programs on Indian television. In 1972, television services were extended to Mumbai. Till 1975, Doordarshan covered only seven cities. Television stations had been established in Calcutta, Chennai, Srinagar, Amritsar, and Lucknow. In 1975-76, the first Satellite Instructional Television Experiment was done in India. It made television programs available for the people of 2400 villages in the rural area. For one year, it all was done through a satellite.

Television services were separated from AIR Radio in 1976. Every office of the All India Radio and Doordarshan was run under the management of two separate Director Generals in New Delhi. Finally, Doordarshan became the National Broadcaster when it started telecasting national programs in the year 1982. In the same year, color TVs were introduced in the Indian markets.

On 15 August 1982, the Independence Day parade program became the first color live telecast national program of India. At the same time, this technology was used in the Asian Games which were being held in Delhi. The time of the 80s was the golden era of Doordarshan during which programs like Hum Log (1984), Buniyaad (1986-87) and mythological dramas like Ramayana (1987-88) and Mahabharata (1988-89) glued millions to Doordarshan. Many other popular programs entertained people, including programs based on Hindi film songs like Chitrahaar and Rangoli and crime thrillers like Karamchand (starring Pankaj Kapoor), Byomkesh Bakshi and Janki Jasoos.

In 1983, UGC launched a countrywide classroom educational program. In 1985, the first regional satellite network was launched in Maharashtra. DD Metro channel was launched in 1993 and the year 1994 saw the restructuring of different channels of Doordarshan. DD l to DD 13 were 13 different language and region-based channels. Doordarshan is the only network that has been permitted to broadcast television signals domestically. It was a breakthrough in communications for the Indian Television in July 1995, when Doordarshan agreed for US $1.5 million annual fees and 50 percent of advertising revenue when it exceeds US $1.5 million, to allow CNN to broadcast twenty-four hours a day via an Indian satellite.

Now, more than 90 percent of the Indian population can watch Doordarshan (DD National) programs through a network consisting of more than 1416 terrestrial transmitters. Today, Doordarshan has 67 studios for the production of TV programs.

In the mid-1990s, Cable TV brought a revolution in home entertainment television. Doordarshan found itself struggling to compete with the privately-owned quality entertainment channels powered by commercials and the latest technology. Doordarshan took a new step with the introduction of an international channel, DD India in 1995. To compete with the privately-owned channels, Doordarshan has launched two new TV Channels, one sports (DD Sports) and one News current affairs based channel (DD NEWS), in 1996.

1.6.2.3: Cable and Satellite Television:

At the end of the 1990s, there was a big challenge for Doordarshan. The CNN covered the Gulf War and telecast it on the national channels of most of the western and Asian countries. A Hong Kong-based group of companies launched STAR (Satellite Television Asian Region) television. Some channels like Star Plus, Prime Sports, BBC and MTV have been broadcasting their signals one by one. The Hindi

channel Zee TV started its programs by collaborating with Star TV. Zee TV was launched in October 1992 and became the driver of the expansion of cable television. Satellite television was a boon for cable operators. They got the motivation to receive the programs of Star TV, CNN, ATN, CNBC, NDTV, AajTak, BBC, 24 X 7, Headlines Today, STAR Movies, ZEE TV, SONY, SAHARA ONE, ZEE CINEMA etc. These private ventures provided an alternative of the DD to Indian families. These channels were gaining popularity and they were not confined only to metropolitans, but also became popular in the small towns and villages of India. After receiving reports about satellite TV popularity in the small cities, the Ministry of Information and Broadcasting, Govt. of India, decided to launch some more channels through Satellite INS AT 2B. In 1984, Cable television had come to the lower middle class localities in the bigger cities of Gujarat and Maharashtra. As the investments required were small, the local entrepreneurs took this opportunity in a big way. Cable or satellite TV has created strong demand for the growth of the satellite and cable industry in India. Television is a technology-based medium. This industry is growing continually and the development of this technology has been providing more information, entertainment and education to the society.

1.7: Television in Education

Television constitutes an important medium to provide information to viewers. It has a unique feature of combining the audio-visual technology. It is considered as being more effective than an audio medium. Television provides information, entertainment and education related programs. As regards education, television has been providing knowledge to learners with some educational TV channels. In 1932, State University of IOWA, USA, used television as an instructional medium on an experimental basis. *Realizing the power of television for educational purposes, "the Federal*

Communication Commission in the USA reserved 242 frequencies for educational broadcast on no profit and non-commercial basis in 1952" (Magnuson, 1965).

In many developed and developing countries of the world, television and radio are used as educational tools. The United Kingdom was the first country that used Television as an educational tool in 1952. In 1955, the BBC started regular educational television broadcasting for schools. In the UK, more than 85 percent of learners of the population watch Educational TV programs for some 10 hours per week. In 1952, the Federal Communication Commission of America released an order which reserved approximately 12 percent of all available television channels for education. The commission created 242 television channel assignments for this purpose.

The first educational television (ETV) station came on air in Houston, Texas, in April 1953. In 1954, the National Educational Television started to provide thousands of recorded programs for use by instructional television stations. The teachers in Philadelphia of the USA received excellent outcomes from educational television. Educational Television was becoming a reliable medium of teaching the students of distance learning. Ohio University and the University of Maryland also started considering how to bring distance learning to select student populations with the help of television. In the early 80s, twenty-two universities were involved in offering video recordings of lecture courses in management, economics, and engineering. The Association for Media-Based Continuing Education (AMCEE), USA, has been focusing on rapid advance courses for Distance learning. AMCEE has assembled a formidable array of video-centered distance learning courses. Such study materials can be used at home or at work, and they are completely up-to-date.

1.7.1: Educational Television in India

Television first came to India on 15 September 1959 as a National Television Network of India which was a UNESCO - aided project under the auspices of All India Radio (AIR). The project focused on television as a medium of education and community development. It started on an experimental basis in 1959 in New Delhi. The Tele-clubs was organized at 21 community centers and the transmission was limited to a 24 km radius. A convenor was appointed at each Tele-club for managing the viewing and to conduct post-telecast discussions. Their role was to convey the viewer's reaction and comments as feedback to the All India Radio. The one-hour programs were telecast on every Tuesday and Friday. Around 140 to 200 persons viewed the programs at each Tele-club. The impact of these programs was evaluated by the National Fundamental Education Centre and Indian Adult Education Association, New Delhi. The findings of the experiment were encouraging and the project was considered a success. In 1961, the Educational Television project was designed for secondary school students in Delhi. Its aim was to improve the standard of teaching. This project was started on an experimental basis for teaching Chemistry, Physics, Hindi and English to students of Class XI. The video lectures were recorded based on the syllabus and were telecasted during school hours as a part of school activities. According to Paul (1968), 'by and large, the television schools did somewhat better in the test than did the non-television schools'. Delhi Agriculture Television's project Krishi Darshan was initiated on January 26, 1996. It focused on communicating agricultural information to the farmers. It was a project on an experimental basis for the 80 selected villages of Delhi through watching television and further discussing among themselves. The experiment was successful and it became the first long term running program of Indian television.

In 1975, the Satellite Instructional Television Experiment (SITE) project was launched on an experimental basis. It started on 1 August 1975 and continued for a period of one year. It focused on the villagers and their primary school-going children of selected 2330 villages of six states- Rajasthan, Orissa, Karnataka, Bihar, Madhya Pradesh and Andhra Pradesh. Two types of programs were telecasted out of which one was based on development of education in the area of agriculture and social issues. The second was a 22.30 minutes children based program, which was telecast in Hindi, Oriya, Kannada and Telugu language. Indian National Satellite (INSAT-1) (A) was launched on 10 April 1982 and India became the sixth country to own a communication satellite. After one year the INSAT -1(A) became dysfunctional and the transmission was shifted to the terrestrial system. On 30 August 1983, India launched INSAT -1(B). Educational TV programs were telecast through INSAT 1 (B) with great success.

The main objective of the Indian National Satellite project (INSAT) was to make the rural masses aware of the latest developments in the areas of agricultural productivity, hygiene and health. As a part of the INSAT Education project, ETV broadcast the programs through terrestrial transmission from 15 August 1982 in Orissa and Andhra Pradesh. Later, in June 1983, other states, namely Bihar, Gujarat, Maharashtra and Uttar Pradesh, were added under INSAT service using INSAT-1 (B). ETV made educational programs for two different age groups of school children (5-8 years and 9-11 years), which were telecasted daily. They were a capsule of 45 minutes duration, consisting of two separate programs-one for the lower age group and the other for the upper age group.

1.7.2: Higher Education Television Programme

University Grants Commission-Higher Education Television Project (HETV) was started in 1984. Indian University students were the target audience for this project. The UGC collaborated with INSAT for launching an educational television project. It was popularly known as 'Countrywide Classroom.' The project aimed to update, upgrade and enrich the quality of education while extending their reach. UGC set up an inter-university Consortium for Education Communication (CEC). CEC had a chain of about 20 audio-visual media Mass Communication Research Centres in the country, whose aim was to provide high quality programs to students. In May 1991, the IGNOU-Doordarshan programs started telecasting, which were designed mainly for Distance Learners. Initially, they were telecast on Monday, Wednesday and Friday from 6.30 to 7.00 AM through the national network of Doordarshan to provide Tele-counselling to students of open universities in remote areas.

Ministry of Human Resource Development with Information & Broadcasting, along with the Prasar Bharti and IGNOU, launched GyanDarshan (GD) jointly on 26th January 2000 as the first dedicated Educational TV Channel of India. IGNOU took the responsibility of being the nodal agency for up linking/ transmission. On 26th January 2001, Gyan Darshan became a non-stop, daily 24-hours transmission educational channel. "The programming constitutes 23 hrs. of domestic programs sourced from partner institutions and one hour of international programs. Transmission of 12 hrs. each for curriculum-based and enrichment programs is being made. The programs of IGNOU-CIET-NCERT, including NOS, are telecast for four hours each, IIT programs for three hours, CEC-UGC programs for two and a half hours and one hour each for TTTI and Adult Education" (IGNOU profile, 2002).

GyanDarshan has made its presence in all Open Universities and most of the prominent conventional Universities or schools.

1.8: The evolution of New-Media

New Media is used to define all content related to the internet and the interplay between technology, images and sound. The definition of new media is dynamic, and thus frequent changes occur in its descriptions. In a broader sense, New Media includes internet such as websites, online newspapers, blogs or wikis, video games, CD-DVDs, mobile apps, social media, Electronic Digitised materials like E-books, E-SLM (Self Learning Material) etc.

New Media is identified with the use of a computer for distribution and exhibition rather than production. Similarly, texts distributed on a computer, like websites and electronic books, are considered to be new media. Accordingly, photographs that are saved in a CD-ROM and require a computer to be viewed are considered new media.

The printing press in the fourteenth century and photography in the nineteenth century had a revolutionary impact on the development of modern society and culture. Presently, the new media revolution is in continuous mode– the shift of all cultures to computer-mediated forms of production, distribution, and communication. In contrast, the computer media revolution affects all stages of communication, including manipulation, acquisition, distribution, and storage.

In the middle of the twentieth century, a modern digital computer was developed to perform calculations on numerical data more efficiently. Digital Computer takes over the numerous mechanical tabulators and calculators widely used by companies and governments. In a parallel movement, there was a rise of modern media technologies that facilitate the storage of images, image sequences, and text using different material

forms– photographic plates, film stocks, gramophone records and sounds etc. At that time, all existing media was being converted into numerical data that was accessible through computers. Due to this technological intervention, graphics, moving images, sounds, shapes, spaces, and texts have become computable and all these digital material created New Media. Lev Manovich (2001) suggested five different categories of new media as- numerical representation, modularity, automation, variability and cultural transcoding.

The history of media and computing became more advanced when the German engineer Konrad Zuse began building a computer in his parents' apartment in Berlin. It was the first working digital computer. One of his innovations was using punched tape to control computer programs. *The tape Zuse used was a discarded 35 mm movie film. Zuse's film, with its strange superimposition of binary over iconic code, anticipates the convergence that will follow half a century later. The two separate historical trajectories finally meet. Media and computer– Daguerre's daguerreotype and Babbage's Analytical Engine, the Lumiere Cinematographie and Hollerith's tabulator – merge into one* (Manovich, 2002). All media contents are translated into numerical data accessible by the computer. The media contents, like graphics, moving images, sounds, shapes, spaces and texts, become computable, which is only sets on computer. In short, the media becomes New Media. Sometime ago, the computer could read a row of numbers, outputting a statistical result. Now it can be digital and read the blur images, pixel values, adjusting its contrast, color correction and replacement of colors. Digital computing technology is creating a new world for media known as New Media. New media follows all still, audio and video contents which are digitized by digital technology.

Among various types of new media, video webcast channels and web radio are of great importance. New Media has been viewed as "new media," which are digital, often having characteristics of being manipulated, networkable, dense, compressible, and interactive (Flew, 2008). However New Media does not include television programs (only analog broadcast), feature films, magazines, books, or paper-based publications – unless they contain technologies that enable digital generative or interactive processes (Manovich, 2003). Social Media is a part of New Media. Social Media consist of YouTube, Facebook, Twitter, LinkedIn, Google+ or similar other web-based services facilitating group interaction. In the present era, New Media has penetrated the whole world. New Media has been playing a pivotal role in the area of Education. It provides an interactive e-learning platform for learners, facilitates instruction and strengthens the teaching-learning process. Presently, many educational institutions are widely using the New Media platform for teaching and learning. Creative changes took place in the non-formal education system in the 21st century.

Face to face Learning turned to e-Learning. E-Learning has gained popularity worldwide. Open and distance learning provides an easy and flexible education system. ODL system offers students an accessible and door-to-door education mechanism. It bridges the gap between formal education and drop-out students and learners. At present many Educational Institutes, Academies and Universities are widely using e-video learning through New Media. New Media technology has become the most modern pedagogical path for Open Distance Learning. It has the capacity to provide education using a multisensory approach. New Media based learning system is equally beneficial to normal as well as exceptional learners (blind, deaf, dumb, gifted and creative).

New Media can be classified into Digital Media, Online Media and Social Media. All three technologies create New Media terms.

1.8.1: Digital Media- It refers to all media which is operated digitally or run on the computer technology platform. According to Lister, Dovey, Giddings, Grant and Kelly (2009), digital media refers to all the information or data is encoded in numbers. The most common numerical system runs on the binary code of 0 and 1. The interpretation of the digital codes is independent of its representation. The analog media is encoded and the information and data are stored in digital objects. Digital media is a revolutionary medium and it provides the people a path for digital communication. Mobile Phones, Computers, Smart Televisions, DTH, Hard Disks, iPod, Tablets, USB drives and DVDs are considered as modes of digital communication. Digital media results in some astonishing outcomes for people. People can now read books in digital format via the internet or Kindle. Photographs and texts can be merged digitally and watched on mobile or uploaded on social sites. The office or home walls can be decorated with digital photo frames. Information can be compressed and saved in very small spaces using portable devices like USB drives and external hard drives. Cloud technology (servers to which users connect remotely through the internet) can provide unlimited storage and accessibility from anytime and anywhere. There can be speedy availability of data and a non-linear mode can also be provided. People have stored all the books from the computer in a flash drive. After that, they can access or read any book in this collection in a matter of seconds and they can search or switch from one paper to another paper in this book. A more ambivalent outcome of digitalization is that data or information can be manipulated as compared to analog media. There are options to edit and retouch photographs and

texts in this digital media world. Digital media has had a profound effect on the social-economic world.

1.8.2: Online Media- It is the second part of New Media which refers to the internet world. The term online media represents connectivity to computers or mobile phones through the internet. Connectivity is indeed a vital attribute of online media. It can link the many people at the same time. Connections to distant people were already possible with telegraphs and later with telephones. But online media connectivity has replaced analog with digital platform and from this point of view, it is providing quality and degree of connections. Now a days, online media has become a platform for people to communicate with each other in the world. It can be related to www (World Wide Web). Internet calling, e-banking, e-marketing and e-learning etc. are modes of the processes which are using online media services. Online media has created a path for e-learning. It has become easy to learn via online platforms.

1.8.3: Social Media- Social Media is defined as "a group of Internet-based applications that are built on the ideological and technological foundation of Web 2.0 and that allow to creation and exchange of User Generated Content" (Kaplan and Haenlein, 2010). Social media term exclusively represents New Media. Facebook, Twitter, WhatsApp, YouTube, LinkedIn, blogs and Wikipedia etc. are a part of social media. In the current scenario, social media is affecting people socially, economically and politically. In social life, it connects one person with another and enables them to share their thoughts, feelings, messages and information. The companies are using social media for marketing purposes. Political parties use it in different ways.

New Media is a big basket filled with all digital media formats. To understand the New Media, the researcher should focus on some theories. These talk about media

turning into New Media. New Media is a broad term that shows the relation between media and society.

Marshall McLuhan shows his vision about the electronic media. He established a theory that through the press, humanity can fully connected and can share the thoughts with the entire world. The fission and alienation associated with the mechanical age as an industrial revolution are now replaced in the electronic revolution as the compulsion to participate and become involved. McLuhan is the first theorist to discuss that the importance of media is not focused on the contents they circulate but in the form of media themselves. He proposed a statement that 'the medium is the Message' (McLuhan, 1964). McLuhan contended that the contents of the new media incorporate all other previous media. His popular opinion is that the New Media are extensions of human senses. He suggested that ' all media, from the phonetic alphabet to the computer, are extensions of man that cause deep and lasting changes in him and transform his environment' (McLuhan, 1964).

New Media technology is leading to different forms of socio-political platforms. Kittler summarised in his research about New Media that different techniques lead to the constitution of different discourses and power configurations. He emphasized the materiality technology. Castells suggested that new media technologies are allied with a new form of social organization, which roves around the idea of the network. In his book *The Network Society,* Castells explained 'as an ahistorical trend, dominant functions and processes are increasingly organized around networks. Networks constitute the new social morphology of our societies and the diffusion of networking logic substantially modifies the operation and outcomes in processes of production, experience, power, and culture'. Now, New Media is working on the networking of society. Society is turned into a network society with new ideas that include space and

time. Social media technology offers educators an opportunity to engage learners in the online classroom. Social media is structured for individuals, communities, companies, organizations or classes in the university's lifestyles, chats, friendships and e-learning.

1.9: E-Learning

E-learning is an Internet-based learning system in the digital environment. E-learning provides a quick learning process at reduced costs. It has increased access to learning and participatory approach to the learning process. E-learning is an umbrella term that shows learning done by digital tools, usually connected to a network, allowing to learn electronic materials anywhere and at any time.

E-learning is like another form of education, and it is expected that e-learning is suitable as an online classroom experience. It is accomplished over the Internet and is the convergence of learning and Internet. E-learning is the delivery of content through digital electronic media. E-learning activities are based on digital format and new skills and methods are taught with software to the learner (Nayak, 2013). The term E-learning has a wide range of processes such as web-based learning, computer-based learning, virtual classroom, digital collaboration etc. It includes the delivery of contents through Internet network, audio and video medium and satellite communication to the users.

Before 1983, computer evolution was at its beginning stage, and Instructor-led Training (ILT) was the primary training method. ILT offered learners to study through the Internet with the instructor and participants. From 1985, the Multimedia Era started which consisted of the development of Windows, Macintosh, CD-ROM and PowerPoint. Visually engaging computer-based training (CBT) courses were delivered through CD-ROM. In 1994, the first e-learning process was introduced as

the web evolved training. The development of e-mail, web-browsers, audio/video and JAVA has changed the face of multimedia training. Today, New Media based e-learning is creating a new study pattern.

1.9.1: E-learning through New Media

New Media technology is providing educators a large area of cloud computing with an opportunity to engage learners online. New Media is a structure consisting of social media, Internet-based technology and digital environment. Audio-visual content is not used in a proper fashion for ODL. The majority of Indian ODL students and teachers are not aware of web media technologies. The majority of Indian ODL students are not friendly with New Media technology. Available audio-visual content is not good enough to foster the needs of ODL students. Other difficulties include lack of availability of systems, bandwidth and uptime of the computing environment and network.

1.9.1.1: E-learning via Facebook

E-learning can be done by creating a closed or an open group to share information, discuss ideas, quizzes, questionnaires, audio-video materials, pictures, or even an entire page on a specific course or module. Learners can access and freely talk about their course-related issues and can raise questions on this platform. Facebook provides facilities to promote collaborative learning and improve relationships between students and learning tools such as videos, images, boards, chatting and private messaging. Facebook allows the creation of their own information page related to e-learning and sharing related learning materials on that page.

1.9.1.2: E-learning via twitter

Twitter can help students in e-learning via tweets of educational materials. It allows following subject related persons, friends and experts. Twitter provides a way to share

highlights, make statements, upload pictures etc. Instructors should have created an account and communicated their # hashtag to their students and followers. Twitter has many benefits when it comes to reaching the learners. Learners can create learning hashtag, with the help of which they will be able to give feedback and communicate on the materials.

1.9.1.3: E-learning via YouTube

YouTube is an excellent tool for e-Learning. It is cost-effective and beneficial for the virtual classroom. YouTube provides a massive platform for learning via audio-video lectures, spots, short films and documentaries. While learning, viewers can 'like' and 'share' the video content as well as 'comment'. YouTube offers an opportunity to create one's web-based channel on which one can play the audio-video tutorial. In the present scenario, YouTube has become the finest tool for audio-video platforms. YouTube not only provides an e-learning facility, but one can also monetize one's video and earn money from different ads. YouTube contains a large variety of high-quality audio-video material on every subject, and modern LMS platforms, such as e-Front Pro or Moodle, make it easy to embed its videos in one's e-Leaning courses.

1.9.1.4: E-learning via Instagram

Instagram is a New Media tool that is included in social media, but its limitation is that it is all about visual content i.e. either pictures or videos that are only up to 15 seconds long. Instagram only provides a platform to post photos, visuals (max. 15 sec) or share video links. It is not much good as a content repository to get course-related material. It is not a dedicated e-learning tool. Apart from this, New Media provides some tools to support e-learning such as Google+, LinkedIn and Wikipedia.

1.9.1.5: E-learning via WhatsApp

WhatsApp is the most acceptable New Media tool in the world at present. It is a basic mobile-based application that can run on PC. It is a big modern communication weapon which got fired in the communication world. It offers continuous messaging or correspondence, including the sharing of data or media content such as sound, video files, pictures and location. It provides an encrypted application platform that lets its users send and receive information ranging from text, smileys, images, voice calls, voice notes, videos and voice calls.

1.10: Distance Education

The foundations of Distance Education were established in the late 1800s. The first form of distance education was a correspondence course study. Sir Issac Pittman founded Sir Isaac Pitman's Correspondence Colleges in England in the mid 1840s. Correspondence courses took advantage of the then new rural free delivery of mail to deliver course material to students. Students worked independently on course material and interaction between faculty and students was limited to one-way communication. Within a few decades, correspondence courses were developed in Germany, Canada, Australia, the Soviet Union, Japan and the United States (Matthews, 1999).

Distance education is nearly a 150 years old concept. However, it has been emerging continuously with new innovative mediums. The United States, Canada, Australia, Russia, India, most of the African countries and countries like England, Germany, Turkey, Sweden, the Netherlands in Europe and Eastern European countries as Poland, Hungary and Romania etc. have been studying distance education based courses since nearly more than a hundred years. It means that the roots of distance education roots virtually go back to almost 150 years.

Demiray & Isman classified the history of distance education into five clear periods.

1. A period before correspondence education- Some educational activities which tried to aid the education process before constructing and establishing correspondence education systems.

2. Heavily applied correspondence education systems period- Correspondence education systems widely used printed materials by using the postal system for delivery such as books, newspapers, guide books or other printed mediums for realizing their aim.

3. Instructional radio and television which is called one-way communication by broadcasting period. In this period, radio and television were used functionally beside printed material for the audio and visualizing of course materials.

4. Then started two- way communicational audio and interactive period. With two-way audio and video between teachers and students, through emerging technologies, educators are able to include more interaction in educating at a distance.

5. In the delivery of distance education, the fifth period can be described as the period using satellite and future technologies that are integrated via computer and computer combining systems. Telecommunication technologies such as radio, television, video cassette, computer, satellite and fiber-optics are aiding educators by development in the communication and electronic industry.

However, St. Paul, who faced the challenge of explaining to a diffused community, evolved a method of distance education. He wrote letters to individual church groups and asked them to read them to their community when it assembled for worship. Since each copy had to be hand-written and many church members were illiterate, there was little opportunity for individuals to study Paul's letters at home. It was a pioneer of the remote-classroom approach to distance education. It was not face to

face learning and it was asynchronous communication because he was not present when his letters were studied. However, for the church group, communication was synchronous because they listened together to the reading of the letters (Daniel, 1995).

According to Daniel (1994), the primary models of distance learning were only a pre-printed correspondence courses based system. According to this approach, there was no face to face or voice to voice interaction between teachers and students, and only the postal service was available for educators to deliver their instruction to students who lived in other places.

Teachers sent their correspondence study materials to their students by postal service. The students also returned their answers to the teacher by post. Now, New Media based distance education, including real-time interaction, is a part of distance teaching and training at all levels. Of course, preliminary distance education applications were running in correspondence education form. The elementary correspondence style was started by appearing in newspapers, aiming to educate people.

While the term 'distance education' is more than a hundred years old, recently, the field is restructured parallel to the innovations and developments ITC. In effect, rapid progress in technology changed the nature of distance education.

The main aim of correspondence education was to provide equal educational opportunities for everyone in the country. It helped colleges, universities and state departments of education to provide equal education to the students. Distance education has its origins in correspondence education. The correspondence education system was developed in Canada, New Zealand, Australia, China, India and the USA in places where people lived far away from each other.

The distance education system began in Britain in 1836 at the University of London.

In 1840, England's newly established penny post allowed Isaac Pitman to offer shorthand instruction through correspondence. According to Glatter and Wedell's study on, 'Study by Correspondence' correspondence education had been started in 1840 when the original instruction was sent to students in shorthand by post-card (Glatter and Wedell, 1971, p. 4). In 1843, this type of communication was formalized by the foundation of the "Phonographic Correspondence Society."

In 1856, correspondence study was started by Charles Toussaint and Gustav Langenscheidt to teach language in Berlin, Germany. Correspondence study passed the Atlantic in 1873, established by Anna Tickner to focus on the research at home. Between 1883-1891, the State of New York was authorizing the academic degrees through the Chautauqua School of Liberal Arts to students who were completing the curriculum of the required summer school and correspondence courses.

Correspondence education at the university level was established soon. In Europe, by 1856, the offering of courses via the mail was an established practice. Following this pattern, a French teacher and a German writer opened a school for teaching language through correspondence. It was closed during the World War II. According to MacKenzie, Christensen, and Rigby (1968), the Society to Encourage Studies at Home opened the first correspondence study program for the students of the USA in 1873. The Correspondence University was established in Ithaca, New York in 1883 (MacKenzie, Christensen, and Rigby, 1968, p. 26).

By that era, there was a growing desire among adults for further pursuit of studies at the college level but age, occupational factors and geography frequently separated them from college communities. For this reason, in 1891, the correspondence department of The Colliery Engineer decided to offer some correspondence courses in arithmetic, mine ventilation, the geology of coal, methods of mining and mine

surveying and mapping in England. Baylor University in Texas started a correspondence program in 1897, at about the same time as the state normal school at Willimantic, Connecticut, run a correspondence operation.

Distance education in the form of correspondence education had been spreading worldwide. In the beginning of the 19th century, technological inventions were geared up and people were finding new knowledge. Till the 1920s, 176 radio stations were established at the educational institutions. In the early 1930s, experimental television learning programs were produced at the University of Iowa, Prude University, and Kansas State College. Satellite technology, developed in the 1960s and made cost-effective in the 1980s, enabled the rapid spread of institutional television. Between 1940-1980, many countries such as China, Mongolia, Japan, Malaysia, India and others started their distance education program at all levels of education.

In 1969, the British Open University in the United Kingdom marked the beginning of the use of technology through well-designed courses with supplementary print-based instruction. Learning materials were delivered on a large scale to students in three programs: undergraduates, postgraduates and associate students. Sessions were closely monitored and had been successfully delivered to over 100,000 students. After its success, many countries have adopted the Open University model (Keegan, 1986).

The United States adopted the distance education system in the late 80s, and when it did, a form of distance education unique to its needs evolved. It started commercial courses such as those offered via satellite by the TI-IN network in Texas and at Oklahoma State University.

After 1950, telecommunication technology rose rapidly and it has been influenced by correspondence education. Telecommunication technology like Radio and Television pushed up to correspondence education and they were integrated with printed

materials. During this process, the name of correspondence education changed into distance education. Foreign countries that were running correspondence programs had started to use telecommunication technologies in their distance education programs. They first used radio in distance education to deliver their instruction to students.

British Department of Education had started delivering its instruction for the correspondence program by radio in 1916. A lot of correspondence students received their class from radio and print materials. In the mid-1920, 10,000 schools were using radio programs broadcast by the BBC to support classroom teachers (Kenworthy, 1991, p. 12). In 1929, China began to use the radio in its education system to support correspondence education. The radio was used in the USA's school classrooms in 1930. The face to face communication between students and teachers was not possible in radio. It was a one-way communication system that was used by students only for instructions. In 1949, the Indian government decided to use radio to support education, to encourage, and to deliver their instruction to students who could not go to school.

Between 1932 and 1934, the State University of Iowa, and Kansas State College USA produced some educational programs. On the other hand, some distance educators reeled that television was not ready for distance education because it had cost, quality and technical limitations. Many educators and engineers did a lot of research on education with TV and it was getting better every day. In 1944, John W. Studebaker requested FCC for establishing two educational channels. In 1945, FCC permitted the establishment of educational television. Colleges and universities were involved in educational television and in 1950, the University of Michigan started educational broadcasting services in the USA. Japan used television for the first time at the university level for correspondence students in 1961. In 1966, the French ministry of

education made the decision about delivering instruction to students on television. Between 1970 to 1975, the use of television in distance education was diffused around the world.

India had established his first state-level distance education system based on University in 1982, named as Dr. B. R. Ambedkar Open University (BRAOU), Hyderabad in Andhra Pradesh. After that, in 1985, Indira Gandhi National Open University was founded by the Indian Government. In 1989, India had created the National Open School for the secondary level students.

Distance education is widely provided with radio and television instruction to support distance education. On the other hand, new telecommunication technologies such as computer satellite, fiber-optics and others begin to enter into the distance education programs. Now, television and computer are used together to deliver distance education instruction. Thus, the structure of distance education is changing each day. After having experiences on one-way radio and television broadcasting in distance education, instructional designers began to look at the new instructional model, which can offer two-way interaction between teachers and students.

1.10.1: Distance Education in India

In 1961 The Kothari Committee talked about correspondence education in India. After a decade, the working group committee was constituted under G Parthasarthy, who was then the Vice-Chancellor of Jawaharlal Nehru University. He opined that the Open University structure, which would provide higher education on a part-time or full-time basis, would be an effective solution for the students who wished to continue their education and the persons who had been denied these facilities. He commented that “The University should have jurisdiction over the entire country so that when it is fully developed, any student can have access to its instructions and degrees.” Thus,

the group actively supported the establishment of an Open University System by the Government (Ibid, p. 226). In 1963, The Punjabi University, Patiala, introduced pre-University, which provided B.A. level correspondence courses. Correspondence Education was soon started in Rajasthan (1968), Mysore (1969) and Meerut (1969) (Sharma (2002), op. cit. p. 226). For a decade or farther, correspondence education continued through the CCIs (Correspondence Course Institutes). The CCIs were mostly under the Universities, which ran under Directorates. The table below highlights the emergence of correspondence education in India.

Table 1.1 (Correspondence Course Institutes) in India 1980-1983

S.No.	**University**	**Year**
1.	Delhi University	1962
2.	Punjabi University	1967
3.	Patna University	1968
4.	Meerut University	1969
5.	Mysore University	1969
6.	Punjab University	1971- 72
7.	Himachal Pradesh University	1971- 72
8	Andhra University	1972- 73
9.	Sri Venkateswara University	1972- 73
10.	CIEFL Hyderabad	1973
11.	Bhopal University	1975
12.	Utkal University	1975
13.	Madurai Kamaraj University	1976
14.	Kashmir University	1976

15.	Rajasthan University	1976
16.	Kerela University	1977
17.	Osmania University	1977- 78
18.	SNDT Women's University	1978- 79
19.	Allahabad University	1978- 79
20.	Annamalai University	1979
21.	Bombay University	1979
22.	Udaipur University	1979- 80

Source: Sharma (2002), pp. 17-20

Prof. G. Ram Reddy noted that 'Distance education is a silent revolution contributing to the critical endeavour to reach the unreached, the disadvantaged groups and communities. It has the potential of meeting with the exponential growth'. Earlier distance education was called Correspondence Education. It was envisaged as an instrument for extending the educational opportunity to students who could not attend educational institutions on a full-time basis.

Indian universities now have Distance Education programs offering a variety of courses at both undergraduate and postgraduate levels.

The Indian government observed the need for distance education based university and opened the prestigious Indira Gandhi National Open University (IGNOU) in 1985. It offers students degrees widely accepted in the job market and other areas of education.

In India, the interest in Distance Education is growing very rapidly and it will become a complete education system in the next decade. Similarly, many universities are providing distance education to meet the growing demand. There is an increase in the

number of institutes offering distance education due to its benefits to the learners.

Today, in India, there are around 5 million students enrolled in distance education at the higher education level. It has a distance education system based on one national university- Indira Gandhi National Open University- and 13 state-level Open Universities. It is focused on the expansion of Distance Education, which covers almost all of India. But, there is still an increasing need for developing more courses to be offered from the Distance Education mode. Concurrently, there is a substantial demand for quality and standards to be maintained in distance education.

Six decades ago, Indian policy-makers realized the imperative need to correspond to education in order to expand in Distance Education with the base of higher education. Hereto, they focused on expanding it to the elementary and secondary education levels. But the demand for higher education was increasing. In 1956-1960 reports, the University Grants Commission (UGC) suggested proposals for evening colleges, correspondence courses and made sure that it should be considered in all fields. The Planning Commission took the need for this seriously and the requirement for correspondence education in the country was mentioned in the 3rd Five Year Plan. The Central Advisory Board on Education recommended the setting up of an Expert Committee under the chairmanship of Dr. D.S. Kothari, Chairman of UGC. The Committee recommended creating an institution of correspondence courses with flexibility, economic viability and innovative methods of imparting education. In 1962, the University of Delhi started the School of Correspondence Courses and Continuing Education as a pilot project. From the 1970 decade, the growth and spread of the Correspondence Education system in India by some conventional universities, which opened Correspondence Course Institutes, began to appear. The distance education system offered accessibility, affordability and convenience of courses to

students which increased its popularity and growth. But, the Distance Education system was hampered by the stiffness of the conventional education system. It was realized that unless the structural rigidities in our educational system were removed and unless open educational opportunities integrate with communication technology, flexible and advanced distance education will not be given in a wide range of the modern society. In the 1980s, the Indian government introduced the Open University concept with the objective to offer opportunities for higher education level students, particularly those living in remote and rural areas, working people, women and other adults who wish to gain and upgrade their knowledge and skills through studies.

The Ministry of Human Resource Development in its National Policy on Education (NPE) 1986, recommended prominently an Open University system as a means to "augment opportunities for higher education and as an instrument of democratizing education." The vision was that Open Universities would be different from other conventional universities.

In 1982, a new chapter was written when Dr. B R Ambedkar Open University, Hyderabad, was established. Following this system, the Indian government finally found distance education based on a National University named Indira Gandhi National Open University in Delhi in 1985. The idea was taken up by many states and in 1987, two-state Open Universities were established, namely, Vardhman Mahaveer Open University (New Name), Kota, Rajasthan and Nalanda Open University (NOU) Patna, Bihar. Hereafter, Yashwantrao Chavan Maharashtra Open University (YCMOU) was established in 1989 at Nashik, Maharashtra.

Finally, Indira Gandhi National Open University (IGNOU) took up responsibility of the promotion and coordination of Open and Distance Education. At this moment, IGNOU had become a unique institution that was playing a dual role- one of

functioning like an Open University by offering distance mode education and training programs and the second as the promoter and coordinator of the Open and Distance Education system in the country. To determine standards in such systems, the Distance Education Council (DEC) was set up under the IGNOU Act in 1991, which became operational in February 1992. The DEC had a broad framework with innovative and positive policies which were laid down by the Board of Management of IGNOU.

The DEC started interacting with the State Governments and got results in the form of acceptance of several State governments that established Open Universities. Now, 13 state open universities are running in India and there are 61 (2018-19) distance education based directorates in the different universities of India. In 2010, the Ministry of Human Resource Development constituted a Committee under the Chairmanship of Prof. Madhav Menon to develop regulation of standards of distance mode education.

After the recommendation by the Madhav Menon Committee, the Ministry of Human Resource Development (MHRD) created the Distance Education Council of India (DECI). Subsequently, the MHRD released an order, on 29th December 2012, and the distance education regulatory authority was transferred from IGNOU to UGC.

1.10.2 Indian Open Universities

According to the MHRD website, there are 13 State Open Universities and One National Open University. There details are as follows:

1.10.1: National Open Universities of India

Indira Gandhi National Open University (IGNOU) is a dedicated Distance Education based National University is in India.

1. Indira Gandhi National Open University (IGNOU)

IGNOU was established in 1985 by the Indian Government under an Act of Parliament. It had some responsibilities for the development of distance education. The main motto of this university was the enhancement of access and equity for higher education via distance mode. The university also focused the promoting, coordinating and determining standards in open learning and distance education systems. Presently, IGNOU has an international approach in distance education mode. It offers many degrees, diploma and certificate programs related to the needs of employers in the country. The university has adopted the practices of a flexible and open system of education as regards the methods and pace of learning. IGNOU provides learning material which consists of print materials, audio-video tapes, broadcasts on radio and educational TV Channels. It performs teleconferencing, video conferencing and also face to face counselling for students at its study centers. It has many study centers located throughout the country. IGNOU focuses on the disadvantaged sections and regions of the society. The university offers several programs for women and provides specialized study centers that were established in the backward areas and districts with low female literacy. IGNOU has adopted the Information and Communication Technologies (ICTs) extensively for imparting education. It has its own audio channel GyanVani (FM Radio) and educational TV channel GyanDarshan. IGNOU extensively uses these platforms in providing education.

IGNOU has an international approach and offers programs in other countries which include Sri Lanka, Mauritius, Maldives, Nepal, Kenya, Fiji, Caribbean Islands, Samoa, Malaysia, Kyrgyzstan, Singapore, Ghana, United Arab Emirates (UAE), Sultanate of Oman, Bahrain and Doha among others. The University has collaborated

with UNESCO and International Institute for Capacity Building in Africa in Ethiopia, Liberia, Madagascar and Ghana, whereas education program in Lesotho, Swaziland, Namibia, Seychelles, Jamaica, Malawi and Belize are being offered through an agreement signed with Commonwealth of Learning (COL). The university has participated in an active role in SAARC consortium for Open and Distance Learning (SACODiL) and Global Mega Universities Network (GMUNET).

1.7: State Universities of India

Table 1.2 State Open Universities of India

S.No	**Name of the SOU**	Year
1.	Dr. B.R. Ambedkar Open University (BRAOU), Hyderabad, Andhra Pradesh	1982
2.	Vardhman Mahaveer Open University (VMOU), Kota, Rajasthan	1987
3.	Nalanda Open University (NOU), Patna, Bihar	1987
4.	Yashwantrao Chavan Maharashtra Open University (YCMOU), Nashik, Maharashtra	1989
5.	Madhya Pradesh Bhoj Open University (MPBOU), Bhopal, M.P.	1991
6.	Dr. Babasaheb Ambedkar Open University (BAOU), Ahmedabad, Gujarat	1994
7.	Karnataka State Open University (KSOU), Mysore, Karnataka	1996
8.	Netaji Subhas Open University (NSOU), Kolkata, W.B.	1997
9.	U.P. Rajarshi Tandon Open University (UPRTOU), Allahabad, U.P.	1998
10.	Tamil Nadu Open University (TNOU), Chennai, Tamil Nadu	2002
11.	Pt. Sunderlal Sharma Open University (PSSOU), Bilaspur, Chhattisgarh	2005
12.	Uttarakhand Open University, Haldwani, Distt. Nainital, Uttarakhand	2005
13.	Krishna Kanta Handique State Open University, Guwahati, Assam	2005

According to the MHRD website, there are 13 state-government open universities running in India. These universities cater to people who are unable to pursue regular courses due to various reasons. Presently, Odisha Open University is getting in shape but MHRD doesn't mention details of this University on their website. The names and year of establishment of the thirteen universities are mentioned in the table below.

1. Dr. B. R. Ambedkar Open University- This University is mostly known as Andhra Pradesh Open University. It was established on 26th August 1982 via Andhra Pradesh State Legislature. After that, on 26 October 1991, the Government of Andhra Pradesh renamed the University as Dr. B. R. Ambedkar Open University. It was the first distance mode university of India which aimed to provide opportunities for higher education to deprived students of the society. Presently, it is offering many courses in Bachelor, Master, Diploma and Certificate programs in different subjects which aim to meet the changing individual and social needs. The main motto of the University is providing education to all students like homemakers, farmers, skilled and unskilled labour, working professionals etc. The University serves all programs to the students through 213 study centers which are spread across both Telangana & Andhra Pradesh. It has 23 regional co-ordination centers and 14 centers especially for women students. The University has its own Audio-Video producing system which provides quality study learning materials for interactive learning in Telugu, English and Urdu. It has been offering access to research, postgraduate and professional programs through the open distance education system.

2. Vardhman Mahaveer Open University, **Kota**- It was established in 1987. This university has seven regional centers and it's headquarter is located at Kota. It is the

Rajasthan State Open University. It provides distance education to all the rural and urban areas of Rajasthan. It provides a flexible, cost-effective and innovative system of education. The main objective of VMOU is to provide educational opportunities to a larger area of the population, people living in rural and remote areas, women, in-service people and many more. It facilitates students with Ph.D., Post Graduate, Graduate, PG Diploma, Diploma and Certificate programs. The University has its own audio-video system equipped with new technologies.

3. Nalanda Open University, Bihar- It is the only University in the State of Bihar. The University is named after the famous Nalanda University of Ancient India. This University was established in March 1987. It mainly aims to educate the people through study centers, mass media, print medium and contact programs. The University is trying to promote vocational and conventional courses, leading to the award of degrees & certificates. It also aims to make people aware of new job opportunities. It is trying to provide courses for agricultural, commercial, rural and industrial needs of people and design learning material for improving the socio-economic condition of the people.

4. Yashwantrao Chavan Maharashtra Open University, Nashik- It was established in July, 1989. The YCMOU has its headquarters at Nashik, Maharashtra. It has 8 regional centers and study centers spread all over the state of Maharashtra. It focuses on vocational and technical skills. It attempts to use the latest Information and Communication Technologies. The University is emphasising Research Studies. It launched EduSat-based education, supported by the Indian Space Research Organisation. It conducts live lecture sessions that provide interaction with students

located at various distant locations. The University has audio-video content available on the website. Students can watch them anytime and get the benefits from it. The University initiated a Mobile Learning Centre project to carry education to the rural and tribal areas. The mobile van is a road transport vehicle which is well equipped with computing and communication tools.

5. Madhya Pradesh Bhoj Open University, Bhopal- It was established 1991. It has a web-based Audio & Video facility provided through electronic media production & research center. Students can view these lectures on the website. Its main objective is to spread Higher Education by reaching the unreached through open and distance education mode using information and communication technology. It is trying to promote Distance Education in all areas of Madhya Pradesh.

6. Dr. Babasaheb Ambedkar Open University, Ahmedabad- It was established on 27th July, 1994. The University has more than 507 study centers all over Gujarat. The University offers 72 programs, with more than one lakh learners enrolled with it. The objectives of BAOU are to give higher education to a large segment of the population and to promote the Open University and distance education system in the education pattern of the State.

7. Karnataka State Open University, Mysore- It was established on 1st June, 1996. The major aim of the University is to take higher education to the doorstep of the learners. It wants to provide high-quality education to those who are looking for it without any barriers of age, region or formal qualification. It is trying to promote distance education at every place in Karnataka. It is providing opportunities to

learners according to their pace and convenience and giving them flexibility in choosing courses from different disciplines. It allows students to study at their own place.

8. Netaji Subhas Open University, Kolkata-The University started functioning from July 1998, with only the Bachelor's Degree Programme in Arts & Commerce. It provides an opportunity for higher education in the vernacular medium to various disadvantaged groups of aspiring learners. Multiple audio and video lectures on various subjects are available on the website, and students can visit the website to get the benefits of these virtual lectures. At present, the University is continuing its work with 120 Study Centres, with more than 2, 50,000 learners in more than 72 courses. Study material is available in DVD format also.

9. U.P. Rajarshi Tandon Open University, Allahabad- It was established under Act No. 10/1999 passed by U.P. legislature and assented to by the Governor of U.P. on March 24, 1999. The University wants to promote the dissemination of learning and knowledge through the distance education system to a large segment of the population of Uttar Pradesh. The University focuses on distance education through research, training and extension, to play a positive role in the development of the students. It wants to provide education and training in various arts, crafts and other skills of the country to the students. The University wants to become a virtual university.

10. Tamil Nadu Open University, Chennai- The Government of Tamil Nadu established the Tamil Nadu Open University in 2002 intending to extend education to 'anyone, anytime, anywhere.' University signed an MOU with the National Skill

Development Council (NSDC), and has made all its vocational programs compliant with the NVEQN (National Vocation Educational Qualification Network). It has established links with international institutions. The University wants to reach rural communities through lifelong learning programs for livelihood improvement.

11. Pt. Sunderlal Sharma Open University, Bilaspur- The Chhattisgarh legislature established this university in the 55th year of the Republic of India. The Governor of the state accorded his assent to it on 20th January, 2005. The University focuses on providing education in the entire region of Chhattisgarh through different study centers. It wants to establish the study centers at maximum possible blocks of Chhattisgarh. It is focusing on making admission rules, learning period & subject options more flexible and convenient, following the philosophy of the ODL system. The University is trying to provide and generate all possible facilities and platforms to live up to the growing aspirations of the academic aspirants.

12. Uttarakhand Open University, Haldwani (Nainital) - an Act of the Uttarakhand Legislative Assembly established the Uttarakhand Open University (UOU) in 2005. UOU offers its programs through 240+ Study Centres established at different locations in the state. It has 8 Regional Centres at Dehradun, Roorkee, Pauri, Uttarkashi, Dwarahat, Bageshwar, Haldwani and Pithoragarh. The University wants to serve the educational needs of the target groups through the open systems of learning. It is trying to create skilled and knowledge-based human resources for the speedy upliftment and development of the State in particular. It promotes research orientation in the present scenario of technology and development and disseminates knowledge through an innovative multi-media teaching-learning system.

13. K. K. Handique State University, Guwahati- The former Distance Education Council has recognized KKHSOU, established under the provision of the KKHSOU Act 2005, enacted by the Govt. of Assam. The main aim of the University is 'Education Beyond Barriers' of age, academic background and geographical boundaries. The main objective of the university is to develop and provide easily accessible modes of quality higher education and training with the use of the latest educational inputs and technology. The University has established a multi-media studio set up with the aim of producing audio as well as audio-visual programs. The University achieved the SACFA clearance and frequency allotment of 90.4 MHz from the Govt. of India to operate a Community Radio Station.

All Indian Open Universities are providing the facilities of learning through distance education. E-learning is becoming an effective tool for learning in the distance education system. Now, New Media-based platforms are providing the facilities to perform e-learning.

1.8: Statement of the Problem

Status, Effectiveness and Challenges of New Media in Indian Open Universities with Special Reference to Video Lectures.

1.9: Rationale of the Study:

Very few Indian Open Universities are providing New Media based e-video lectures to students in ODL System. Maximum numbers of students/pupils are using New Media based technologies for different purposes. They are using it professionally, and for entertainment but are not using it for their education. Indian Open Universities are not able to use New Media effectively to deliver academic content to learners. Even though all Indian Open Universities have sufficient infrastructure for New Media-based e-learning, some barriers have been blocking their way. Some Indian Open Universities are providing e-learning to students but students are either not aware of it or are not able to utilize it properly. The present study aims to investigate the **status** of e-video lectures being provided by Indian Open Universities, the **effectiveness** of those e-video lectures and the barriers which are not allowing students to make proper use of it. Audio-Visual Lectures are a vital media for ODL students. It is a growing field with a multi-sensory medium, useful for all types of students, including challenged students (blind, dumb, deaf etc.). Web media provides the International approaches for learning.

1.10: Variables:-

Independent Variables: Indian Open Universities and New Media.

Dependent Variables: Video Lectures Status, Effectiveness and Challenges.

1.11: Objectives

1. To find out the status of New Media in Indian Open Universities.
2. To find out the opinion of stakeholders about the effectiveness of New Media based video lectures.
3. To identify barriers in producing New Media based video lectures in Indian Open Universities.
4. To identify barriers in the utilization of New Media based video lectures in Indian Open Universities.
5. To suggest a model for the effective use of New Media based AV Materials in the ODL system.

1.12: Research questions:

1. What is the status of New Media in Indian Open Universities?
2. What is the opinion of stakeholders about the effectiveness of New Media based video lectures?
3. What are the barriers in producing New Media based video lectures in Indian Open Universities?
4. What are the barriers in the utilization of New Media based video lectures in Indian Open Universities?
5. What could be an effective model for the effective use of New Media based Audio-Visual Material in the ODL system?

1.13: Operational Definitions

- **New Media:** For the present research, New Media refers to Digital Media, Mobile Apps, Professional Websites, Educational Websites, and Social Media like YouTube, Facebook, Twitter, Google+, and Instagram etc.

- **Indian Open Universities:** For the present study, Indian Open Universities refer to three open and distance learning universities approved by UGC-DEB. There is one National Open University- IGNOU and two State Open Universities- Vardhman Mahaveer Open University and Uttarakhand Open University.
- **Status:** Status means the index scored by open universities on NMIC (New Media Intervention Checklist) - a tool developed by the researcher for this purpose.
- **Effectiveness:** For the present study, effectiveness means the numerical score of a video an assessed using the tool questionnaire.
- **Challenges:** Challenges refer to those technological barriers (Equipment, Internet, and Studio) as well as production (presentation, infrastructure) related barriers that are being faced by Indian Open Universities while using New Media based video lectures.

1.14: DELIMITATIONS

This research will be focused on the New Media based video lectures of Indian Open Universities. Although there are 13 state Open universities and one National Open University in India, only six open universities are actively producing video lectures. The present research will be delimited to one National Open University (IGNOU) and one State Open University (Vardhman Mahaveer Open University, Kota) out of the 14 Indian Open Universities. For the purpose of identifying barriers, one Open University of India will be selected, which does not have sufficient facility and infrastructure for video production and is producing very few numbers of video lectures, which is Uttarakhand Open University, Uttarakhand.

In the present scenario, maximum numbers of learners are trying to use new media. E-learning is stepping forward through the internet integrated with other platforms of New Media technology. The main motto of this research is to find out the status, effectiveness and barriers of New Media which is being used by Indian Open Universities (IOUs). This Chapter will help in knowing the necessary information about all the factors which are involved in this research. This chapter will assist in writing further chapters.

Chapter 2

Review of Literature

The literature of any subject performs a significant role in the implementation of research work. Analysis of literature provides direction to the researcher and helps in proper planning and accomplishment of research work. The literature not only gives the path but also widens the knowledge and increases the mental horizon of the researcher. Literature review refers to pursuit of a journey to explore research work of past studies by the researcher and this helps in discovering the unexplored areas.

It also helps to realize that studies which are already covered by some researcher highlight the existing research facts and problems which are yet to be concluded. It allows the researcher to observe the defining challenge, provide structure to objectives and find the uncovered area through the present knowledge.

The chapter on the review of literature includes the studies related to research work. This study is conducted to analyze the status, effectiveness and barriers of New Media in Indian Open Universities. There are some studies which have been conducted by the researchers in the international and conventional studies context, but very few reviews or minor amount of research have been undertaken in the Indian distance education context. Below are some research studies related to New Media Technology and Open Distance Education.

(Nawaila & Bicen, 2018) had conducted the research to study the use of WhatsApp as a tool for distance learning. In this research, the combined method had been used. WhatsApp was used in conducting a class to teach basic hygiene to some randomly selected students of Near East University Cyprus. The research found that WhatsApp provided several advantages like affordability, easy accessibility, helpful in

relationships and communication, a good source of entertainment, informative source, cost-effective for e-learning and knowledge sharing. In the research, they observed that WhatsApp could be a useful tool for distance learning. It made the class more effective and interactive, more exciting and even the introvert participated fully. The research found that WhatsApp could be beneficial for the classroom but could not be used for a fully occupied, complete classroom because practical can't be performed and even if it's possible to perform, it will increase the cost of attending it.

(Pratama, Hartanto, & Kusumawardani, 2018) conducted research on factors of YouTube which affect learning performance. YouTube is often used as a supporting medium for learning. Their primary focus was on students who were learning music production education in Jogja Audio School (JAS). Students were learning audio mastering with the help of YouTube tutorials. The researcher created a hypothesis that learning motivation has a positive effect on learning performance and YouTube self-efficacy has a positive impact on learning performance. Music production is a complicated process to learn, especially learning audio mastering. For research, they took 100 respondents from JAS at the audio mastering level as a sample. They used purposive sampling and created a questionnaire. Four groups of the sample were made, which were: age group of 15-20 years which was 10 percent, 44 percent from 21-25 years, some 39 percent from 26-30 years and 7 percent from ages group 31-35 years. YouTube tutorials were provided to students for audio mastering. Students found it easier to learn and understand audio mastering. It also improved their learning performance. The analysis was that YouTube as a medium of learning increased the learning performance and improved learning motivation. The research found that students' learning performance saw an increase from factors that have a

significant influence on motivation, instructional content, and YouTube's usefulness. Their study expressed that YouTube was playing a vital role in students' learning performances in music production education. YouTube is becoming an innovative and efficient learning medium.

(Mansor & Rahim, 2017) conducted research on social media with special reference to Instagram in ESL (English as a Second Language) classroom. This research involved 20 students from Business Communication Course conducted at University Malaysia Terenggan. The study concludes that Instagram is a useful tool for students' interactions, especially in the discussion related to their subject. The research illustrates that Instagram enhanced their reading and writing skills apart from their communication skills. In this study, it was observed that using Instagram in English language learning motivated them to participate and boosted their confidence. Instagram is giving an opportunity to engage students in a dialogical process and supports student's education. Instagram also offers an opportunity to learn the benefits of writing, reading, questioning, arguing and clarifying. Their study evaluates the desire for future research in language learning as well as mobile learning, which are both very important in the age of information and communication technology.

(Gon & Rawekar, 2017) researched the affectivity of e-learning through WhatsApp as an educational learning tool. This study was implemented for MBBS students to find out the effectiveness of social media like WhatsApp in providing knowledge and to compare the enhancement of knowledge gained through e-learning and traditional lectures. Two groups of students were given the same lecture by two different mediums of learning i.e. via WhatsApp and Formal Lectures. They explored that the

students with WhatsApp as a learning tool scored better than the students with formal lectures. They observed that the facilitator's constant availability and easy accessibility were the advantages of learning via WhatsApp. Some technical disadvantages were observed like surplus messages, time-consuming and eye strain. This research concludes that the problems of surplus messages and eye strain could be solved by using mobiles with bigger screens and making small groups.

(Ventayen & Ventayen, 2017) researched about the role of Social Media in education. The waves of the digital age provide an extensive opportunity for users to explore different kinds of information and get friendly with the use of Internet. Some initial tools of social media could have a great impact on the development of the e-learning-teaching process. This study mainly focused on the role of social media in education, for teaching and instructing in high schools in Lingayen, Pangasinan. The study was conducted through a questionnaire. 45 respondents participated in the survey. The researchers stated that social media is productive in activities related to academics. They depicted that social media is very beneficial in students' interaction and student- teacher interactions for collaborative e-learning. In the research, it was observed that maximum number of students use social media for downloading course material, submitting reports and sharing files and documents. The research agreed that social media "facilitates communication" and "builds connection." It is observed in this study that social media "allows more accessibility."

(Pavlovic, Vugdelija, & Kojic, 2015) The research was organized to find out the use of Social Network for improvement of e-learning. The researchers explored that Social Network is one of the most advanced current technology that is being

progressively used in e-education. They also analyzed that the E-learning platform tends to be closed and inflexible for users. The administrator limits its consumption. The research explored that the students use social network more for the exchange of material, whether it is PDF files, images, or video calling. The researchers stated that e-learning is possible through the continuous development of social media. They found that e-learning is possible through the constant evolution of social media. The students believed that more knowledge is acquired from group e-learning rather than learning individually. The study found some barriers to social media e-learning such as the need for a constant connection to the Internet. Social network learning requires a significant commitment of professors as mentors of group. Lack of knowledge of foreign languages made it difficult for students to understand web learning content. The study conveys that social media tools are powerful tools that can be used instead of classic e-learning platforms.

(Barhoumi, 2015) the research had been conducted to examine the effectiveness of WhatsApp mobile learning in student's knowledge management in learning courses titled Scientific Research Methods in Information Science. The researcher follows the experimental approach- related to the comparison between an experimental group and a control group. The learning process of the experimental group was related to in-class learning activities which were through WhatsApp instant messaging. The control group's experience was 100% in-class, with no app mediation.

The researcher observed that mobile teaching and learning with WhatsApp mobile application is only to pursue learning activities by connecting both virtual learning and mobile learning. The study reveals that WhatsApp is a useful tool for mobile learning when it is used in a blended course strategy. They suggested that in a blended

mobile learning platform, anything posted by teachers or students will be easily accessible for online students whether they are learning from home or from another place.

(Chou & Pi, 2015) The research is done on the effectiveness of the Facebook group for E-learning. E-learning has a unique approach to Internet in teaching and learning. The researchers have evolved a 7-points liquid scale questionnaire for the software project management course students. A course-related Facebook group was formed. This study has found that Facebook Group provides a good user-friendly interface, comprehensible features and learner finds no complication in using it as a digital learning platform. The study found that the significant difference between the newer digital learning environment (social network) and the traditional digital learning system (video education) was user involvement. Facebook makes it easy to communicate, discuss, and interact with peers in the course Facebook Groups. It offers an environment where it is easy to put materials, chat, share, and create activities. The instructor could provide feedback to learners. This study showed that interaction with an instructor would strengthen learners' satisfaction with the use of Facebook Groups. This study found that Facebook Groups provided a virtual face-to-face study system. Learners could exchange ideas, share information, and interact with others while the instructor can act as a facilitator to smooth the interactions and provide valuable guidance. It is recommended to use digital learning environments for learning and experiments.

(Khan & Bakhsh, 2015) explored the role of Facebook in E-learning. This study focused on the current motivation to use Facebook as a supportive tool for E-learning in the higher education institutes of Pakistan. This research organized interviews of total 20 faculty members who are teaching undergraduate and postgraduate courses in different departments. They analyzed that Facebook is a better platform for group discussion and knowledge sharing as compared to LMS. Facebook doesn't have control over a study, which can easily distract students from main objectives. Through the Facebook group, students can share their ideas online with the teacher and the other students like a virtual classroom. There was a mixed trend of using Facebook for social as well as professional purposes. They stated that as youth is spending most of its time on Facebook, it provides an open platform, especially for e-learning. They observed that Facebook could address the issue of the lack of communication and interaction between students and teachers by offering services of groups, pages, discussions and group conversations.

(Anaraki, 2015) This research was organized to observe E-Learning through Social Media. The aim of this research was to explore the consumption of popular social media such as Facebook, Twitter, LinkedIn, Google Plus, and YouTube in eLearning. The researcher stated that social media technology provides educational tools with an opportunity to involve students in the online classroom as well as to assist the development of learner's skills and efficiency. The researcher suggested six most popular social networks tools, Twitter, Facebook, YouTube, Google+, LinkedIn, and Instagram for e-learning and asked how to use them for e-learning. He depicted that all social media platforms were not equally beneficial for E-learning purposes. He

concluded that each social media platform has its own strengths and merits and it is based on their own particular concept of “social networking”.

(Rosli, Saleh, Aris, Ahmad, & Shamsudin, 2015) conducted the study about E-Learning and Social Media Motivation Factor Model. The main focus of the study was to explore the motivational factors towards the usage of e-learning and social media in educational technology. This study involved 70 postgraduate students as respondents from the Faculty of Education, University Teknologi Malaysia. The study was based on four factors, which were- technology, exposure, content and social influence. The questionnaire was based on some constructs which are e-learning usage, social media usage, and motivational factors towards the usage of e-learning and motivational factors towards the usage of social media. Through the Structural Equation Modelling (SEM), this research revealed that the factor of technology and content is motivating the student's usage of e-learning. They explained that the consideration of technology and social influence motived the use of social media. There is a robust positive relationship between the usage of e-learning and social media, suggesting that social media can be manipulated as a supporting material for e-learning. They indicated that for educational plans, the organization, as well as the policymaker, must highlight the technology.. The educational technology students emphasized that technology could be the medium to integrate e-learning and social media in the educational field.

(More, 2015) explored a study on the student perspective towards the integration of YouTube with online, hybrid and web-assisted courses. This study was conducted at a Mid-Atlantic Historically Black College or University (HBCU) and focused on the

efficacy of YouTube in course instruction and student engagement. This research shows the benefits of the use of YouTube in the instructional process consistent with the Cognitive Theory of Multimedia Learning. To examine, the courses were differentiated in two types- one was hybrid course which had online YouTube videos and study and instruction printing materials, and second was based only on online YouTube-based videos. In this study, survey method had been adopted, which consisted of a combination of dichotomous, Likert-scaled, ordinal, ratio, short answer, Guttman scaled and contingency questions, and was developed on Zoomerang/Survey Monkey system. The study was based on seven hypotheses. The survey was distributed among 367 potential participants and completed by 221 respondents. This study found that 70.7% of respondents agreed/strongly agreed that "The use of YouTube can enhance the learning process," 86% agreed/strongly agreed that "The videos enhanced learning and understanding of course content" and 89% of respondents agreed/strongly agreed that "YouTube can make classes more interesting." The study observed that gender has no impact on the perceived value of YouTube in the teaching and learning process. Participants were asked to indicate their preferred course delivery format wherein 54% stated a preference for hybrid courses. This research concluded the relevance of the use of YouTube as instructional support with the Cognitive Theory of Multimedia Learning, which states that video is particularly effective for knowledge construction and memory building. This paper aimed to encourage online educators to involve video sharing services to create purposeful instructional videos and take appropriate videos created by others.

(Kramer, Gamez, & Santillan, 2015) were focused on the educational learning through Facebook in higher-education environments. The primary aim of the study

was to explore the role of social media, especially Facebook, in higher education. They included various aspects belonging to social networks based on previous research. This research referred to some points which were correlated with FB (Facebook). It focused on students and their FB uses and found that the activities of students on FB such as playing, watching and sharing content require little energy and FB provides the users with the facility to engage and share their content and messages with others. It also indicates that the primary reason for using FB was to keep contact with current friends, and it was rarely oriented towards educational purposes. According to the study, the use of high-tech devices has become the meeting point of the friend's network through FB. The study explained that the explosive growth of the FB tool creates threats and opportunities for the academic development of students. This research studied many types of research and found that they have developed an exploratory work, as well as diagnostics, testing, and assessment, to determine the considerations and recommendations to face these threats and opportunities of the Facebook in a better way. Regarding educational application areas, it has been found that students are more motivated to participate in such a case for learning a foreign language. It was observed that students are further motivated when the teacher used FB by disclosing personal data without losing their professional image. The researcher concluded that FB provides a significant interaction, and there are also different technology platforms with proven value and which are easy to use, available to enrich the educational process in other dimensions.

(Pavlovic, Vugdelija, & Kojic, 2015) focused on e-learning platforms integrated with the social media network. Social networking is one of the most advanced technologies that is being increasingly used with e-learning. In this research, they

discussed e-learning using social networking, especially Twitter. They researched ICT College in Belgrade. It was conducted during the third trimester of the school year 2013-2014. There were 96 students who attended a course of access networks course on Twitter. Researchers offered them to be part of the pre-exam requirements through voluntary reporting of seminar work. Among 96 students, 56 came from the Department of Internet Technology and 40 students came from the Department of Telecommunications. As the course neared completion, the survey realized that the social network Twitter helps to master the seminar work. 90 (93.75%) of surveyed students are actively working with Internet connection. 59% of students spent 3 to 4 hours on a computer. 93% of students used the Internet to get information. Among the 96 students surveyed, 81 already had an account on social networking sites, while 50 of them were using an account on Facebook and Twitter. Eleven students had an account on another social networking site, which was not Facebook or Twitter and four students had never used any social network. 64 students took the seminar work, where 42 students were from Telecommunications (TK) and 22 students were from Internet technology (IT). Twelve groups were formed with five students in each group and there was one group of 4 students. Students had the freedom to use the basic and additional tools of Twitter. Researchers found that in the sequence of seminar work, 21 students used Twitter for the exchange of material, whether it was PDF files, images or video materials; 12 students, in addition to the exchange of materials, actively tagged and leaved comments related to work within the group on Twitter. Eight students communicated with the professor on Tweet-Chat, six students used the live video streaming communication through Twitt-Cam. Seventeen students commented and actively communicated with students from other groups with whom they shared experiences. Researchers concluded that 24 students agreed that learning

is possible through the social network. Eighteen students accepted that contact with people, groups and connections between learning content were useful for study work. Seventeen students believed that the knowledge acquired in the group was more informative than individually acquired knowledge. After the survey was conducted, they concluded that the use of the social network Twitter had a positive impact on the implementation of teaching. An interesting fact is that the students choose Twitter. Their observation was that Facebook is seen as a network for entertainment, and Twitter is more suitable to them for professional use. The motivation and satisfaction of students who used Twitter that means they have tried almost all the basic and additional features smartly and efficiently.

(Althobaiti & Munro, 2014) conducted a study on *an Interactive Electronic Lectures System (IELS)*. The research objective was to make learning easier and accessible using New Media. For this study, the researcher developed an IELS tool consisting of a recorded lecture, web application and interactive technologies. The study used the Mixed Method design. The result revealed that the IELS system was created to enhance the lecturing process and some features of the system have been tested, such as accessibility, usability, and interactivity, learning ability, communication and satisfaction. Most of the previous studies presented an e-lecture of the same type which was dependent on video streaming or presentation segments. This means that limited interaction is required from the end-user (learner), which is represented by only some buttons such as play, pause, forward, backward and stops, as needed.

(Mayende, Muyinda, Isabwe, Walimbwa, & Siminyu, 2014) explored the process of using Facebook for interaction and learning in distance learning at Makerere

university. The study mainly focused on 650 students who were doing an 'Introduction to Information and Communication Technology' course. This study used a qualitative questionnaire posted on the Facebook class page. Researchers observed that most students do not agree that Facebook is more efficient as compared to Teachers Learning. One of the comments read, "Seeing a teacher in class is more important, practical and effective. The explanations were better understood than on Facebook." But they also observed that accessing Facebook on mobile phones allowed distance learners to access the class. Facebook provided a platform for teaching and learning, and helped to support modelling, contingency management, feedback, instructing and questioning. They concluded that Facebook allowed students to easily give feedback to each other via 'liking' peers' comments. FB facilitated students to increase interaction and give timely feedback through comments.

(Thalluri & Penman, 2014) examined a research based on experiences of studying Pathology with the use of Facebook. This study aimed to understand the impact of using Facebook in learning and teaching some aspects of a Pathology course delivered at a South Australian university. Medical Radiation students were learning an aspect (case scenario) of a Pathology course via Facebook. A pre and post-intervention mixed-method study design was used. In this study, the pre-intervention questionnaire was offered to students before they became part of the Facebook group. It was observed that a majority of students informed that Facebook could be a tool for learning and that it can enhance the interaction between students and staff. This study concluded that Facebook gave them flexibility and provided opportunities to learn and work with stakeholders and it also helped students to engage with the course content

and synthesize knowledge. Facebook learning was an effective and innovative way to learn and increase their understanding of disease processes.

(Shilpa, 2014) The research has conducted a study on "New Media technology in Education." New Media is proving to be a significant technological revolution dawning an era of e-generation. It is creating a substantial wave as a dynamic content provider and interactive media; indeed revolutionizing the world of communication. New Media is connecting us to every corner of the world, sprouting the virtual world. The present paper attempts to study New Media's ingress into the education sector, redesigning the knowledge economy. The online media is giving the students a platform, a new avenue to explore their interests and inquisitiveness. As an agent of immense change, it is the opted tool for greater specialization in the curriculum through experiential learning. New Media, a forum for interaction, self-expression, and an avenue for skill enhancement, is enabling students to develop professionally. Having redefined the learning process infringing the traditional norm of education, it is crafting individuals for the industrial demands and the competitive world. With exclusive characteristics and certain risks, New Media is emerging as the preferred medium for outreach learning in the younger generation.

(Nayak, 2013) studied the impact and challenges of e-learning in the digital environment. The researcher explored E-learning which is an Internet-based learning system and environment. E-learning provides faster and cost-effective learning and it has a participatory approach to the learning process. This study focused on the concepts, development and benefits of e-learning in the current scenario. It also

explored the impact and challenges of e-learning. The study found that e-learning provides collaborative and interactive learning.

The study found a strong positive correlation between e-learning and the advancement of the country through the enhancement of education. The study described that e-learning is now updating the conventional mode of education with the help of internet technologies and learning management software (LMS). The study concluded that e-learning is helpful for the growth of distance learning. He suggested that the future growth of e-learning will depend on the attitude of educationists and learners towards the use of modern technology and exposure to Internet.

(DeWitt, Alias, Siraj, Yaakub, Ayob, & Ishak, 2013) studied the potential of YouTube for teaching and learning the performing arts. YouTube, as a Web 2.0 tool, can be utilized for knowledge generation through observation and social interactions. The study focused on getting a consensus on the benefit of YouTube for teaching and learning. In this study, the Fuzzy Delphi technique was adopted to reach consensus among 20 experts who belonged to seven different areas of specialization- creative writing, music, theatre, dance, television film, animation and fine arts- from the Academy of Arts, Culture and National Heritage (ASWARA). In the Fuzzy Delphi technique, firstly, expert interviews had been conducted. After this analysis, a questionnaire had been developed. This study observed that the experts agreed on YouTube, which can be an effective and beneficial channel of instructional messages for teaching and learning the performing arts. The research found that experts agreed that face-to-face instruction is more relevant than using YouTube. The findings showed that YouTube has the potential to be used as an instructional tool in the performing arts. They conclude that in the future, learners of the performing arts need

to improve their information technology skills. YouTube could not be used to acquire detailed techniques and expertise in the performing arts. YouTube requires complete supervision by lecturers for learning the performing arts. The research observed that YouTube is positively affecting the learners.

(Pimmer & Linxen, 2012) the study focused on Facebook as a learning tool through mobile phones in a developing country. In this study, they conducted exploratory research to find out how medical students and professionals use social network sites (SNS) in the setting of developing and emerging countries. The study found that major number of students used Facebook on their mobile phones daily and, to a lesser extent, via laptops. According to this research, students were accessing Facebook several times a day, and some even associated the use of FB with a state of dependency: "All day. Every day. It's an addiction".

Researchers observed that educational content such as quizzes and case presentations, which were integrated with Facebook as part of informal e-learning, would be part of formal education settings. Facebook provided a socio-cultural learning perspective that provided virtual professional communities across national boundaries.

(Esteves, 2012) conducted a study to explore Facebook to enhance learning with student engagement. The researcher examined the activities and experiences of the Web Design and Publishing course students at the University of the Philippines (UP) Open University who used Facebook alongside the Moodle Learning Management System. The study explored that a major number of students reacted positively to FB learning. A few students frankly disagreed with it due to some reasons as they had limited time to access the Internet and their routine was to visit the course site, read

the updates, download new materials and read the discussion forum. This study found a significant difference between Moodle LMS and FB. FB provided the students the freedom to choose the contents they need and want to see on the Group's page. In Moodle LMS, the students felt more passive. The teacher had the primary control over which resources to share with the class, what activities would be done and what discussion topics should have a forum. Students could react to whatever activities were initiated by the teacher. This research explored the key features of FB, which could support e-learning such as Comment and Like button, FB wall to share information and study material and carry out a discussion on it. FB's chat feature gives an advantage over Moodle LMS which is a bit clunky. This study observed that FB offers instant communication and mimics face-to-face interaction, which creates a path for distance education students.

(Brecht, 2012) studied "Learning from Online Video Lectures." This study empirically examines the instructional value of online video lectures – videos that a course's instructor prepares to supplement classroom or online-broadcast lectures. The study examines data from a classroom course, where the videos have a slower, more step-by-step lecture style as compared to the classroom lectures, student use of videos is voluntary and can be tailored by students to meet their learning and topic-review needs, can occur when and where students learn most effectively. The study's specific objectives are to identify and measure the types of learning benefits that video lectures provide, gauge students' acceptance and use of this form of computer-based instruction and compare results from alternative video designs to determine if learning is differently affected. The course is highly technical (financial accounting) and is required by all business school students as they enter the school. The university is

middle-tier and located in a medium-sized metropolitan area. Students are highly varied in their academic abilities and motivation, and they often have substantial off-campus job responsibilities. Three video designs were tested, each with an alternative learning environment designed into the videos. Design 1 had a complete absence of attention to relief and change-of-pace elements. Design 2 included graphics/cartoons and sounds/music clips that were strongly presented to provide relief from the study tedium. Design 3 used a significantly reduced number of graphics and sounds and subtly showed them so that they did not command viewer attention. Learning benefits are consistently best with design 2. Findings are based on an analysis of survey data and grade distributions. They include comparisons of 'with-videos' and 'no-videos' sample data. The most significant results are that students use video lectures for tutorial help, they improve initial learning, they reduce dropout rates, and they improve course grades. Although the study is for a classroom course with the videos provided online, it is expected that video lectures will have similar or higher use and value in an online course when live-instruction and discussion are limited. Findings indicate that a substantial percentage of students who watch the videos use them as a helpful tutoring resource and receive several types of improved-learning benefits, including improvement in topic understanding, better grades, and greater ease of learning. The weakest students are especially benefited, with significantly reduced course withdrawal rates. The use of video lectures occurs when alternative study resources with the same topic content are always available.

(Murthy & Naraharisetty, 2011) investigated the effectiveness of video-based lectures and voice-based presentations in terms of e-Learning content, retention of learning, ease of use, satisfaction, video quality and audio quality. The study followed

the video-based lectures to make learning more exciting, fun and effective in task accomplishments. Researchers surveyed with the students of the 'Master of Science in Information Technology' (MSIT) program. The knowledge component of the course was delivered to the learners as video-based lectures and presentations with voice-overlay. These became learning support materials for the learners in the accomplishment of their tasks. They observed that the length of video lectures may be limited to a maximum of 20 minutes. Video lectures can be useful with voice over and also consist of text-based concepts along with animated diagrams and graphics supplemented with connected hyperlinks for more examples and illustrations. Open and Distance Learning (ODL) system are those in which teachers and learners need not necessarily be present either at the same place or same time, which do not require classroom (face to face) teaching. The admission criteria are also flexible without compromising on the necessary quality considerations.

(Kbartaite, 2010) focused on the "Impact of Modern Educational Technologies on Learning Outcomes". The arrival of new technologies, such as audio and video recordings, CDROMs, DVDs, personal computers (PCs), or iPods, is often followed by efforts to adapt them for educational purposes. Many Web 2.0 applications on the Internet, such as wikis, blogs and podcasts have also been adapted for educational purposes by professional educators. The research work for this thesis has been carried out to develop a virtual campus for Biomedical Engineering (BME). The practice originated with the European Virtual Campus for Biomedical Engineering (EVICAB) project, which ran from January 2006 to December 2007. The project aimed to develop build-up and evaluate a sustainable and dynamic solution for virtual mobility

and e-learning in the field of BME. Video lectures for the virtual campus were recorded when lecturers presented them in a traditional classroom environment.

The process of recording and publishing the video lectures was divided into five steps: 1) preparation, 2) recording, 3) editing, 4) producing, and 5) sharing. As an outcome, three types of data, i.e., video files, audio files and PowerPoint presentations or PDF documents, were synchronized in one application in Flash format. Video file conversion software was used to produce the material in MP3, MPEG-4 and 3GP file formats for audio/video players and mobile phones. It thus became possible to access the files with free software, such as iTunes and QuickTime Player, and then upload them to personal gadgets. The Word Press blog tool and publishing platform were implemented as an asynchronous communication system. As a result, virtual users could leave their comments, messages and suggestions. A rating system was added so that the users could evaluate each lecture, which consisted of several video recordings. Hypertext Mark-up language was applied so that all the material can be presented as a web portal. Web code may be used as an open-source so that everybody can contribute to its development by downloading and editing it themselves. A coherent layout and color scheme had been selected so that the learning environment is as accessible and user-friendly as possible.

The materials as mentioned above and methods were trialled when implementing an international course on Bio-Electro-Magnetism (BEM) at Tampere and Helsinki Universities of Technology. Students with several different native languages attended the session. The course was offered in both- a traditional classroom environment and a virtual learning environment. A questionnaire was developed which included 20 closed and opened-ended questions to collect feedback from 66 students who participated in the course.

An analysis of logins to the virtual campus was carried out to get information on when, where and how users accessed the portal. This information helped to improve the content and also proved that the virtual campus was accessible. The virtual users came from all over the world and they accessed the learning materials every day of the week with an average of over 40 visits per day. The video lectures for PCs were accessed the most, followed by those for iPods and media phones. Most of the users obtained virtual material with Firefox browsers using Windows operating systems. This information is essential for further development as not every browser on every operating system can decode the video files correctly.

In order to estimate how e-learning has developed so far (during the years 2006-2009) among centers offering BME education in Europe and to anticipate its future development, three questionnaires were administered, which have yielded valuable data about BME e-courses. It is expected that this information could provide the stimulus for planning future e-learning for BME and could also be useful in defining educational plans and goals.

(**Osborn**, 2010) used video lectures to teach a graduate career development course. The purpose of this article was to help students feel more connected to an instructor is through the use of a video lecture. The author was trying to determine the Length and Content of a video lectures. One major topic of a video lecture should be divided into 4 to 5 video lectures whose duration will be 10 to 15 min. The study suggested that the instructor should consider the background, as well as the time of the screen presentation of the instructor's face while recording a video lecture. Using a "green screen" provided the instructor with an option of importing various exciting backgrounds. This research was based on Eye Tracking Study for web media video

lectures. This article also suggested to insert survey and quiz questions in video lectures to make videos more interactive.

(Tanja, Gruber, & Batinic, 2009), the investigation was conducted on the topic of the Meaning of Learning Strategies. Video-based e-lectures offer interactive learning and more vivid and personalized forms of self-regulated learning. Participants (N = 28) learned from either a video-based e-lecture with a synchronized written transcript of oral presentation (multimodal) or an e-lecture without the transcript (unimodal presentation). Learners could be classified as "repeaters" whose primary focus was on the lectured material, or as "surfers" who spent less time on the lecture itself and instead used the optional links. Results showed that the learning outcomes were significantly influenced by learner strategy (with repeaters outperforming surfers) but not by presentation modality (with or without written text).

(Savoy, Salvendy, & Proctor, 2009) This study compared a lecture delivered using traditional presentation and e-lecture with the use of PowerPoint presentations. They argued that the information on PowerPoint presentation slides for the lectures has more perceived importance rather than any other information. Also, they supposed that more information is retained when PowerPoint is not used than when it is. Besides, they discussed the preference of students as to whether they preferred a traditional lecture or an e-lecture. They delivered their lectures within four weeks to measure the retention of lecture information presented to students.

(Snelson & Bowers, 2009) studied YouTube, currently the largest and most widely used online video service. It is an epicenter of the expanding video-sharing universe

that offers educators a large number of hours of free online video content, hosting, and distribution. This study observed that YouTube is particularly beneficial in e-learning based on digital content. This study explained how short video clips could be selected and produced for effecting learning objectives. A case study method was adopted from the health care profession, which was used as an example with YouTube videos. In this research, the researchers searched on YouTube for the video clips related to the selected topic, but very few related and informative videos were found. The study was focused on micro-level instructional design for video clips. Micro-level instructional design principles are based on some points like shifting to small-scale focus, application of relevant learning theory, managing the technology and evaluating the product. These points were used as the conceptual framework to select the subjects and production of the types of short video clips that are commonly found on YouTube and other video-sharing services. This study concluded that the technical format for the educational motion picture has progressed from film reels and projectors to YouTube and digital online video-sharing or video 2.0. They observed that the role of small video clips, now ample on the Web, remains unclear. They found that the video 2.0 phenomenon created a knowledge-centered and structural learning system on YouTube.

(Demetriadis & Pombortsis, 2007) this study was conducted using e-lectures within the aspect of flexible learning and the efficiency of the learning process. The study examined the flexibility of the learning experience utilizing three types of e-lectures. The first was digital lecture, which refers to any lecture delivered through digital technology, either online synchronously or asynchronously. The second was live digitized lecture, which refers to any digital learning resource that captures the

experience of lecture-based instruction in the classroom, and third was e-lecture, which means any digital lecture format captured in the studio. Seventy-two students participated- 26 males and 9 females for the experimental group; and 27 males and 10 females for the control group. This study showed that students could learn efficiently using e-lecturing material, and showed their satisfaction in the flexibility of the experience.

(Nielsen, 2005) conducted the study titled *Talking-Head Video Is Boring Online.* In this study, researchers found that the Talking Head Video Presentation felt boring for online users. The researcher found that eye-tracking data was easy to be distracted from when users were watching videos on websites, especially when the video shows a talking head and is optimized for broadcast rather than online viewing. It was suggested to use images, photos, and PowerPoint slides in video lectures. The camera angle or visuals should be changed every 24 sec. in a video lecture.

(Pathak & Chaudhary, 2005) proposed collaboration between students and teachers to produce more effective e-lectures. An investigation was set up on five hundred students with five lecturers in a technological university of Singapore. Teachers recorded their lectures through customized software. Teachers seemed to be more preoccupied with their body language, facial expressions and trite organization. Students seemed to focus on the voice and the matter on the slides and did not mind a somewhat repetitious delivery. As researchers concluded, "The effectiveness of e-lectures in Asian education would largely depend on the extent to which the teachers can address the student's concerns. To achieve this, the teachers would also need to enhance their awareness of the new medium."

(Zhang, Zhao, & Zhou, 2004) In this, an extensive study concluded that traditional classroom education or training does not complete the need of the present world's lifelong learning. Learning is shifting from being instructor-cantered to being learner-centered and is moving from classrooms to homes and offices. E-Learning, which refers to learning through the Internet, provides people with a flexible and individualised way to learn. It provides opportunities for learning-on-demand and reduces learning costs. E-Learning has created a far-reaching impact on learning in the new millennium. They observed that in an e-learning environment which emphasizes learner-centred activity and system interactivity, remote learners could outperform traditional classroom students. He observed that e-learning is still in an early stage, with many uncertain issues to be clarified and investigated. There are many factors which potentially influence the effectiveness of e-learning such as media characteristics, learning context, technology, and learner characteristics. They found that experiments have demonstrated that e-learning can be at least as effective as conventional classroom learning under certain situations. E-learning can replace traditional classroom learning. They explored that e-learning is a promising alternative to traditional classroom learning, which is especially beneficial for remote and lifelong learning and training. In many cases, e-learning can significantly complement classroom learning. E-learning will keep growing as an indispensable part of academic and professional education. He found that it should be continued to explore how to create a more appealing and effective online learning environment. One way to do this is to integrate appropriate pedagogical methods, to enhance system interactivity and personalization, and to engage learners better.

(Peters, 2001) observed that open and distance learning methods had a major impact on teaching and learning. He emphasized on "Lifelong Learning" through the spectacular use of New Media. He summarized "The concept of open learning offers interesting opportunities for the further development of distance education, which can only be exhausted if teacher and students work out a new conception of themselves, and if learning and teaching in distance education is structured, arranged and organized differently so that it can be adapted flexibly to the different learning requirements of a very heterogeneous clientele".

Digital Information and communication development have created a new trend in teaching and learning. The further development of Personal Computer (PC) and Multimedia has provided the facility to store information and reproduce it as and when needed in minimum period. It also provides interactive learning programs by different software. It creates a channel for larger and more extensive databases and their connection to international global digital information networks. The improvement in telecommunication through audio-video technology is not just a technological development, but a new pedagogical innovation. Otto Peters has found the general structural advantage of the development of technology for ODL. The distance between teacher and students, which is constitutive for distance education, turns into virtual proximity, diversions presented in writing are replaced, where necessary, by the oral form, dead letters give way to the live voice of teachers or participants, and the rigid, time-delayed sequence in the articulation of learning and teaching process makes way through the audio-video conferences. Distance education has always been a very flexible form of learning and teaching. He observed the growth of distance education through three generations, the dilemma regarding quantity versus quality and the characteristics of students. Peters explained the salient

features of various models of distance education, including the correspondence model conversation (two-way communication) model, teacher model, tutor model and technological extension model. Peters focused on the changing nature of pedagogical issues. He explored the three constitutive concepts of distance education including: a) dialogue in counselling, tutoring, peer group interaction, and so forth; b) pedagogic functions of the structural elements determined by behaviourism and educational technology; and c) autonomous learning and its limits in the current practices of distance education. Peters discussed the concepts of open learning, lifelong learning, industrialized learning and teaching, and postmodern learning to modify dialogue, structure and autonomy. This book explained digital information and communication which can help distance education achieve goals in mass education, democratization, and quality learning, as well as meet new requirements for teaching or learning through the new technologies. Peters also discussed the related issues of advanced technology, and distance education pedagogy vis-à-vis pedagogy of adult learning and classroom teaching.

Further Otto Peters has suggested the virtual-distance-education model, the flexibility of which can be enhanced by Internet-based learning. He puts forward “One important factor is the increased speed of communication, which reduces the turnaround time of assignments to be assessed, improves the cooperation of all members of the learning projects and the universities, and strengthens the ties to students, especially to those living far away in all parts of the world.” As a result of the advancements of telecommunications technologies, distance learning programs become more easy and effective. Distance education can now be defined as "the acquisition of knowledge and skills through mediated information and instruction, encompassing all technologies and other forms of learning at a distance.” The

distance education offers flexible learning through online New Media-based materials. Distance education courses are designed for students who are unable to attend classes on a regular basis in campus or who are not able to get education due to other reasons. New Media provides more than one study options to students through ODL.

(Fons, Vernooij, Thomas, Thijssen, & Remko, 2001) study on "New Media and their Role in Education." Essential learning as a supplement to –or an option for – traditional learning is much heralded. Governments, universities and businesses are spending vast amounts of money on a project that aims at the process of developing New Media into existing courses to transform them into online courses. However, it also stresses that the functionalities of New Media can cause false expectations because New Media contains dysfunctionalities as well. These dysfunctionalities should be taken seriously to improve the functionalities of the learning process. It is necessary to analyze how people acquire knowledge from the computer and which learning activities they deploy during this process. The way in which New Media like the internet can support the learner is essential to distance learning. It is essential to know the expectation that the learner has from computer-assisted studying. If a medium can assist the learning process, people are automatically expected to depend on this software and exploit this potential. In this contribution, a hypothetical framework to guide the process of decision-making is presented. By focusing on two sides of the construction process, it considers the development of an effective learning environment. The first is the side of the media and their functionalities, both activated and potential, and their dysfunctionalities. The second is the exploration of three types of learning activities: cognitive, regulative, and effective. Based on these two, an

optimal mix of media, old and new, is chased. Our central research question is: 'What combination of media offers an optimal blend of learning functions to support the learner's activities, necessary to reach learner desired learning outcomes.'

(Brown, 2000) described the vital features of web-based learning as a new robust fabric for learning. Cross-pollination of ideas, cross-linked interest group, both are real and virtual, and developed the rich ecology of learning. As per his research, the web-based education process is constantly developing, largely self-organizing, and forming a creative way, which has a component of cross-pollination of learning. John Seely Brown, Chief Scientist at Xerox and director of Palo Alto Research Center, was hired 15 years ago to design future work on learning environments. He notices that the students are not aware of the traditional image of the learner as permissive sponges. It requires us to think again and redesign education for the Digital Age. The article tried to look ahead to understand the Web's fundamental properties and look forward to know how they might create a new kind of information fabric in which can do for learning, working and playing mutually. It examined the notion of distributed intelligence, and asked how one might better capture and leverage naturally occurring knowledge assets.Finally he got to initial topic- how all of this might mould together into a new concept of "learning ecology." Along the way, we will look constantly at learning itself and ask not only how it occurs now, but how it can be universal in the future. His study was focused on New Medium, Digital Learners, Creating knowledge, Building Knowledge Assets, Learning Ecology and Regional Learning.

(Mendels, 1999) wrote an article based on "Study Finds Problems with Web Class" published by New York Times web edition in 1999. She said that despite extensive use of new media in the whole teaching-learning process, a very less number of

researches have been conducted on its pedagogical aspect as said by Mendels (1999) “researchers have so far overlooked the stiff details of what is involved with online pedagogy while extolling the educational potential of technology.” She highlights the professor’s point of view in this article about Education and technology. Rob Kling, a professor at Indiana University in Bloomington and the study’s co-author, said, “there are a lot of good potentials for technology in education. But,” he added, “there are a lot of limitations and, further, it is neither simple nor cheap.”

(Demiray & Isman, 1996) are focused on the history of international Distance education. They classified the history of international distance education in five periods. First is a period of before correspondence education systems, second is the period when heavily applied correspondence education systems were used. The third period includes broadcasting instructions through Radio and Television for distance education, which is called one-way communicational. Fourth is Two-way communicational audio and interactive period. The fifth period is based on the unification of satellite and future technologies in distance education. In this research, they referred to the story of the establishment of correspondence education and the development of distance education system in the world. The study found that between 1976 and 1995, more than ten million students enrolled in distance education programs and more than two million students had received their high school diploma, The researcher believed that in the upcoming years, the number of students and schools will continue to increase over the world. This author suggested that “in today and future’s distance education programs, distance educators should never forget “humanity” in their programs because if they do not pay attention to it, their distance education program graph will fall.”

Chapter-3

Methodology

Chapter-3

Methodology

3.0: Introduction:

The methodology is the heart of the research. It is the process of activities done by the researcher to obtain the research objectives. It is a research strategy that outlines the way in which research is to be undertaken and, among other things, it identifies the methods to be used in it. Having presented the statement of the problem and formulated hypotheses in the previous chapter, the next step in the process of scientific investigation is to design a strategy and structure of the method which is most suitable. This chapter focuses on both the conceptual framework and the fieldwork of the research. It provides a platform to find out answers to research questions in depth and discusses what methods are appropriate for the research. It extracts the steps to address the hypothesis and research questions. The methodology section helps to conduct all research activities systematically. The aim of this chapter is to present the complete description of the specific steps which were followed in order to fulfill the requirements of the objectives of the research.

3.1: Objectives and Research Questions:

The present study intends to investigate the Status, Effectiveness and Challenges of New Media in India Open Universities with special reference to video lectures. For this purpose, following objectives and research questions were identified:

3.1.1: Objectives of the Study:

1. To find out the status of New Media in Indian Open Universities.

2. To find out the opinion of stakeholders about the effectiveness of New Media based video lectures.

3. To identify barriers in producing New Media based video lectures in Indian Open Universities.

4. To identify barriers in the utilization of New Media based video lectures in Indian Open Universities.

5. To suggest a model for the effective use of New Media based Audio Visual Materials in the ODL system.

3.1.2: Research questions:

1. What is the status of New Media in Indian Open Universities?

2. What is the opinion of stakeholders about the effectiveness of New Media based video lectures?

3. What are the barriers in producing New Media based video lectures in Indian Open Universities?

4. What are the barriers in the utilization of New Media based video lectures in Indian Open Universities?

5. What could be an effective model for the effective use of New Media based Audio Visual Material in the ODL system?

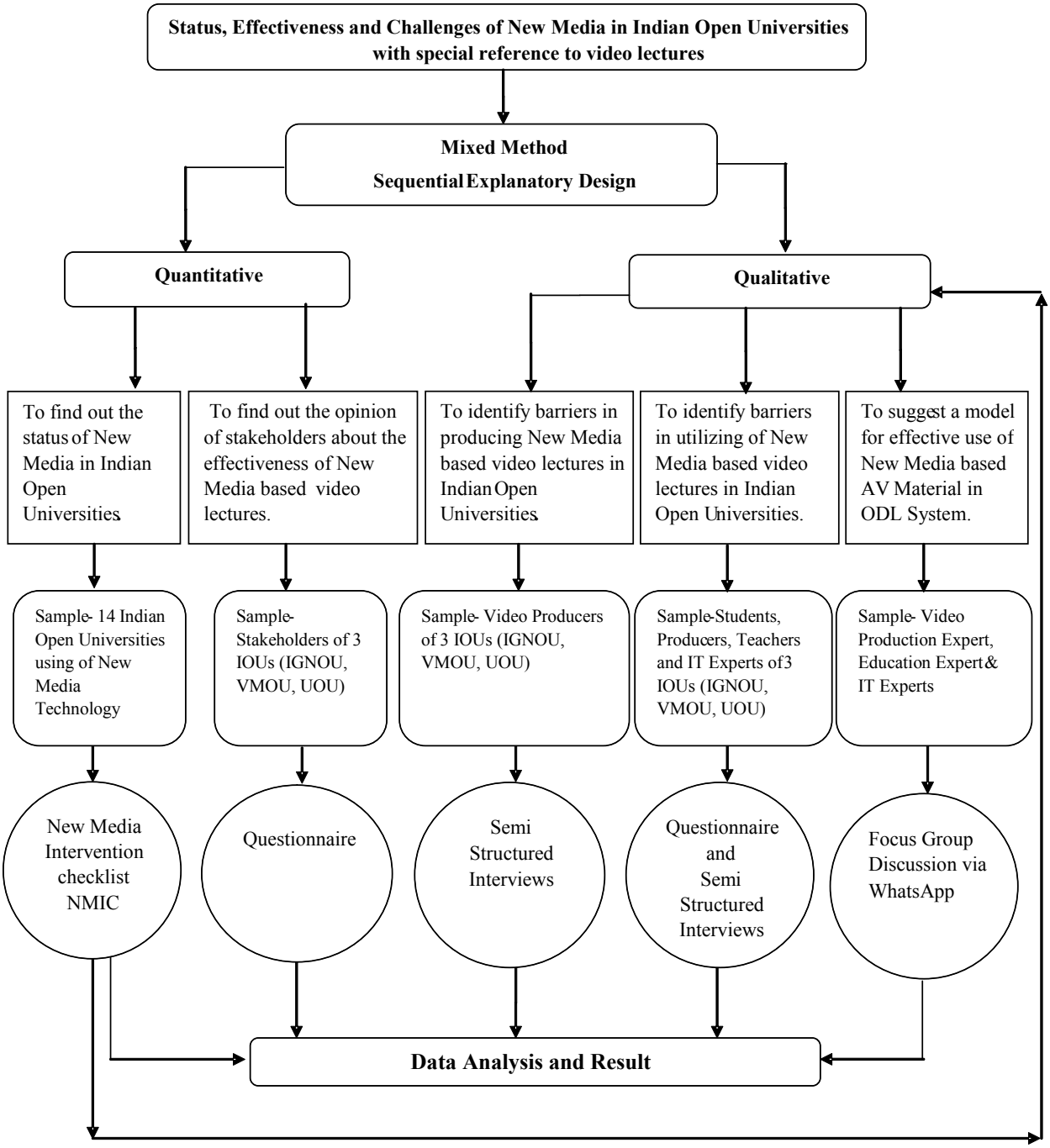
3.2: Methodology Snapshot

Table No. 3.1: Methodology: An Overview

Sl. No.	Objectives	Sample	Tools/Techniques used	Analysis used
1.	To find out the status of New Media in Indian Open Universities.	15 Indian Open Universities using of New Media Technology	NMIC (New Media Intervention Checklist)	Checklist Analysis
2.	To find out the opinion of stakeholders about the effectiveness of New Media based video lectures.	3 IOUs (IGNOU, VMOU, UOU) Students, Teachers, and Producers	Questionnaire	Questionnaire Analysis
3.	To identify barriers in producing New Media based video lectures in Indian Open Universities.	3 IOUs (IGNOU, VMOU, UOU) Video Producers	Semi-Structured Interview	Interview Analysis
4.	To identify barriers in the utilization of New Media based video lectures in Indian Open Universities.	3 IOUs (IGNOU, VMOU, UOU) Students, Teachers, Producers and IT Experts	Questionnaire and Semi-Structured Interview	Questionnaire and Interview Analysis
5.	To suggest a model for effective use of New Media based AV Material in the ODL system.	Education Experts, Video Production Experts and IT Experts Total 10 Persons	Focus Group Discussion via WhatsApp	Focus Group Discussion Analysis

3.3: Diagrammatic Representation of Methodology:

Table No. 3.2: Graphical Presentation of the Research Process



3.4: The Research Design selected for the present study:

The present study "Status, Effectiveness and Challenges of New Media in Indian Open University with special reference to Video Lecture" selected a Sequential Explanatory design from the several designs of the Mixed Method approach. The researcher observed during the review of literature that very few such studies have been carried out in the context of India, and although various studies on Open and Distance Learning have been conducted in India and the rest of the world, research related to New Media technology in Indian Open Universities is not much in number. As per the importance of the study, a need for Mixed Methods research design was felt by the researcher. Mixed-Method Research is frequently used by the researchers now a day as its approach to research is based on abductive reasoning. This can be understood as a process that values both deductive and inductive approaches but relies principally on the expertise, experience and intuition of the researchers. Associated with mixed-methods research, through the inter-subjectivity of researchers and their understanding based on shared meaning, this approach to reasoning encourages the use of both inductive and deductive approaches to research (Wheeldon & Ahlberg, 2012).

Creswell & Clark (2011) in the book 'Designing and Conducting Mixed Methods Research' defined a mixed-method as *"a method, which focuses on collecting, analyzing, and mixing both quantitative and qualitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches, in combination, provides a better understanding of research problems than either approach alone."* In general, mixed methods research represents research that involves collecting, analyzing, and interpreting quantitative and qualitative data

in a single study or in a series of studies that investigate the same underlying phenomenon (Leech & Onwuegbuzie, 2008).

In such a case as recommended by methodological review, the combination of mixed methods and explanatory approach was found appropriate and therefore, the present research selected a Sequential Explanatory Design among several Mixed Methods Research Designs. Sequential Explanatory Design possesses the ingredients of the quantitative research i.e. explanatory design supported by qualitative data carried out in a sequence. Sequential Explanatory design uses a two-phase process. The overall purpose of this design is that qualitative data help explain or build upon initial quantitative results (Creswell, Plano Clark, et al., 2003).

3.4.1: Explanatory nature of the study:

Explanatory Research is conducted for a problem that was hardly researched before, and it creates operational definitions and offers a better-researched model. It is a research design that focuses on explaining the dimensions of one's study in a detailed manner. The research starts with a general idea and builds upon a structure for the study. The explanatory method is used to provide details where a small amount of information exists for a certain issue or phenomenon. During the conduct of the research, the researcher should be able to adapt to the new data and the new insight that will be helpful in finding better conclusions.

The main purpose of Explanatory Research is to develop an understanding of a researcher on a definite subject. It provides flexibility in secondary sources, such as already published literature or data, which are commonly used. Explanatory research can be very important in providing directions to subsequent researches. Explanatory Research allows the researcher to offer an understanding into a specific subject, which

gives opportunities to study more. The deep study of subjects creates a cycle and the critical study of the subject develops more questions which lead to more ways for the researchers to solve more problems related to that subject. Usually, as methodological reviews suggest, Explanatory Research Design is to be employed in a situation when, for a research problem, there are very few in-depth and detailed studies to which one can refer for information about the problem. In other words, when the purpose of the research is to explore more to acquire a new insight into it in order to formulate a more precise problem, the explanatory studies come in hand. If the theory happens to be too general or too specific, research questions would be formulated. Therefore, a need for explanatory research was found appropriate by the researcher based on the extensive literature review. The ability of explanatory research to address research questions of all the types (what, why, how) inspired the researcher to select such design for the present study.

The explanatory design provides flexibility for a few constraints on the nature of activities employed or on the type of data collected. This research design enables the researcher to assess which existing theories and concepts can be applied to the problem. The explanatory design was selected because the approach to the research was very open and concentrated on gathering a wide range of data and impressions. Explanatory research provides conclusive remarks to problems and gives guidance on what future research should be conducted. In this study, a sequential explanatory design was used to find the Status, Effectiveness and Challenges of New Media based video lectures in Indian Open Universities. To offer a better-researched model as a conclusive answer to the present research, the explanatory research design was preferred.

The present research has used a Sequential Explanatory Design. The data collection process was conducted in two phases. The first phase was quantitative data collection and in the second phase, based upon the results and findings of the quantitative data, qualitative data was gathered and analyzed as the first and second objectives of the present study were quantitative in nature and the third and fourth objectives adopted qualitative merits. The fifth and last objective was focused on a model that was developed based upon the result of all four objectives.

3.5: Sources of Data

The research was based on primary as well as secondary data.

A: - Primary Source-

Primary data was collected with the help of questionnaires and interviews. The major source of primary data has been interviews of the Teachers, Producers and IT Experts of selected Indian Open Universities. Further, the data collection also used a survey of Students, Teachers and Producers, and IT Experts. In addition to all these, a focus group discussion was also conducted with selected IOUs Stakeholders.

B: Secondary Source-

The major source of secondary data was the websites of Indian Open Universities from where information was taken and critical analysis was done. Most of the secondary data was collected with the help of the IOU's websites to know about the status of New Media in IOUs.

3.6: Objective 01- To find out the status of New Media in Indian Open Universities**.**

The study was focused on New Media tools that were being used by India Open Universities. New Media has become a revolutionary medium globally for teaching and learning. The acceptance of this media is stepping forward into education. New Media has various tools including social media and digital mediums. NMIC (New Media Intervention Checklist) was developed to find out the status of new media. The checklist consisted of seven items of New Media. Fourteen Indian Open Universities, including the one and only National Open University (IGNOU), were selected as samples by using a purposive sampling technique. The data was gathered online which was available on the websites of all IOUs. Before data collection for the research, the checklist was sent to various experts for validation purposes. After getting the feedback, the checklist was modified. The main objective of the checklist was to collect the quantitative data from all 14 Indian Open University websites online.

3.6.1: Samples

In order to find out the status of new media in Indian open universities samples were selected from the list of OU's available with the Distance Education Bureau of India. According to the Distance Education of Bureau website, there are 13 State Open Universities, one National Open University and 196 distance education directorates in different educational institutes/universities. This study has been focused only on Indian Open Universities. Further, to know about the status of new media intervention, purposive sampling was used and all 14 Indian Open Universities were selected as Samples. The complete list is given below:

Table No. 3.3: 14 Indian Open Universities

SN	Indian Open University	Establishment Year	Website Address
1	Dr. B R Ambedkar Open University, Hyderabad	1982	www.braou.ac.in
2	Vardhman Mahaveer Open University, Kota	1987	www.vmou.ac.in
3	Nalanda Open University, Patna	1987	www.nalandaopenuniversity.com
4	Yashwant Rao Chavan Maharashtra Open University, Nasik, Maharashtra	1989	www.ycmou.digitaluniversity.ac
5	Madhya Pradesh Bhoj (Open) University, Bhopal	1991	www.bhojvirtualuniversity.com
6	Dr. Baba Saheb Ambedkar Open University, Ahmedabad	1994	www.baou.edu.in
7	Karnataka State Open University, Mysore, Karnataka	1996	www.ksoumysore.edu.in
8	Netaji Subhash Open University, Kolkata, West Bengal	1997	www.wbnsou.ac.in
9	Rajarshi Tandon Open University, Allahabad, Utter Pradesh	1998	www.uprtou.ac.in
10	Tamil Nadu Open University, Chennai, Tamil Nadu	2002	www.tnou.ac.in
11	Pt. Sunderlal Sharma Open University, Bilaspur, Chattisgarh	2005	www.pssou.ac.in
12	Uttarakhand Open University, Haldwani, Uttarakhand	2005	www.uou.ac.in
13	Krishna Kanta Handique Open University, Guwahati	2005	www.kkhsou.in
14	IGNOU, New Delhi	1985	www.ignou.ac.in

3.6.2: Tools

For the collection of the data, a tool NMIC (New Media Intervention Checklist) was developed. A checklist is an inventory of behaviors or skills where the researcher checks indicators that are being observed (Hodder Education & Hachette UK Company, 2017). A checklist may be a quantitative or qualitative tool. If the study is focused on specific criteria with a yes/no answer it becomes a quantitative tool. A checklist provides more information if the researcher records additional comments on the context (Hodder Education & Hachette UK Company, 2017). The researcher developed a checklist consisting of New Media related items. The check-list was named as NMIC (New Media Intervention Checklist).

The NMIC tool consisted of items related to New Media of Indian Open Universities. The tool focused on finding out the present status of the use of New Media based technologies at 14 Open Universities of India including one national open university i.e. IGNOU. The study involved mainly internet based New Media Technologies. Although most of the Open Universities in India have embraced New Media technologies in various ways, a uniform New Media based platform is not introduced as yet.

3.6.3: Items of Checklist

The NMIC tool had been developed on different indicators of new media. The tool consisted of the different New Media related contents and primarily focused on seven different types of which were:

1. E-SLM referring to any digitized text content.
2. Audio Channel which refers to any radio transmission.
3. Web Radio which refers to a website based audio channel.
4. TV Broadcasting channel referring to TV Channels.

5. YouTube channel which refers to universities' own YouTube-based Video Channel.
6. Social Media which refers to University's Facebook, Twitter, YouTube, Whatsapp etc. page.
7. Mobile App which refers to University's own mobile app.

3.6.4: Procedure

NMIC tool emphasized on the New Media criteria proposed above. The process of data collection was online. The checklist was developed with specific criteria based items. It was based on 'Yes' and 'No' answering pattern. The study followed the process of collecting data from Indian Open University websites. It was a web-based process and data was gathered from the different websites of all the fourteen Indian Open Universities. The content analysis of these websites based on the above mentioned items was carried out. Data collection covered the website of each open university with two alternatives- 'Yes' and 'No'- on selected criteria.

3.7: Objective 02- To find out the opinion of stakeholders about the effectiveness of New Media based video lectures.

3.7.1: Survey of Stakeholders

After finding out the status of new media from all IOUs, three Indian open universities were selected by using purposive sampling. These universities belong to different states and locations along with infrastructures related to New Media. As operationally defined, the New Media-based e-video lectures covered a study of YouTube video channels, video lectures shared via social media and all online digital media based video lectures. E-video lecture is a very important tool for learning and it has a profound impact on learners. It can be a rich and powerful medium in e-learning

because it can provide information in an attractive multi-sensory manner. Some studies had been done on the effect of instructional video on learning outcomes. However, the instructional videos used in previous studies were primarily either broadcasted through TV programs or stored on CD-DVDs. The linear nature of such video learning showed inconsistent results. The present study was intended to find out the efficacy of e-video lectures. The stakeholders were learners, producers and teachers of all the three Indian Open Universities. The survey method was adopted to collect the data on the opinion of the stakeholders of Indian Open Universities. The survey method was used because of its capabilities of obtaining information from large samples of the population. It is inclusive in the types and number of variables that can be studied, requires minimal investment to develop and administer and is relatively easy for making generalizations (Bell, 1996, p. 68). The main motto of this objective was to explore the effectiveness of e-video lectures as the advancements in multimedia and communication technologies are providing a powerful learning system with e-learning video components. The emergence of New Media interactive digital video technology allows students to interact with an instructional video. New media-based e-video lectures may enhance learner's engagement, and it can be used for improving learning effectiveness. *Carnegie Mellon University's just-in-time lecture project suggested that video-based education and training systems support the same level of teaching and learning effectiveness as face-to-face instruction* (Zhang, et. al., 2006). It was important to explore the opinion of the stakeholders on the effectiveness of e-video lectures. In this study, stakeholders were producers, presenters and users of video lectures.

3.7.2: Samples

To find out the opinion of stakeholders about the effectiveness of New Media based e-video lectures, purposive sampling had been selected. The study chose 3 Indian open universities through purposive sampling. The first sample of open universities was a national Open University, named Indira Gandhi National Open University, New Delhi. It had sufficient own infrastructure and manpower to produce video lectures and also had the facility for broadcasting and webcasting of video lectures. It had its own TV Channel named 'Gyan Darshan' and also had a YouTube channel 'e-GyanKosh IGNOU'. It had national and international reach via its enrolled students. Vardhman Mahaveer Open University, Kota Rajasthan had been selected as a second sample. It was a state open university and it had sufficient infrastructure to produce video lectures with fewer man power. It had facilitated students with their own YouTube channel named 'vmouonline'. Uttarakhand Open University, Haldwani was the third university that had been selected as a sample. Uttarakhand Open University did not have enough own sourced infrastructure and manpower to produce video lectures. But it had its own YouTube channel 'uoulive' which used outsourced infrastructure. All three universities had diversity according to their regions, infrastructure and learners. Stakeholders of these three Universities were selected as the samples. Stakeholders were persons who were associated with e-video lectures and consisted of Producers, Teachers and Learners.

3.7.3: Tools

To find out the opinion of stakeholders about the effectiveness of New Media based e-video lectures, a Questionnaire had been developed. It was based on quantitative parameters 'Yes' and 'No'.

To perform the survey questionnaire was used because it reaches a large number of people and is capable of obtaining standardized data. This research refers to the questionnaire as a tool to explore the opinion about the effectiveness of video lectures in Indian Open Universities.

One questionnaire was prepared for the teachers of Indian open universities including 16 different questions divided into four domains based on four types of parameters that were related to the effectiveness of video lectures. These four parameters were:

01. Duration of video lectures;

02. Format of video lectures;

03. Language of video lectures; and

04. Mode of Delivery of video lectures.

The second questionnaire was made for students of Indian Open Universities with 16 different Items divided into four domains. All domains were based on the same parameters as the teacher's questionnaire. The third questionnaire was developed for producers who were involved in producing video lectures. Sixteen items had been included with different parameters based on language, duration of video, format, mode of delivery and quality of videos. During the generation of the questionnaire, content validity had been taken into consideration. While making the questionnaire it was taken into consideration that questions should be well-balanced and covering the entire domain. Structure of the Questionnaire covered four parameters of measuring the opinion about the effectiveness of video lectures. For estimation of the reliability of this questionnaire, a pilot study was done with a group of students studying in Indian Open Universities. This pilot study was administered on 25 students and 15 experts of areas related to the research. The questionnaire was finalized after receiving the feedback from this study.

The reliability of the tool for objective 2 was measured at .760, which indicates relatively good reliability.

Table No. 3.4: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
.760	.760	16

3.7.4: Procedure-

A questionnaire was developed to explore the opinion of stakeholders on the effectiveness of video lectures. A group of 25 students was selected and the questionnaire was used in the pilot study. According to the responses of students, some corrections were made. Through personal contact and e-mails, expert opinion on the questionnaire was collected which helped to refine and improve the questionnaire. After the finalization of the questionnaire, data collection was started. Vardhman Mahaveer Open University was selected as a sample for the application of the questionnaire. A total number of 20 Teachers and 01 producer were selected as samples by using a purposive sampling method. Vardhman Mahaveer Open University had only 2 producers out of which one is the researcher who happens to be the interviewer and thus, only one producer was selected as sample.

Items of the Questionnaire were based on video lectures that were available on the New Media platform. A total number of 200 students were selected as samples by using purposive sampling. The students registered at different Regional centres of the University, comprising Under Graduate, Post Graduate, PG Diploma, Diploma and Certificate programs with different subjects were selected as samples for Data Collection. The questionnaire was filled by different stakeholders of the university.

Indira Gandhi National Open University was selected for data collections. Two hundred students were involved as samples via purposive sampling from study centres of IGNOU. Twenty teachers from different schools of IGNOU were used as samples for data collections. Ten Producers of the university provided their opinion regarding the effectiveness of video lectures.

Uttarakhand Open University was chosen for data collection. Two hundred students from different subjects were selected as samples by purposive sampling design and 20 teachers of different subjects were selected as samples using a purposive sampling design. Uttarakhand Open University did not have any producer post in their departments so, data could not be collected.

3.8: Objective 03- To identify barriers in producing New Media based video lectures in Indian Open Universities.

3.8.1: Stakeholders interview

Indian Open Universities are trying to reach maximum number of students for providing education. They have adopted many formats to deliver pedagogical instructions.E-learning technology has established a new zone of teaching and learning, especially for distance learning. Indian Open Universities are also trying to provide this technological facility to their students. Indian Open Universities are working on the up gradation of the e-learning facility. Video lectures can be a strong medium for teaching and learning through Open and Distance learning mode. It provides an educational path that has a wide reach. New Media platforms have become a revolutionary mechanism for e-learning. In the current scenario, some Indian open universities are trying to provide the facility of e-learning through broadcast and webcast. But other Indian Open Universities might not be having

enough infrastructures for producing the video lectures. This study was conducted to find out the barriers in producing video lectures by Indian Open Universities. The interview schedule was structured to expose the reason for the inhibition in producing video lectures.

3.8.2: Sample

The research objective was focused to identify the barriers in producing New Media based video lectures for Indian Open Universities. Vardhman Mahaveer Open University, Uttarakhand Open University and Indira Gandhi National Open University were chosen using a purposive sample technique. Video Producers of these universities were selected as samples. Ten producers were selected from Indira Gandhi Open University and one producer was selected from Vardhman Mahaveer Open University. It is pertinent to mention here that Vardhman Mahaveer Open University had only 2 producers out of which one is the researcher, who happens to be the interviewer and thus, only one producer was selected as sample. Uttarakhand Open University did not have any producer post so, it was not possible to conduct the interview.

A Producer involves the complete video production process and is responsible for video development. All three universities had different number of producers and so, they were varied in numbers during the selection of the sample.

The producer leads the production team and organizes video production with the help of the Team. A video production process follows three steps viz. 1. Pre-Production stage 2. Production stage 3. Post Production stage. Educational video production is a little bit different as compared to commercial video program production. The following production process is followed in educational video production:

1. Pre-Production- Generation of an Idea is the first step of the video production process. Something creative has to be done to develop an idea. The producer develops the idea with the help of the subject expert and related research. Scriptwriting should be done by the producer or the scriptwriter with the inputs of the expert. The location of the video shooting is finalized according to the script and nature of the video program. Video programs can be shot either in outdoor locations or in studio. After the completion of the script, the story-board is finalized.

Idea and Concept- Idea generation is a basic step of a video program production. It is used as a seed for the video program. The concept is a process of the development of the idea in a manner so as to decide whether video production should be shot in a feature film or a video lecture format. It is finalized after discussion among producers and subject experts.

Treatment- After developing the idea and concept, the treatment of the idea is decided. Treatment of the video production means to decide the format of video programs like individual video lecture or video panel discussion. A producer finalizes the treatment of the video program.

Research on the Selected Topic- Once treatment is decided, research on the topic takes place. At this stage, materials are collected based on the idea, concept and treatment. Further research work is also done for deciding the location for shooting which is also called location hunting.

Script Writing- Scriptwriting is the most important function of the pre-production stage. The producer writes the script of the video program with the help of a subject expert. Therefore, a producer's impression is definitely visible in the script of the film. The producer implements his skills in the script. Scriptwriting is finalized by the scriptwriter who is a member of the production team.

Budget- It is very important in develop the infrastructure related to New Media based video lectures. Budget designing is a primary work of video lecture production. According to its availability, the treatment of the video production is decided. Budgeting is a crucial task of the video production process.

Casting (Presenter) - After the budget is set, the producer needs people working in the video program. In the video, the lecture producer needs the Presenter cum expert who presents the video lecture. The producer selects the cast for the video program based on the budget and script. The producer needs to be aware of the presentation skills of the presenter and if required, producer should train the presenter with a short-duration training program.

Storyboard - After selecting a production team, a storyboard is created based on the script. This is also called a screenplay. In this storyboard, everything from the selection of the shot to the camera angle is prepared according to the script. Where will the shoot take place, what scenes will be there, what will be the shots in those scenes and what will be the camera angles- all these activities are determined through pictures which is called the storyboard. It has a diagrammatical approach which helps in video shooting of the video program. It can be done by a scriptwriter under the supervision of a producer.

2. Production- It is the main part of video production. In the educational program, the producer needs to set the location for shooting. Video lectures are mostly shot in the studio. In this process, video shooting and sound recording is done according to the script. The producer instructs cameramen, lighting men and sound engineers for starting the shoot.

Video shoot- The shooting is done by the cameraman based on the storyboard. Producer's work becomes very important in this. He gives instructions to the

cameramen and can ask them to take camera shots in addition to the storyboard if needed. The producer examines camera work as well as the Presenter's presentation. If the presenter's presentation is not good, then he also takes a re-take. Many cameramen are required for multi-camera setup.

Sound recording - The producer has to take care of the video as well as the audio. He also looks after the dialogue/ pronunciation and that whether the artist/presenter's speech is audible or not, or whether his voice modulation is good or not. A sound recorder or sound engineer is needed for this process.

3. Post Production- It is an important and the final process. Video program production cannot be completed without this process. In this process, everything from the video and sound editing to broadcasting and webcasting is done. The process refers to audio video editing and broadcasting and webcasting.

Video editing - In raw shoots, according to the script, the good shots are put in a sequence, which creates a scene. In raw shoots, those shots which are suitable to the producer and fit according to the script, are edited. A complete video program is made of different scenes. Video editing is currently very modern and all the editing work is done through software. If during editing it seems that a scene has not been shot properly, the producer gets it shot again. Expert video editors are needed for video editing.

Audio Editing - If there is some deficiency in the dialogue after the shoot, it can be edited through dubbing. Apart from this, if one wants to add any level or effect to the audio, it is done in audio editing. Background music editing is a part of this.

Special effects - Currently special effects are being widely used in the video program. According to the producer, the special effect makes the video more effective.

According to the scene and mood in the video, special effects are used. In an educational video program Animations and Graphics can be used as a special effect.

Broadcasting/ Webcasting- After these processes are finished, a video program is ready for Broadcasting or Webcasting. If the target audience is TV viewers, the programme will be broadcasted and if the target is New Media users, it can go for webcasting.

3.8.3 Tools- For this objective, an interview schedule was prepared.As interviewing involves asking questions and getting answers from participants in the study, it is a good idea when one needs qualitative data. Interviewing has a variety of forms including individual, face-to-face interviews and face-to-face group interviewing. The asking and answering of questions can be mediated by the telephone or other electronic devices (e.g. computers) (Robert Wood Johnson Foundation, 2006). As Scribano & Zacarías mention, the interview establishes a relationship among persons and that you must have an opening question. Keep the persons talking all the time. Ask them to clarify any ambiguous topics. Finally invite the interviewees to conclude the topic (Scribano&Zacarías, 2007). The semi-structured interview is characteristically based on a flexible topic guide that provides a loose structure of open-ended questions to explore experiences and attitudes. It has the advantage of great flexibility, facilitating the researcher to enter new areas and produce rich data. In addition, it helps the researcher to develop a statement with the information. Semi-structured interviews help to find out people's own views and descriptions. They are commonly used to gain information on the perspectives, understandings and meanings constructed by people. A semi-structured interview schedule was developed as a tool for this objective. Both types of questions- open-ended as well as close-ended- were included in the schedule. Questions were focused on problems that were faced during

video production. Questions were centered on the video production process from pre-production to post-production, content and video quality, manpower, training schedule for experts, presentation format of video lectures and minimum required infrastructure with the production team.

3.8.4 Procedure- As discussed, for this objective, a semi-structured interview schedule was developed. The process of these interviews was started from IGNOU EMPC Department New Delhi. There was a purposive selection of 10 producers as the interviewees. Before starting the interviews, the interviewer requested permission for video recording but the interviewees were ready only for audio recording. Interviews were conducted one by one in face to face format and data had been saved in audio format. Experts discussed many issues related to video production which were faced during the production of video lectures. The interviewees have given relevant answers regarding the issues. All interviews were focused on only video production barriers and suggestions were received regarding removing these barriers. After completing these interviews in IGNOU, the interviewer carried out interviews in Vardhman Mahaveer Open University, Kota. VMOU had only two video producers which were producing video lectures for the university's YouTube channel. Interviews were focused on issues that were faced during video lectures productions. Interviews were conducted in face to face format with audio recordings. University had an Electronic Media Production Centre with their own studio but there a dedicated production team was needed. Uttarakhand Open University was selected as the third university. UOU had no dedicated department for video production. This university needed infrastructure for video production. But they were trying to produce video lectures by outsourcing it to the third party. They had their own YouTube channel but video lecture production had not been started. The researcher got the

information that UOU had not appointed any producer for video lectures production so related data could not be gathered from there.

3.9: Objective 04 – To identify barriers in the utilization of New Media based video lectures in Indian Open Universities.

The fourth objective of the present study was to identify barriers in the utilization of New Media based video lectures in Indian Open Universities. Some of the Indian Open Universities have adopted New Media Technology, especially social media, but they cannot properly utilize it. All Indian Open Universities have been trying to reach students but they are facing some barriers. New Media based technology has become a strong medium for teaching and learning. It is working like a bridge between open and distance education and students. *Social media, social networks and social communities provide a new form of collaboration and communication for users* (Ebner, Lienhardt, Rohs, & Meyer, 2010). *Indeed, social media puts great emphasis on sharing, participating, and collaborating processes and activities* (Lucas & Moreira, 2009). However, Indian Open universities have been struggling for the proper utilization of New Media based technology. IOUs have been trying to offer New Media based video lectures, but many barriers are there in its utilization by a distant learner. *These technologies are internet-based, and they facilitate creativity, information sharing, and collaboration among users* (Clough, 2010). To identify barriers in the utilization of new media-based video lectures and to discuss their solutions, the research was conducted.

3.9.1 Samples- Stakeholders of all three Indian Open Universities were selected as samples. These universities were- IGNOU, VMOU and UOU. Stakeholder refers to students, teachers, producers, and IT experts of these IOUs. Two hundred students

from each IOU were chosen as samples using purposive sampling. Students could belong to any age, any subject and any program. Twenty teachers of each IOU with various disciplines were selected as samples. The sample of Producers and IT experts varied in all three universities. IGNOU has a massive infrastructure for video production. It has a large number of enrolled students to watch video lectures, relatively more teachers to shoot, a substantial number of producers for producing video lectures and relatively more IT experts to broadcast and webcast the video lecture. Although IGNOU has all the facilities related to New Media based e-learning but still it is struggling in utilizing video lectures. In the finalized sample, there were 200 students, 20 teachers, 10 producers and 5 IT experts as samples for this objective. VMOU has sufficient infrastructure for New Media based video production but it does not have an adequate production team. From this State Open University, 200 students, 20 teachers, one producer and one IT experts were selected as samples. Students could belong to any age, any discipline, any subject and any program. Two hundred students were selected as samples using purposive sampling design and twenty teachers were selected as samples. Vardhman Mahaveer Open University had only 2 producers out of which one is the researcher who happens to be the interviewer thus only one producer was selected as sample. UOU is a State Open University and it does not have sufficient infrastructure related to New Media based video production. Two hundred students and 20 teachers were selected as samples from UOU. There was no dedicated department for video production, lack of infrastructure and a deficiency of producers and therefore, no such video production expert could be selected. There was one IT expert serving their expertise so he was chosen as a sample.

3.9.2 Tools– To identify the barriers in the utilization of new media-based video lectures in Indian Open Universities a mixed questionnaire and a semi-structured interview schedule were developed as tools. Questionnaire and semi-structured interviews are often used in mixed-method studies to find out confirmatory results despite differences in methods of data collection, analysis, and interpretation. *Questionnaires and interviews are often used together in mixed-method studies investigating educational assessment* (e.g., Brookhart & Durkin, 2003; Lai & Waltman, 2008). *While questionnaires can provide evidence of patterns amongst large populations, qualitative interview data often gather more in-depth insights on participant attitudes, thoughts, and actions* (Kendall, 2008).

In a questionnaire, participants respond to prompts by selecting from predetermined answers (multiple choice responses). From the questionnaire tool, quantitative data had been gathered. Further, qualitative data were also collected using semi-structured interview. In a semi-structured interview, interviewers begin with a small set of open-ended questions, but spend interactive time probing participant responses. Semi-structured interviews have a qualitative approach. In present research for data collection from students, questionnaires were used as a tool which consisted of nine different types of questions which were based on the criteria of Internet, E-learning and New Media including social media. Nine items were included in the questionnaire which was prepared for teachers. Items were related to Internet, E-learning and New Media based criteria. The semi-structured interviews had also been conducted for 20 teachers with open-ended questions based on criteria of training, New media technology awareness of stakeholders and language and contents of video lectures. The questionnaire and interview schedule were developed for 10 producers and 10 IT experts of IGNOU. All questions were categorized into Internet, E-learning and New

Media based technology. The items of the data collection tools were related to barriers in the utilization of new media-based video lectures. Same questionnaire and interview schedule were used to get responses from 20 teachers of UOU.

UOU had no post of producer but it had an IT expert so the questionnaire and interview schedule were applied for the IT expert.

3.9.3 Procedure- To find out the barriers in utilizing New Media based video lectures three Indian Open Universities had been finalized as samples. Purposive sampling was used to choose 200 students at each of the three universities. The questionnaire was filled by students during the contact classes and practical classes at each of three IOUs. There were many students from different disciplines and programs. Twenty teachers were selected as samples from each of the three universities. Their responses were gathered using the questionnaire. Upon completion of the questionnaire, interview session was started. These interviews had been recorded in audio format and decoded on some parameters like new media-based technology, training, uses of the internet, awareness about the new media-based platform, e-learning and video lectures. For the collection of data, interviews were conducted for teachers and IT experts of all three universities including the Producers of IGNOU and VMOU. Data was gathered through face to face contact and email. Data collection was carried out via questionnaires and interviews. Interviewee's interviews were recorded in audio format.

3.10: Objective-05- To suggest a model for the effective use of New Media based AV Material in the ODL system.

3.10.1: Focus Group Discussion

Indian Open Universities (IOUs) have been facilitating the education of students through open and distance learning. According to Objective 01 findings, some Indian Open Universities have the facility of video production but don't have sufficient platform to spread it among students. Only IGNOU has its own television broadcasting channel called 'Gyandarshan'. Rest of the Indian Open Universities do not have their television channels. Some universities are associated with Gyandarshan. IGNOU provides the Time Slots to desirous universities. Gyandarshan TV Channel is broadcasting the video lectures through the analog-based platform other than new media. The findings of Objective 02 indicated the criteria of effectiveness of video lectures which were duration of the video lecture, language of video lecture, format of video lecture and mode of delivery of video lecture. Objective 03 identified the barriers and solutions for producing video lectures. Objective 04 was meant for identifying the barriers in utilizing new media-based video lectures and suggested solutions. After obtaining the result of all the four objectives, the researcher has developed a model for the effective use of New Media-based AV Material in the ODL system. The Model of New Media based Video lectures were crafted based on the outcomes of previous objectives.

Some criteria were selected for developing the model on the basis of the findings of all four objectives. According to the selected criteria, the model was developed. The criteria of the items were infrastructure related to video production, video production team, format, duration, language and mode of delivery of video lecture. After

developing the model the opinions of the related experts were received through a focus group discussion.

A focus group discussion involves gathering stakeholders from similar backgrounds to discuss a specific topic of interest. It is a qualitative based research where questions are asked about their perceptions, attitudes, beliefs, opinion, or ideas on the related topics. In the focus group discussion, experts were given freedom to discuss with other group members. It generally indicates group interviewing in which a small group of usually 5 to 8 people participate. It is led by a moderator (interviewer) in a loosely structured discussion related to the topic.

Focus group provides a deep, topic centred, subject-oriented, and varied discussion that would not be available through surveys. The focus group discussion (FGD) is a semi-structured data gathering tool in which purposively selected participants gather to discuss issues and concerns based on a list of key themes drawn up by the researcher/ facilitator (Kumar 1987).

Researchers agreed that the focus group discussion is a cost-effective and result-oriented technique. The structure of a focus group needs to take care so as to get the best quality discussion. Interaction is the key to a successful focus group discussion. Sometimes it may be a pre-existing group that interacts best for research purposes. It may be easier to recruit, have shared experiences, enjoy the comfort and provide the ability to challenge each other comfortably. Stewart and Shamdasani observed that "it is better to slightly over-recruit for a focus group and potentially manage a slightly larger group, than under-recruit and risk having to cancel the session or having an unsatisfactory discussion" (Mishra, 2016).

3.10.1.1: Focus Group Discussion via WhatsApp

The Focus Group was conducted via WhatsApp technology. It is App based tool of New Media. WhatsApp is an emerging technology which provides a platform to discuss and share their opinions and suggestions. It offers the participant the opportunity to write and express through Text, Audio, Video and lots of Emojis. Experts of the FGD were associated with Educational and Video Production related fields. One Producer, one Video Editor, one Scriptwriter, one Anchor, one Research Expert, one Assistant Editor, one IT Expert, and three Teachers were involved in this discussion. A total of Ten experts and One moderator participated in it. They have rich experience of New Media and Educational field. The major part of the Model belonged to Video Lecture productions and so, it was essential to include the video production experts. The Model was developed for Universities and its learners therefore educationists were concerted in this discussion. For the focus group discussion, semi-structured questions had been developed related to the Model structure. The discussion was conducted via New Media tool WhatsApp.

Focus group discussion was conducted to elicit expert opinion on the suggested model which was developed for effective use of New Media based video lectures in the ODL system. Here is a brief detail about the experts.

Table 3.5: Brief Profile of the Participants of Focus Group Discussion via WhatsApp

Participants	Name and Designation	Experience in Education and New Media	Sex
M1 (Moderator)	Mayank Gaur Enrolled for Ph.D. in Dept of Journalism & Mass. Com, VMOU Kota	15 years (New Media)	M
P01	Prof. (Dr.) R. R. Singh HOD Education, Dr. Shakuntala Misra National Rehabilitation University, Lucknow	18 Years (Education)	M
P02	Dr. R.C. Sharma Associate Professor, Dr. B. R. Ambedkar University, Delhi and Former Director, CIMCA	30 Years (Education)	M
P03	Dr. Akhilesh Kumar Assistant Professor, Vardhman Mahaveer Open University, Kota	12 Years (Education)	M
P04	Mr. Abhishek Nagar, System Manger, IET Lucknow	11 Years (IT)	M
P05	Mrs. Pooja Batra Jha, Assistant Editor, India.com (ZEE Network)	15 Years (New Media)	
P06	Mr. Gyananedra Trivedi Associate Producer, Loksabha TV	15 Years (New Media)	M
P07	Mr. Arvind Sharma Senior Video Editor, DD NEWS	13 Years (New Media)	M
P08	Mr. Chander Shekhar, Correspondent, DD NEWS	12 Years (New Media)	M
P09	Mr. Santosh Choudhary Anchor and Correspondent, DD NEWS	12 Years (New Media)	M
P10	Mrs. Aarti PhD Scholar and Website Content Expert	7 Years (New Media)	F

The Questions of the interviews were based on some important items which were gathered from the results of all four objectives. The items were as follows:

- Infrastructure of New Media based Video Lectures
- Video Production Team as Human Resources
- Video Production Format
- Short Term Training
- Language of Video Production
- Duration of Video Lectures
- New Media based Video Lecture Platform
- Awareness for New Media based Video Lectures.

The above items were important points for FGD. It was focused on these items. Focus Group Discussion was started by the moderator who gave a brief introduction to the participants and explained the purpose and scope of the discussion. Participants were asked to give their names and a short background profile about themselves. The discussion was structured according to the items which were prepared in advance. During the discussion, all participants were given an equal opportunity to participate. It was free from bias and made the participant discuss the focused points. In this FGD, the opinions were gathered via WhatsApp New Media tool.

This Methodology part is important for developing the shape of the research study. These research study processes will be followed in the entire research study. With the help of this chapter's data collection, data analysis and result chapter will be written and finalized.

Chapter-4

Data Collection, Data Analysis and Interpretations

4.0 Data Collection, Data analysis and Interpretation

4.1 Objective 01

4.1.1: Data Collection, Data analysis and Interpretation

4.2 Objective 02

4.2.1: Data Collection, Data analysis and Interpretation

4.3 Objective 03

4.3.1: Data Collection, Data analysis and Interpretation

4.4 Objective 04

4.4.1: Data Collection, Data analysis and Interpretation

4.5 Objective 05

4.5.1: Data Collection, Data analysis and Interpretation

Chapter 4

Data Collection, Data Analysis and Interpretation

Data collection is the process of gathering and quantifying information on different variables of interest. It is a systematic method that enables the researcher to answer research questions, test hypotheses, and evaluate outcomes. The data collection part of the research is collective to all fields of study including social sciences. Although methods contrast by discipline, the prominence on ensuring accurate and honest data collection remains the same. The goal of this data collection process is to capture quality evidence that interprets rich data analysis and allows the construction of a convincing and credible answer to questions that have been included. Data can be quantitative or qualitative but accurate data collection is essential to maintaining the integrity of research. In the process of research, data analysis and its interpretation are critical, as the collected data has to be analysed statistically and evaluated. Data collection and its analysis is an essential step in the process of the research. According to Kothari (1989), "The term analysis refers to the computation of measures along with searching for patterns of relationship that exist among data-groups."

In the previous chapter, research methodology of the present study was discussed. This chapter contains details of data collection and its analysis. In this chapter, an attempt is made to examine the status, effectiveness, and challenges of New Media in Indian Open Universities with special reference to Video Lectures. The data was collected from the Indian Open Universities, which included Students, Teachers, Producers and IT experts. Data was collected with the help of different data collection tools and the analysis of the same has been presented here.

In the context of the present study, data was gathered from the field of study through questionnaires, interviews, and focus group discussions.

Objectives of the Study:

1. To find out the status of New Media in Indian Open Universities.

2. To find out the opinion of stakeholders about the effectiveness of New Media based video lectures.

3. To identify barriers in producing New Media based video lectures in Indian Open Universities.

4. To identify barriers in the utilization of New Media based video lectures in Indian Open Universities.

5. To suggest a model for the effective use of New Media based Audio Visual Materials in the ODL system.

Research questions:

1. What is the status of New Media in Indian Open Universities?

2. What is the opinion of stakeholders about the effectiveness of New Media based video lectures?

3. What are the barriers in producing New Media based video lectures in Indian Open Universities?

4. What are the barriers in the utilization of New Media based video lectures in Indian Open Universities?

5. What could be an effective model for the effective use of New Media based Audio Visual Material in the ODL system?

4.1: Objective 1-The first objective of the research was to study the '**Status of New Media in Indian Open Universities.'** In the present scenario, New Media has bridged the gap between teachers and learners in distance education. Distance education has shifted to a new way of instructional delivery method through New Media technologies. In this study, the status of the utilization of New Media Technologies in Indian Open Universities is examined. Fourteen Indian Open Universities (IOUs) were studied, including 13 State Open Universities and one National Open University. New media technologies used by IOUs which include E-SLM, Audio Channel, Web Radio Channel, TV Broadcasting Channel, Web-Based Video Channel, Social Media and Mobile Apps, were investigated and analysed in the study.

It was observed that 80% of IOUs are providing E-SLM. 33% of IOUs are telecasting learning support materials via Radio Channels and 53% of IOUs have their own web Radio Channels. 27% of IOUs are broadcasting study materials via TV Channels and 73% of Indian Open Universities have web-based Video Channels (YouTube). 60% of IOUs are using Social Media platforms for learning support. 33% of IOUs have developed their own Mobile Application. Further, it was observed that although more than 50% of IOUs are using New Media technology in order to make it more effective, IOUs need to develop a robust system of distance education equipped with more enhanced &interactive new media technology. Hence, this research study provides a platform to find out the present status of New Media technology adopted by IOUs.

Thirteen State Indian Open Universities and One National Open University (IGNOU) were selected for data collection in this Research. Secondary data collection was done

through the websites of all the 14 Indian Open Universities. For this, URL of all 14 Indian Open Universities was taken into account.

Table 4.1: Indian Open Universities and their Websites' URL address

S. N.	Indian Open University	Website Address
1	Dr B R Ambedkar Open University, Hyderabad	www.braou.ac.in
2	Vardhman Mahaveer Open University, Kota	www.vmou.ac.in
3	Nalanda Open University, Patna	www.nalandaopenuniversity.com
4	Yashwant Rao Chavan Maharashtra Open University, Nasik, Maharashtra	www.ycmou.digitaluniversity.ac.in
5	Madhya Pradesh Bhoj (Open) University, Bhopal	www.bhojvirtualuniversity.com
6	Dr. Baba Saheb Ambedkar Open University, Ahmedabad	www.baou.edu.in
7	Karnataka State Open University, Mysore, Karnataka	www.ksoumysore.edu.in
8	Netaji Subhash Open University, Kolkata, West Bengal	www.wbnsou.ac.in
9	Rajarshi Tandon Open University, Allahabad, Utter Pradesh	www.uprtou.ac.in
10	Tamil Nadu Open University, Chennai, Tamil Nadu	www.tnou.ac.in
11	Pt. Sunderlal Sharma Open University, Bilaspur, Chhattisgarh	www.pssou.ac.in
12	Uttarakhand Open University, Haldwani, Uttarakhand	www.uou.ac.in
13	Krishna Kanta Handique Open University, Guwahati	www.kkhsou.in
14	IGNOU, New Delhi	www.ignou.ac.in

The websites of all 14 Indian Open Universities were visited and data was collected on seven evaluation criteria. The following table contains the significant findings of the research study that was done as per the pre-defined criteria:

Table 4.2: Indian Open Universities and their New Media Status

S. N.	Indian Open University	E-SLM	Audio Channel	Web Radio	Video Channel	Web Video Channel YouTube	Social Media	Mobile App
1	Dr. B R Ambedkar Open University, Hyderabad (1982)	No	No	No	Yes DD Saptagiri & Gyandarshan Channel	Yes BRAOU but only one video uploaded	No	Yes i-vidya
2	Vardhman Mahaveer Open University, Kota (1987)	Yes	No	Yes	No	Yes vmouonline	Yes Facebook Twitter LinkedIn, Google+	Yes vmouonline
3	Nalanda Open University, Patna (1987)	No	No	No	No	No	No	No
4	Yashwant Rao Chavan Maharashtra Open University, Nasik, Maharastra (1989)	Yes e-books	No	Yes Yashvaani YCMOU	No	Yes YCMOU	Yes Facebook *Google+	No
5	Madhya Pradesh Bhoj (Open) University, Bhopal (1991)	Yes	No	Yes Bhojvaani	Yes Video Lectures Telecast via Edusat	Yes Bhoj Darshan	No	No

S. N.	Indian Open University	E-SLM	Audio Channel	Web Radio	Video Channel	Web Video Channel YouTube	Social Media	Mobile App
6	Dr. Baba Saheb Ambedkar Open University, Ahmedabad(1994)	Yes Jyotirgamya	No	Yes Swadhyay	No	Yes Swadhyay web-TV	Yes Facebook Twitter	Yes 4 types 1.info@baou 2.courses@baou 3.studycentre@baou 4.iwanttostudy@baou
7	Karnataka State Open University, Mysore (1996)	Yes e-books	Yes Gyanvaani FM-105.6MHZ	No	No	No	No	No
8	Netaji Subhash Open University, Kolkata (1997)	Yes	Yes Gyanvani Programme	No	No	Yes NSOU-Audio-Visual Resources	No	No

S. N.	Indian Open University	E-SLM	Audio Channel	Web Radio	Video Channel	Web Video Channel YouTube	Social Media	Mobile App
9	Rajarshi Tandon Open University, Allahabad, UP (1998)	Yes	Yes but not working	No	No	Yes UPRTOU Allahabad But only Cultural Videos Available	Yes Facebook Twitter	Yes UPRTOU
10	Tamil Nadu Open University, Chennai (2002)	No	No	Yes TNOU	No	No	No	No
11	Pt. Sunderlal Sharma Open University, Bilaspur (2005)	Yes	No	No	No	Web broadcast icon available but not working	Yes Twitter	No

S. N.	Indian Open University	E-SLM	Audio Channel	Web Radio	Video Channel	Web Video Channel YouTube	Social Media	Mobile App
12	Uttarakhand Open University, Haldwani (2005)	Yes	Yes 91.2FM	Yes Hello Haldwani	Yes Gyandarshan	Yes uouonline	Yes Facebook Twitter LinkedIn Google+	No
13	Krishna Kanta Handique Open University, Guwahati (2005)	Yes E-BIDA	Yes AIR-Ekalvya Programme	Yes JANAN TARANGA community Radio	No	Yes KKHSOU	Yes Facebook Google+	Yes SMART KKHSOU
14	IGNOU, New Delhi (1985)	Yes	Yes Gyanvani	No	Yes Gyandarshan	Yes E-Gyankosh	Yes Facebook Twitter	No

The above table indicates the data of all 14 Indian Open Universities which was gathered from their websites. The following details are shown in the analysis of data.

4.1.1: Use of New Media in Open Universities in India

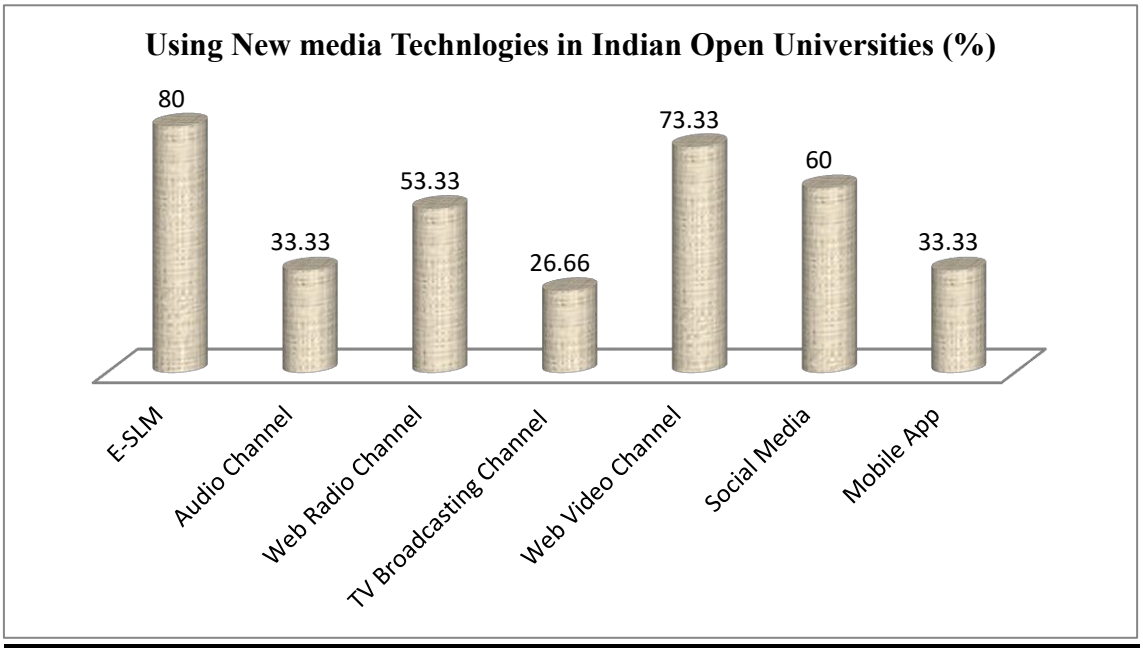


Figure-4.1 Use of New Media in Open Universities in India

Analysis of the obtained data indicates that approximately 80% of IOUs are providing E-SLM and likewise, about20% IOUs has not developed any such mechanism. Around 33% of IOUs are using audio channels like FM or Community Radio, 53% of IOUs are using Web Radio, while 27% of IOUs are broadcasting videos for distance learning purposes. It was found that YouTube Channels were a trending medium of video webcasting, and 73% of IOUs have their own YouTube channels. Approximately 29% of IOUs are using both broadcasting and webcasting technology. About 60% of IOUs are having their social media web page and are active on social media. Approximately 33% of IOUs have developed their mobile apps.

4.1.2: Criteria of Comparison:

4.1.2:1: Use of E-Self Learning Materials

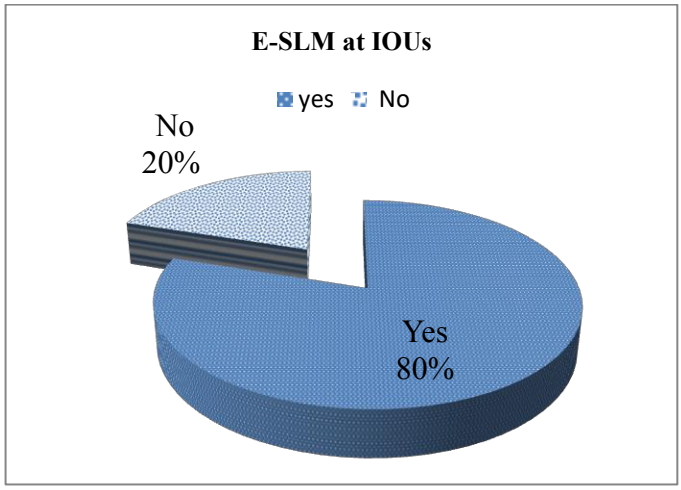


Figure-4.2 Use of E-SLM at IOUs

The above figure indicates that 80% of the IOUs are providing E-SLM to the students and 20% of IOUs have no such E-SLM on their websites. E-SLM refers to digitalized study materials like e-books, e-papers, question banks, etc.

4.1.2:2: Use of Audio Channel at IOUs

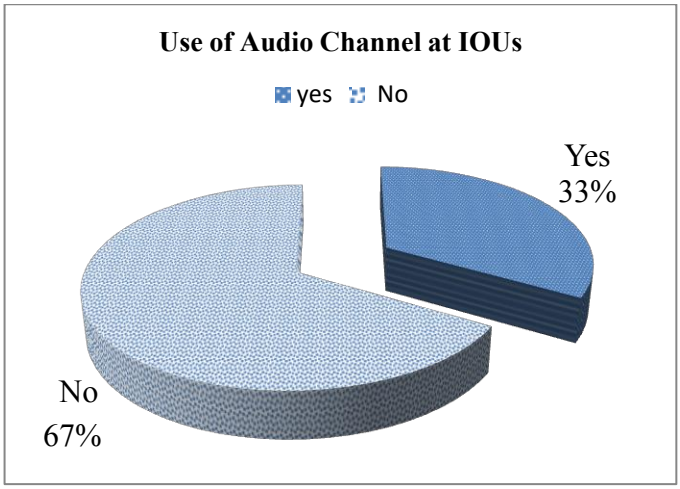


Figure 4.3 Use of Audio Channel at IOUs

The above figure indicates that Indian Open Universities commonly use Gyanvani FM or AIR FM or Community Radio to facilitate the students. As mentioned in the above figure, 33% of Indian Open Universities are using Digital Audio Channels and approximately 67% of IOUs have no such facility.

4.1.2:3: Use of Web Radio Channel at IOUs

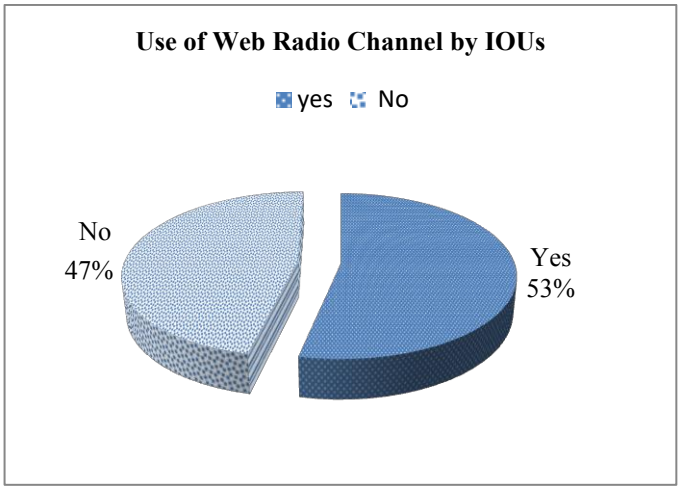


Figure-4.4 Use of Web Radio Channel by IOUs

Web Radio is a new intervention in the field of radio transmission. It is an internet-based platform to educate the students. Approximately 47% of Indian Open Universities are using web-radio and 53% of IOUs have no such facility.

4.1.2:4: Video Broadcasting at IOUs

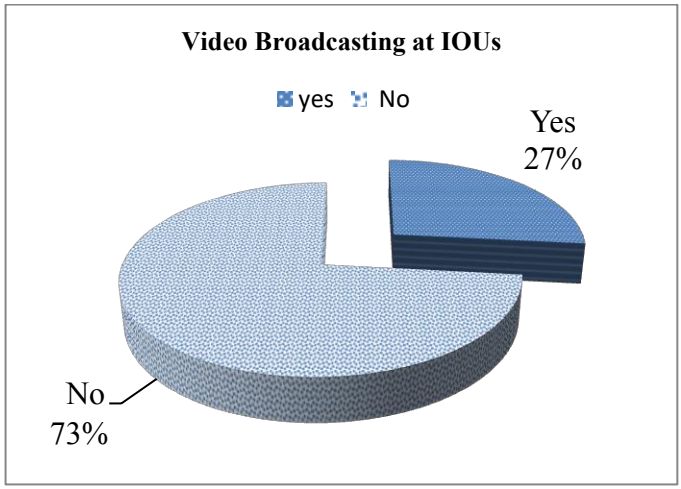


Figure-4.5 Video Broadcasting at IOUs.

Above figure indicates that 29% of IOUs have Video Broadcasting technology for their learners, whereas 71% of IOUs have no such facility to cater to the need of their learners.

4.1.2:5: Web Video Channel

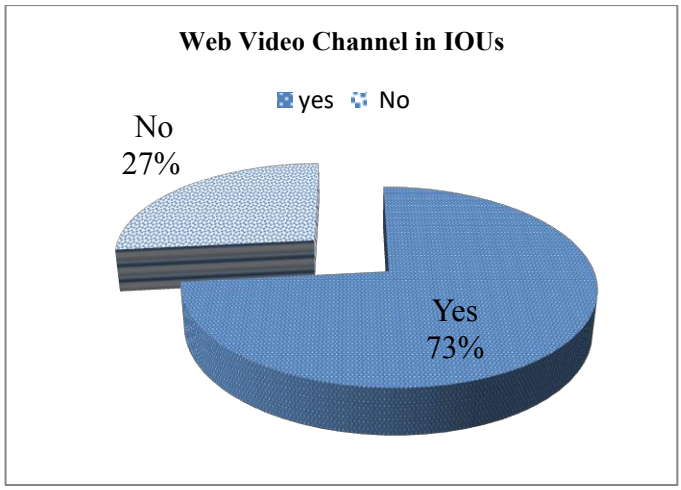


Figure-4.6 Web Video Channel at IOUs

Data obtained indicates that 79% of Indian Open Universities have created their own YouTube Channel, which is being used for distance learning and 21% of Indian Open Universities have not developed any such channel.

4.1.2:6: <u>Use of Social Media in IOUs</u>

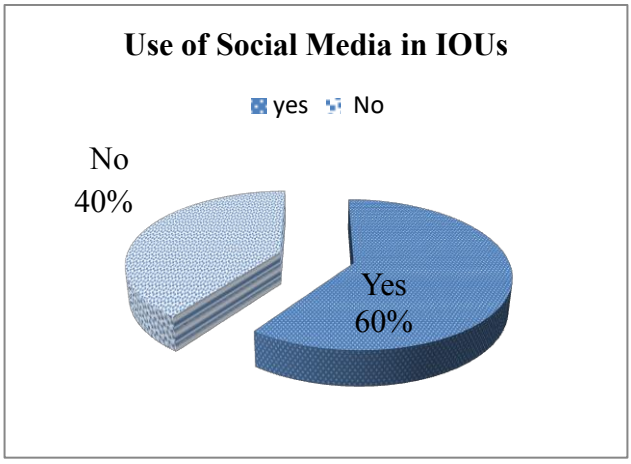


Figure 4.7 Use of Social Media in IOUs

The above figure indicates the use of Social Media by the IOUs. It is one of the emerging parts of New Media technology. Approximately 64% of the IOUs have created their own social media web pages which help the students in learning. In contrast, 34% of the IOUs have not yet adopted Social Media for their academic purposes.

4.1.2:6: <u>Mobile App developed by IOUs</u>

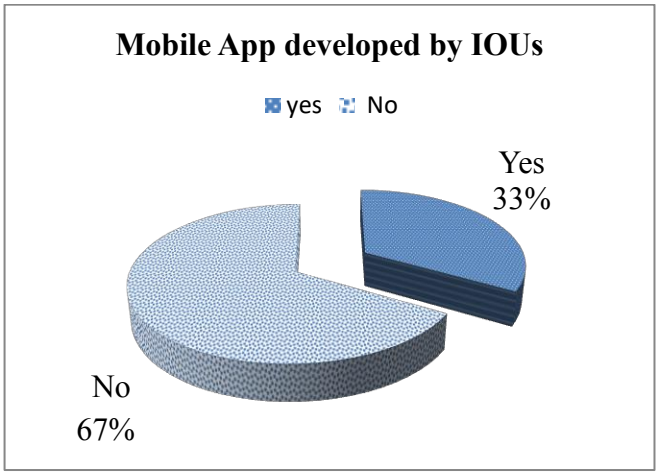


Figure-4.8 Mobile App developed by IOUs

Mobile Apps are an essential part of New Media. Imprecisely 36% of IOUs have developed their mobile apps like i-vidya, vmouonline, iwanttostudy@baou, uprtou, smartkkhsou, while 64% of IOUs are not using this technology.

In the research study, the status of New Media technologies which were used by IOUs was investigated. The research was conducted on certain New Media parts like E-SLM, web channels, mobile apps, etc. It was observed that IOUs have started to adopt New Media Technology for their distance learning program. After exploring the websites of all the 14 IOUs, it was concluded that 80% of IOUs are providing E-SLM and 33% of IOUs are using audio channels like FM or community Radio. While 53% of IOUs have their own web-based radio system for distance learning, 27% of IOUs are using video broadcasting technology for distance learning purposes. YouTube Channels have become a popular medium for video webcasting as 73% of IOUs are having their own YouTube channels. 60% of IOUs are active on social media and have their own social media web pages. Among the 14 IOUs, 33% have developed their mobile apps for distance learning. It was observed that IOUs are shifting from traditional study support technologies to New Media based technologies, but they require developing a more structured Learning Model. It will create a new, broad horizon for students of distance learning. Indian Open Universities need to create a model for providing all the learning facilities to the students, primarily through the video learning material, which is an essential part of New Media technologies. New Media based technology is offering a pedagogical path to all the students who want to gain knowledge through distance learning. Conclusively, it can be interpreted that the use of New Media based technologies in Indian open universities has a broad scope, but it has a long way to go.

4.2: Objective 02: The second objective of the research was to explore '**the Opinion of Stakeholders about the Effectiveness of New Media Based Video Lectures.'** Three Indian Open Universities out of 14 IOUs had been selected. IGNOU, VMOU and UOU were chosen for data collection. Students, Teachers and Producers of all three universities were selected as stakeholders. A questionnaire was developed for the collection of data from stakeholders in a 'Yes' and 'No' answer format. The questionnaire was crafted with 16 items covering four domains of video lectures, viz. 1. Duration of the Video Lecture, 2. Presentation Format of Video Lecture, 3. Language of Video Lecture, and 4. Mode of Delivery of Video Lecture. The subjects selected from three Indian Open Universities were requested to fill the questionnaire and record their response to each question. The responses obtained on each item of the questionnaire were given further statistical treatment, the details of which are as follows:

4.2.1: Video Lectures are Easy to Access at Any Time and Everywhere

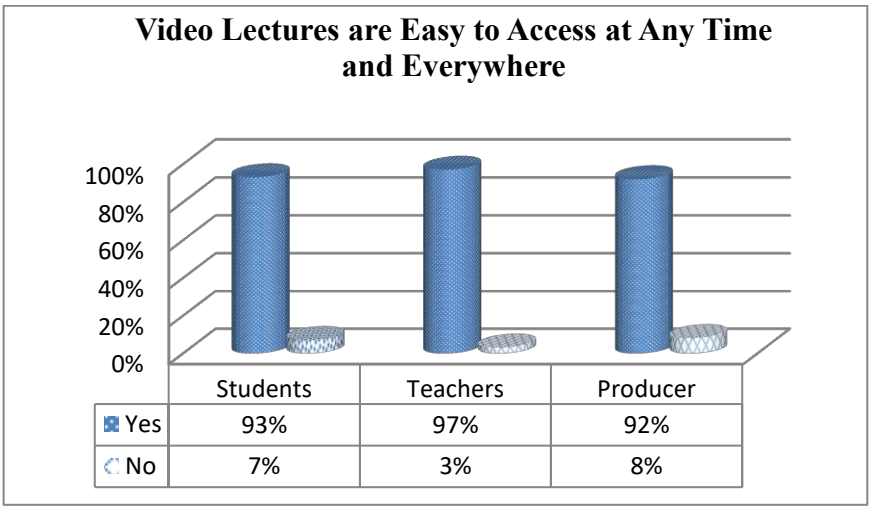


Figure-4.9 Video Lectures are Easy to Access at Any Time and Everywhere

On item 01, 93% of total students accepted that the Video Lectures are easy to access at any time and everywhere, while 7% of students denied it. Figure 4.9 also shows the

Teachers' and Producers' responses on video lectures accessibility. Approximately 97% of teachers agreed that Video Lectures are easy to access at any time and everywhere while 3% of teachers did not agree with it. The above figure is shows that 92 % of producers said 'Yes' in favour of accessibility of video lectures while 8% of producers said 'No' to it. Accessibility is one of the parts of items that showed the effectiveness of video lectures for the distance education system. Video Lectures will be useful when their availability will be easy.

4.2.2: Video lectures are Effective in Open Distance Learning

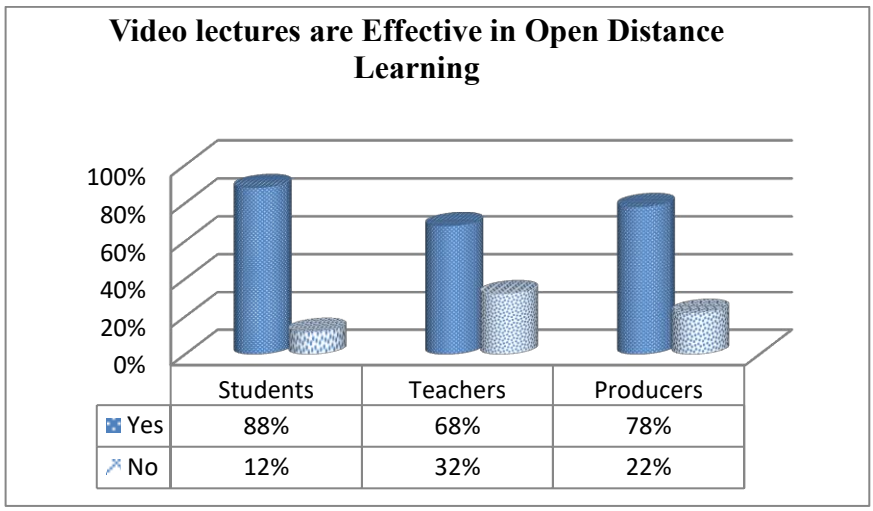


Figure-4.10 Video Lectures are Effective in Open Distance Learning

Fig. 4.10 shows the responses of Students, Teachers and Producers on Item no. 02. 88% of the total students agreed with the item 02 'Video lectures are effective in Open Distance Learning,' but 12 % of students did not agree with this item. 68% of Teachers had a favourable opinion about this item's statement and 32% of Teachers did not agree with this. 78% of Producers gave their response in favour of statement of item no 02 'Video lectures are effective in Open Distance Learning,' and 22% of Producers did not give any positive response.

Domain 01- Duration of Video Lectures

ITEM 03. The duration of an effective video lecture should be less than 15 min.

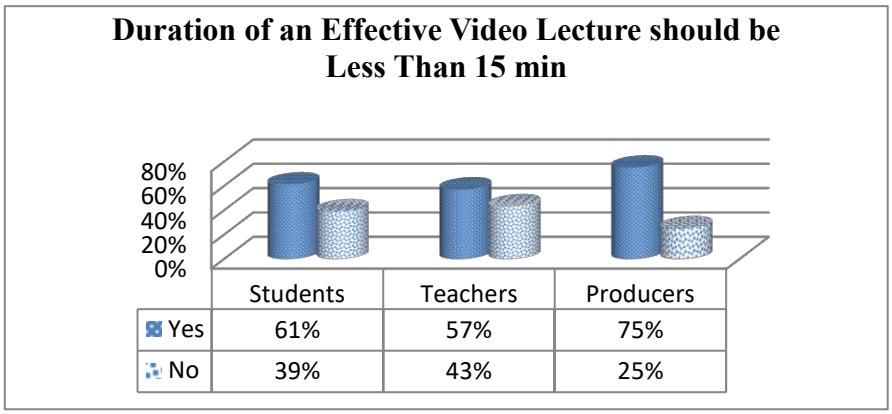


Figure-4.11 Duration of an Effective Video Lecture should be Less Than 15 min

Figure 4.11 depicts the replies of Students, Teachers, and Producers on item no. 03. 61 % of students accepted the effectiveness of the video lectures which are of less than 15 min, but 39% did not accept the same. 57 % of teachers agreed that video lectures of less than 15 min duration are effective and 43% of teachers did not agree with this. 75% of Producers showed their positive intent in favor of item no. 03, and 25 % of Producers denied this statement.

ITEM 04. The duration of an effective video lecture should be 16 to 30 min.

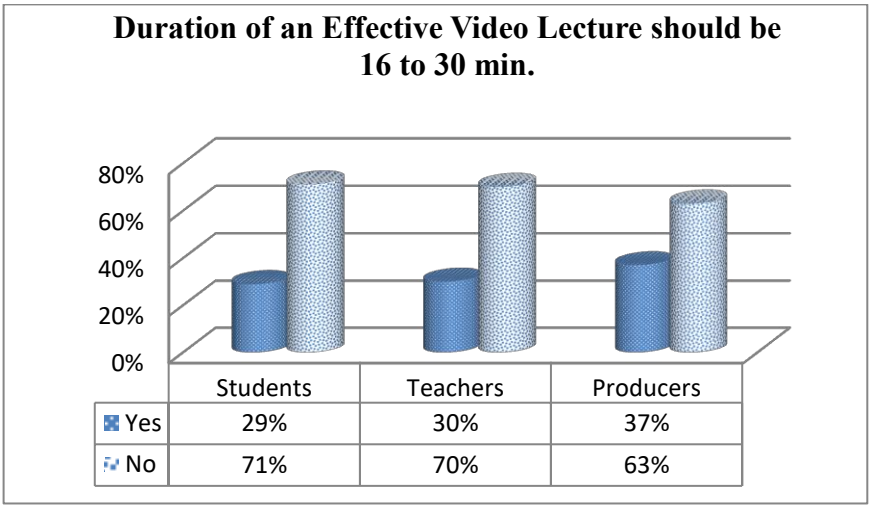


Figure-4.12 The Duration of an Effective Video Lecture should be 16 to 30 min.

On this item, 71% of students did not agree that the duration of an effective video lecture should be 16 to 30 min. In contrast, 29% of students accepted that the duration of an effective video lecture could be 16 to 30 min. Figure 4.12 indicates that 70% of Teachers said 'No' to Item 04 and only 30 % of Teachers said ‘Yes’ to this item’s statement. 63% of Producers said that the duration of the video lecture of 16 to 30 minutes was not effective and 37 % of the Producer agreed with this item’s statement.

ITEM 05. The duration of an effective video lecture should be more than 30 min.

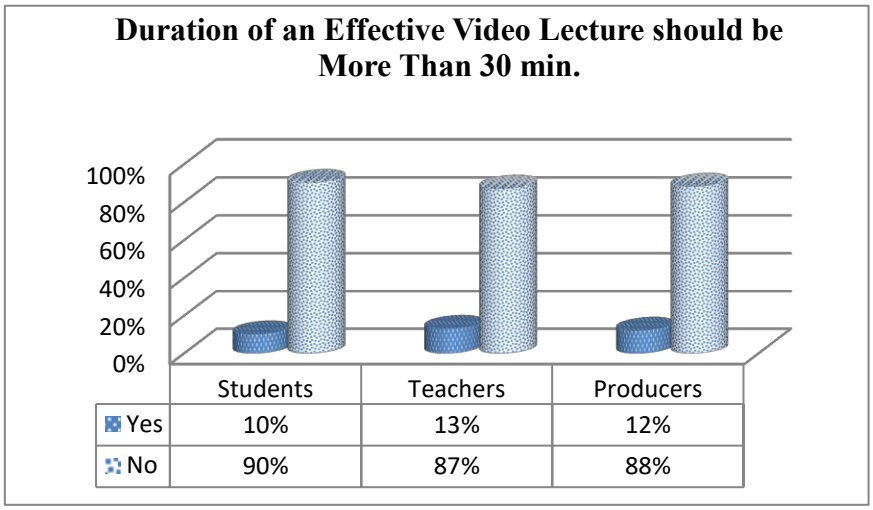


Figure-4.13 The Duration of an Effective Video Lecture should be More Than 30 min

The fig. 4.13 shows that 90% of students refused to accept that the duration of an effective video lecture should be more than 30min whereas 10% of students liked that the duration of video lectures should be more than 30 min. About 87% of teachers do not show much interest in more than 30 minutes duration of effective video lectures while 13% of teachers agreed with it. Approximately 88% of Producers did not agree that video lectures of more than 30 min were effective. Only 12% of Producers agreed with it.

Domain -02 Presentation Formats of Video Lectures

ITEM 06. Only Presenter based video lecture format

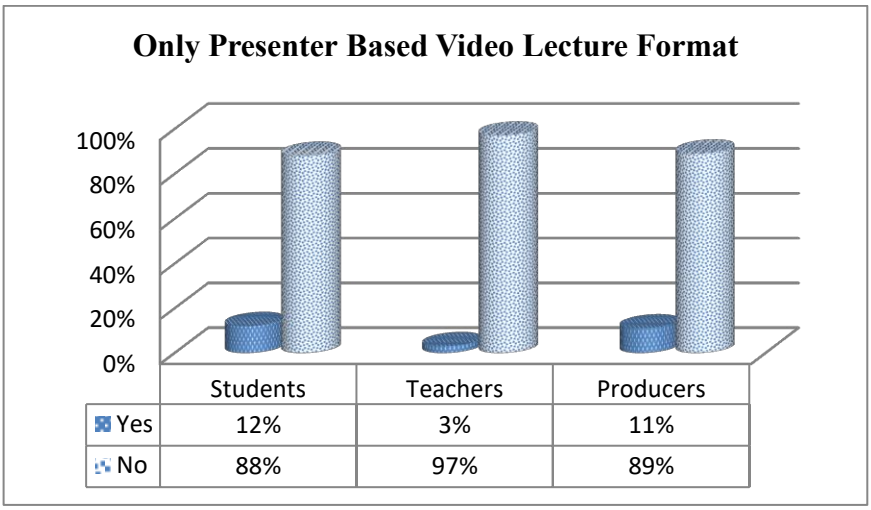


Figure-4.14 Only Presenter Based Video Lecture Format

Figure 4.14 shows that 88% of students did not like the only presenter based video lecture format and only 12% of students liked this format. 97% of teachers did not show any interest in this presentation format, only 3% of teachers showed their interest in it. The percentage of producers who did not like to watch the only Presenter based video lectures was 89%, and the remaining only 11% of producers liked to watch this.

ITEM 07. Voice Over+ PPT based format of Video Lecture

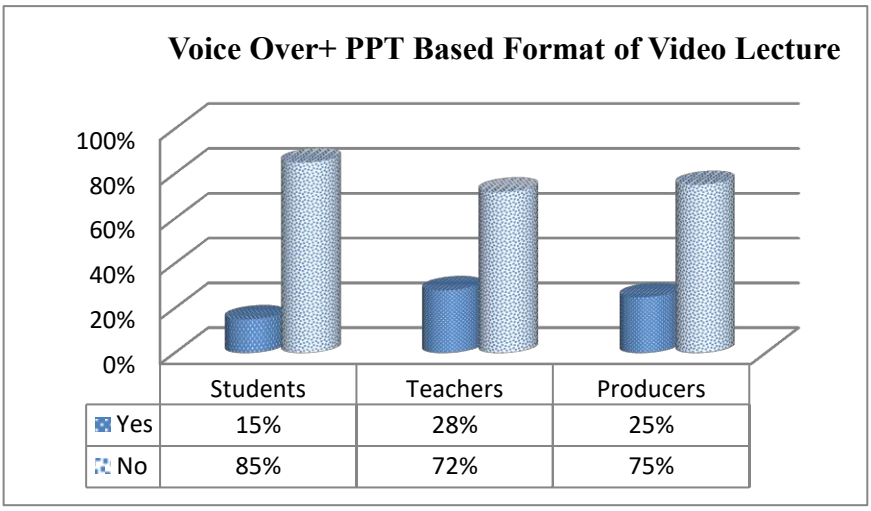


Figure-4.15 Voice Over+ PPT Based Format of Video Lecture

Figure 4.15 depicts the replies of Students, Teachers and Producers on item no. 07. 85% of students accepted that they did not like to watch Voice Over+ PPT format based Video lectures and only15% liked to watch the same. 28% of teachers agreed that Voice Over+ PPT format based video lectures were effective and 72% of teachers did not agree with this. 25% of producers showed their positive intent in favour of item no. 07, and 75% of producers denied this statement.

ITEM 08. Presenter+ PPT+ Animation+ Graphics based format of video lectures

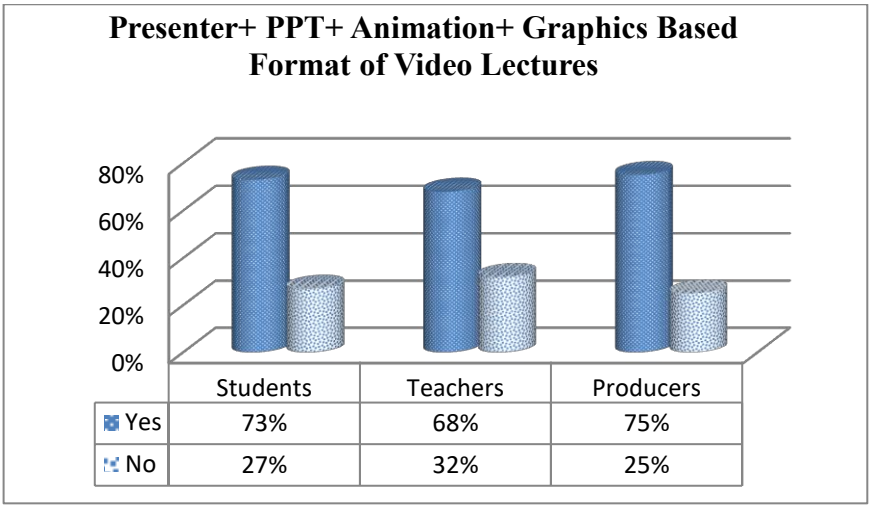


Figure-4.16 Presenter+ PPT+ Animation+ Graphics Based Format of Video Lectures

According to this figure, 73% of students agreed that Presenter+ PPT+ Animation & Graphics format based video lectures are effective for learning, while 27% of students did not accept this format. Figure 4.16 indicates that 68% of teachers said 'Yes' to Item 08 and only 32% of teachers said ‘No’ to this item’s statement. 75% of producers said that Presenter+ PPT+ Animation+ Graphics format based video lectures were effective for learning and 25 % of producers did not agree with this item’s statement.

Domain -03 Language of Video Lectures

ITEM 09. English Language-Based Video Lectures

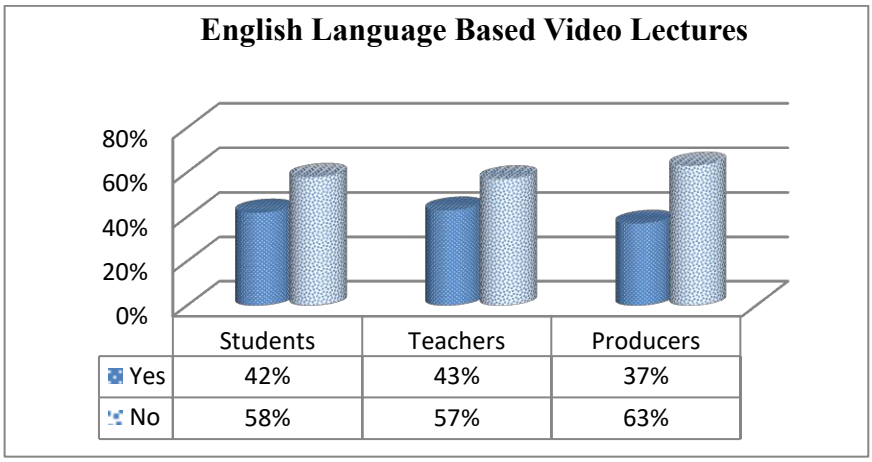


Figure-4.17 English Language-Based Video Lectures

Fig. 4.17 shows the responses of Students, Teachers and Producers on Item no. 09. 42% of the total students agreed that the English language-based video lectures were effective for distance learning, but 58 % of students did not agree with this item. 43% of teachers had a positive opinion about this item's statement and 57% of teachers did not agree with this. 37% of producers gave their response in favor of the statement of item no 09 'English language-based video lectures effective for distance learning,' and 63% of producers said 'No' for it.

ITEM 10. Hindi Language-Based Video Lectures

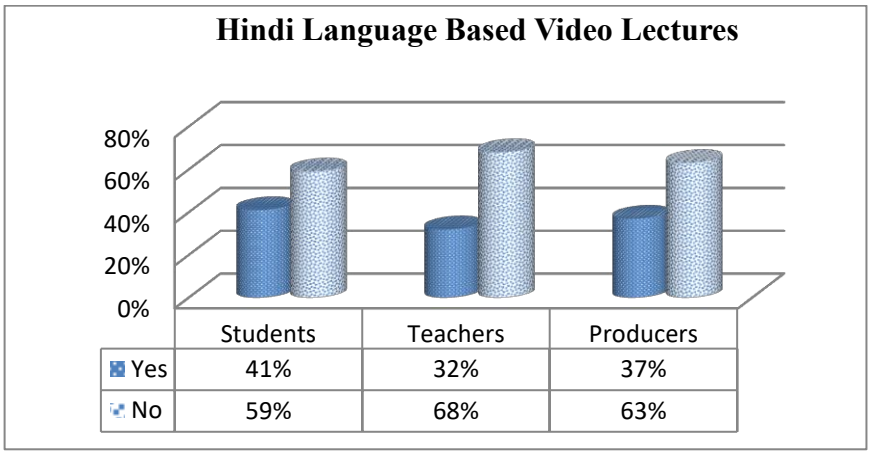


Figure-4.18 Hindi Language-Based Video Lectures

Fig. 4.18 shows the response of Students, Teachers and Producers on Item no. 09. 41% of the total Students agreed that the Hindi language-based video lectures were effective for distance learning, but 59 % of students did not agree with this. 32% of teachers had a favorable opinion about this item's statement and 68% of teachers did not agree with this. 37% of producers gave their response in favor of the statement of item no. 09 'Hindi language-based video lectures effective for distance learning' and 63% of producers said 'No' for it.

ITEM 11. Regional Language-Based Video Lectures

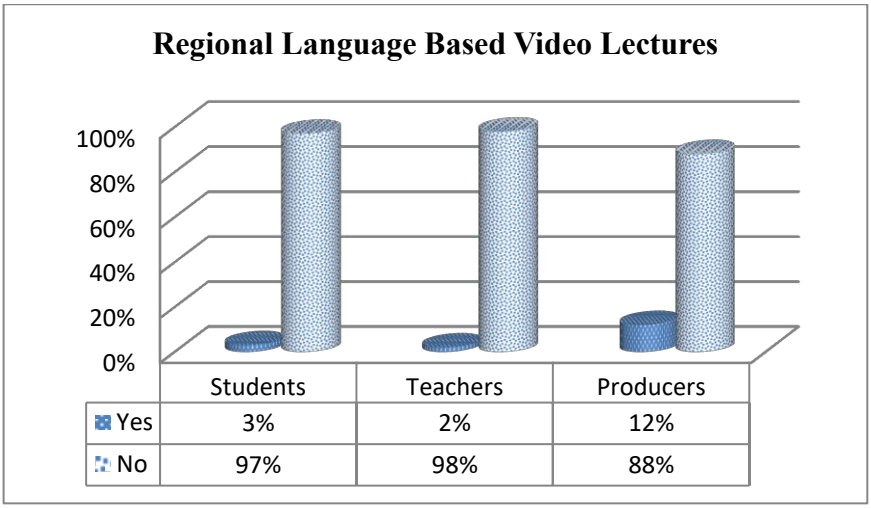


Figure 4.19 Regional Language-Based Video Lectures

Fig. 4.19 shows that 97% of students refused to like the regional language-based video lectures whereas only 3% of students liked the regional language-based video lectures. 100% of teachers did not like the regional language-based video lectures. 88% of producers did not agree that the regional language-based video lectures are effective. Only 12% of producers agreed with it.

ITEM 12. The Bi-Lingual (English & Hindi Mix) Language- Based Video Lectures

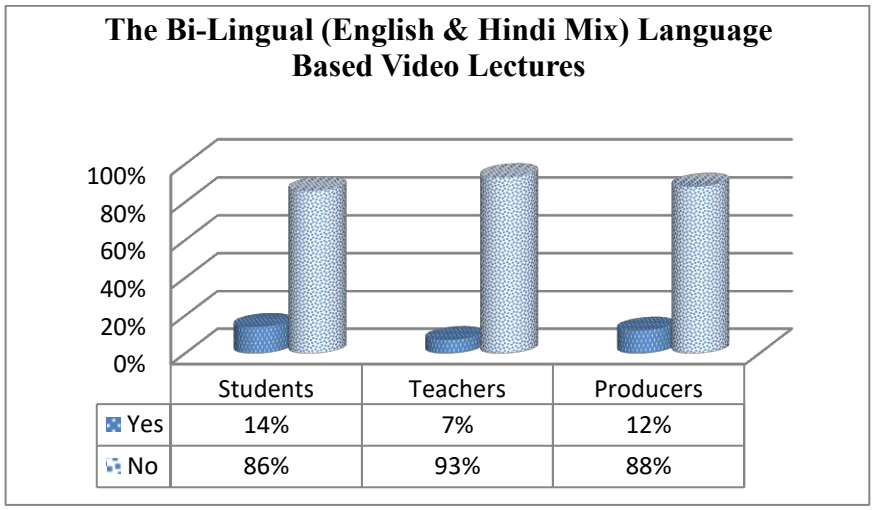


Figure 4.20 The Bi-Lingual (English & Hindi Mix) Language-Based Video Lectures

Figure 4.20 shows that 86% of students did not like the Bi-Lingual (English & Hindi Mix) language-based video lectures and only 14% of students liked this. 93% of teachers did not show any interest in the Bi-Lingual language-based video lectures. Only 7% of teachers showed their interest in it. About 88% of producers did not like the Bi-Lingual language-based video lectures.

ITEM 13. The Mode of Delivery of Video Lecture should be online and Web-Based

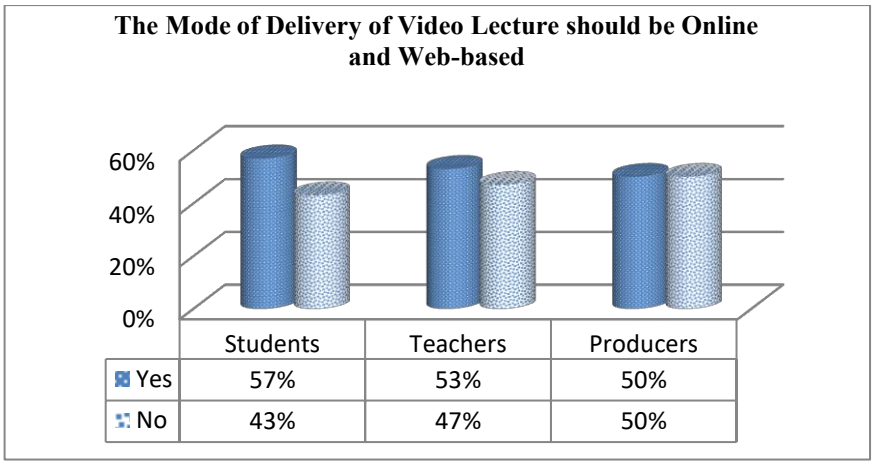


Figure 4.21 The Mode of Delivery of Video Lecture should be online and Web-based

As per this figure, 57% of students agreed that the online and web-based video lectures are effective while 43% of students did not accept this mode of delivery. Figure 4.21 indicates that 53% of teachers said 'Yes' to Item 13 and only 47% of Teachers said ‘No’ to this item’s statement. 50% of producers noted that the online and web-based video lectures are effective for learning and 50 % of producers did not agree with this item’s statement.

<u>ITEM 14</u>. The Mode of Delivery of Video Lecture should be Offline CD/DVD or Storage Device Based

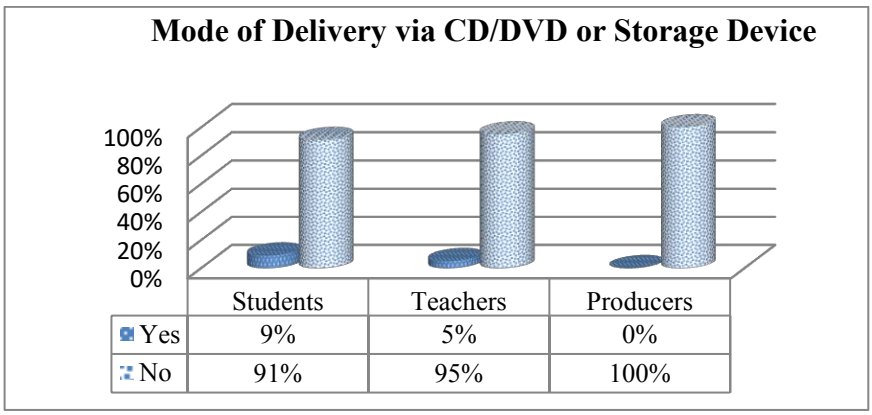


Figure 4.22 Mode of Delivery via CD/DVD or Storage Device

Fig. 4.22 shows that 91% of students refused to like the offline CD/DVD or Storage Device based video lectures. Only 9% students wanted offline CD/DVD or Storage Device based video lectures. 95% of teachers did not like offline CD/DVD or Storage Device based video lectures and only 5% of Teachers liked this. Producers were refused that mode of delivery via CD/DVD or Storage Device for video lectures.

ITEM 15. The Mode of Delivery of Video Lecture should be TV Broadcasting Based

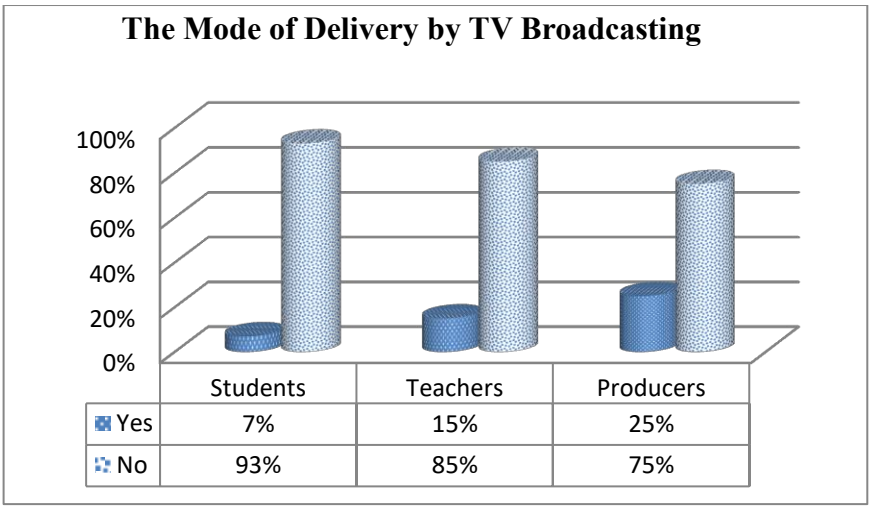


Figure 4.23 The Mode of Delivery by TV Broadcasting

Fig. 4.23 shows that 93% of students refused to accept the effectiveness of broadcasting mode based video lectures. Teachers did not like broadcasting mode based video lectures- 85% of teachers denied it and a very few,15% of teachers, said 'Yes' to this. 75% of producers did not agree that broadcasting based video lectures were effective. Only 25% of producers agreed with it.

ITEM 16. The Mode of Delivery of Video Lecture should be Mobile or Android App-Based

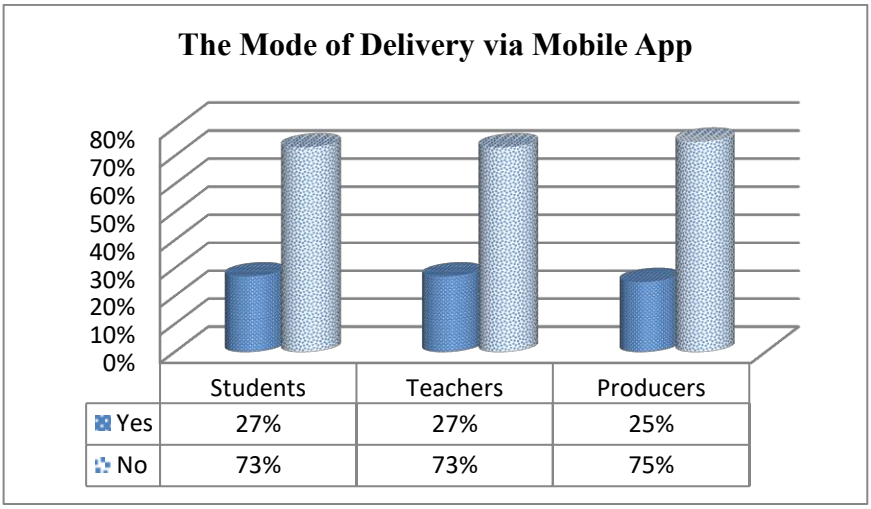


Figure 4.24The Mode of Delivery via Mobile App

Fig. 4.24 shows the response of Students, Teachers and Producers on Item 16. 27% of the total students agreed that mobile/ android app-based video lectures are effective but 73% of students did not agree with this item. 27% of teachers had a favourable opinion about this item's statement and 73% of teachers did not agree with this. 25% of producers gave their response in favour of the statement of item no. 16 and 75% of producers said 'No' to it.

4.3 Objective 3- To Identify Barriers in Producing New Media Based Video Lectures in Indian Open Universities.

Three Indian Open Universities out of 14 IOUs- IGNOU, VMOU, and UOU- were selected for data collection. In this objective, stakeholders were Producers from all three Universities. As compared to the commercial video program, the educational video program is different. According to the mood of the video program, Video Producer's role also changes. In educational video production, a Video Producer produces video programs and is responsible for the entire production process. He leads all the members of the production team. In the educational video, the Program Producer leads a video production team consisting of many hard-working members.

A Video Production consists of three phase's viz. 1. Pre-Production 2. Production 3. Post Production.

A production team is required to perform a video production process. Different production members are needed for different phases. Presenter cum Expert, Researcher, Scriptwriter and Storyboard writer perform their role in the Pre-Production phase. The Production phase requires experts such as Camera Persons, Assistant Camera Persons, and Lighting men, Electric Engineers, Sound Engineer and Sound Recorder. Post-Production is a crucial process of video production and it is

completed with the help of Video Editors, Sound Editors, Animators, Graphic Artist and IT Experts. The producer has to face several problems during the entire educational video production. Therefore, he/she can highlight the difficulties or barriers faced in the creation of New Media-based video lectures.

For this objective Ten (10) Producers from IGNOU and One Producer of VMOU had been taken as samples. UOU had no video producer post and so, the sample could not be taken from UOU.

An interview schedule was designed, which included open-ended questions related to New-Media technologies. The response of video producers on each question was recorded. All these questions were related to video production. In educational video program production, the producer is solely responsible for it and the producer gets his production team to work. These interviews focused on the obstacles which were faced by the producer during the video production. An attempt was made to know from the producers which video program format is easier in production. The producers were asked how important it is to give video program training to the video program presenter. The intent was to find out from producers as to how many professionals are required for video production and what its status in Indian Open Universities is. Discussion was also made on how important video lecture production is for ODL systems. The producers were asked about the future of video production technology. Production technology can either be a Web-based video lecture or TV-based video lecture. In these interviews, the producers were asked about the formats of video production.

The producers were asked which video format is easier as per the production process-video lectures, panel and group discussion video programs. Of the Ten producers of IGNOU and one of the producers of VMOU, almost all of them considered video

lectures easy as per the production process. According to the producers, video lectures are easy to produce. This format does not require a large setup. Mostly, it can be completed with only one presenter-cum-expert including related infrastructure. Producers summarized that in this, the presenter gives lectures on the related subject through PPT. It is based on PPT which leads to the point of discussion. Its duration is limited and the expenditure in this is also low. Almost all the producers considered the video lecture production process to be the cheapest and most accurate for educational programs. Producers also revealed that, in fact, technically speaking, video lecture production is more comfortable.

They summarised that the production of the panel and group discussion is a bit complicated as compared to video lecture production. It usually has two to three other experts along with the presenter. The program is purely based on discussion. In this program, experts discuss the subject-related topic and share their knowledge. A multi-camera setup is required to produce it. The lighting setup is also different as compared to video lecture production. The producers accepted that the duration of this video program is also longer than the video lecture. Shoots can be done outdoors as well as in the studio. The financial cost also increases in this process.

During these interviews with the producers, an attempt was made to know how many professionals are required in an educational video program production. Most video producers agreed that universities must have a video production team. According to them, the educational video production process has been divided into three stages. Work in these three stages requires different professionals without which production is not possible. According to the producers the 3-stages are as follows:

1. Pre-Production 2. Production, 3. Post Production

1. Pre- Production- The producers said that the first stage of video production is pre-production. Under this, it is important to develop the concept of the idea and finalise the treatment. After that, it is also necessary to research the topic decided upon. After this, the script is written based on which a storyboard is prepared for video shooting. The study found that the producer as well as the subject related expert, researcher and scriptwriter are required to complete this pre-production stage.

2. Production- Producers believed that video programs play a very important role in the production stage of the production process. The entire shooting of the video program is done in the production stage which requires at least a cameraman. According to the producers, based on the treatment of the video program, it is decided whether the shooting will be done in a multi-camera setup or a single-camera setup. According to the number of cameras in the multi-camera setup, the cameramen are required. Also, if the shooting is outdoor, the lighting engineer, as well as the lighting assistant, is needed to do the lighting. Most of the producers agreed that during outdoor shooting, a camera assistant is also required. Apart from this, it is also necessary to have a sound engineer during video shooting who manages the recording of sound. The production process requires a minimum of one camera man as well as a camera assistant, a lighting engineer, a sound engineer and a producer.

3. Post-Production- According to the opinion of all the producers, post-production is the most important among the video production stages. No video production can be completed without this process. In this, the video that has been shot is edited by the video editor. All producers involved in this research had the opinion that to compile any video program a minimum of one video editor is required who can edit the video properly. Some producers believed that there should also be a video editor as well as a graphic and animation designer. But some producers had a different opinion.

According to them, the video editor is a professional and he also comes with graphic and animation skills. They talked about the multitasking of the video editor who can also do sound editing. It leads to the conclusion that almost all producers propose a video team for ODL University's video production. According to the producers, to create an educational video program in an Open and Distance University, it is necessary to have a video production team which is as follows:

1. Producer
2. Assistant Producer
3. Scriptwriter
4. Cameramen
5. Camera Assistant
6. Lighting Engineer
7. Lighting Assistant
8. Sound Engineer cum Sound Recordist
9. Video Editor
10. Graphic Designer
11. Broadcast Engineer or IT (New Media) Expert

According to the producers, if a video program is to be broadcast on TV, it will require a broadcast engineer. It will require an IT expert to upload the video program to the New Media platform. During the interview, questions were asked to know what kind of problem producers faced in the presentation and presentation material during the video lecture program production. Most of the producers agreed that the lack of professional presenters during production hinders the creation of a good video program. Producers believed that if the video program is a video lecture, the role of the presenter becomes very important and the presenter is the only live object in the

entire video lecture. Only the subject expert can be the presenter of that video lecture. The producers believed that most presenters cum experts were not camera-friendly and had difficulty in facing the camera during shooting. Although the video lecture is a presenter based program, producers found that presenters had been facing problems related to language and pronunciation. The producers admitted that most of the experts get nervous as soon as they come in front of the camera and are unable to give a presentation properly. Producers said that in most video productions, presentation-related problems are recurrent and it is needed that the presenter must be given short-term training before shooting the video lecture which will build the confidence of the presenter for delivering a good video lecture. Producers felt that the content of the presentation used by the presenter during the video lecture shooting was not well organized. The content in the presentation was overloaded as text, and it contained neither images nor any animation or graphics, which was boring for the presenter as well as the student. Producers suggested that while making a video presentation, it is necessary to state that the content should be written in points and not in sentences. And it should be embedded with related images and graphics.

An attempt was made to know how the problems encountered during educational video program production in the ODL system differed from the problems of normal video program production. Producers described that there is a lot of difference between general video production and creating educational video programs for open and distance universities. There are a lot of limitations in creating an educational video program for Indian Open Universities. Problems could be budget, infrastructure, technical and manpower-related which are rarely seen in general video production.

Budget- The producers said that the essential thing in making an educational video program in open and distance universities is the budget. Universities have a limited budget for making education video programs or it can be said that the educational video programs have to be made using whatever infrastructure is available in the universities. The budget is either very low or not available. Producers said that every university wants to use educational video programs but universities are not able to raise the budget. In general video production, the budget is decided in the beginning and the treatment of video production is based on the same.

Infrastructure- Producers said that creating an educational video program requires related infrastructure that is not currently available in most Indian Open Universities. Some universities have their own studios or hire studios. In general video production, the infrastructure is provided or made available by the producer or the company.

Professionals- Producers believed that professionals are needed to create educational video programs at Indian Open Universities. Universities have little or no professional involvement in video programs, while general video production consists of an entire video production team that performs video production.

Technical Support- Producers observed that all Indian Open Universities wanted to produce educational video programs, but technical support was nil. Due to this, there is a problem in doing an educational video production. While technical support is fully attained in general video production, they also hire technical support from outside to further improve the video program.

During this interview, an attempt was made to know from the producer that according to him which video quality format is currently doing better- High Definition (HD) or Standard Definition (SD). Producers reported that now, High Definition video quality is better than Standard Definition video quality. Currently, almost all video programs

are shot and produced in high definition video quality. According to producers, High Definition video quality is the most in use now.

An attempt was made to know from the producers which platform would be better for the educational video program- the current New Media Based Platform or the Broadcasting Platform. According to the estimates of the producers, in this phase of changing IT, the New Media based platform will outperform. Broadcasting based platforms are now a thing of the past. In this period of mobile and Internet, students are using the New Media platform- they do not have time to sit in front of the TV and wait for the video lectures. The mobile revolution has made everything available on mobile and students can watch video lectures and clear their doubts through YouTube on mobile. Few producers did not believe this to be true; they said that the broadcasting technology is still the reliable and robust medium for educational video programs. But most of the producers believed that the New Media platform is the dominant medium in the times to come. The university should make education video programs available to students through this.

4.4 Objective 4- To Identify Barriers in the Utilization of New Media Based Video Lectures in Indian Open Universities.

Indian Open Universities are adapting to New Media technology for teaching the students. According to the above analysis, video lectures are gaining popularity among students in IOUs. But it is also important to know the barriers in the utilization of New Media based video lectures by students. To identify the obstacles, a questionnaire was created which consisted of nine items. 600 students were selected from three IOUs, Two hundred students from each of these universities. Similarly, 60 Teachers were chosen purposively, 20 teachers from each university were selected.

Ten Video Producers were selected from IGNOU and only One Producer selected from VMOU. UOU does not have its own producer so it was not possible to choose any Producer. Five IT experts were chosen from IGNOU and One IT expert each was selected from VMOU and UOU. Nine items were included in the related questionnaire. All nine items were based on New Media based technology and its utilization.

Item I1-Use of Internet

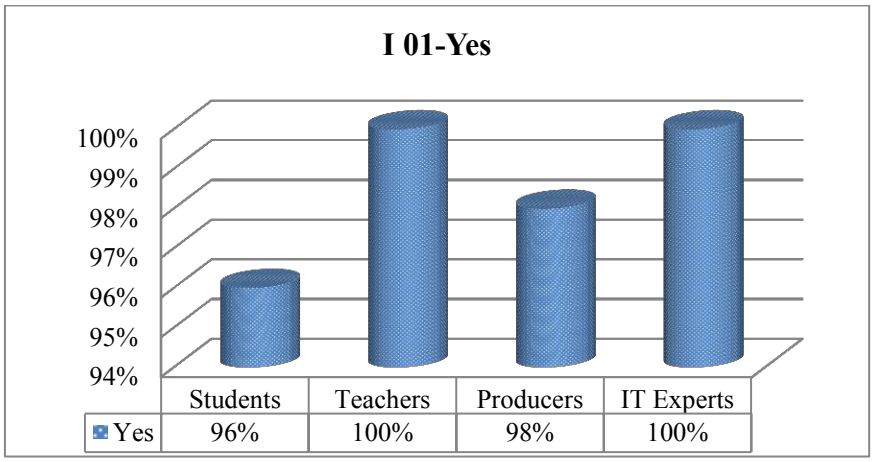


Figure 4.25- Use of the Internet by Stakeholders

Fig. 4.25 shows that 96% of students used the internet and 100% of teachers utilized the internet. 98% of producers admitted that they used the internet. As expected, 100% of IT experts agreed that they used the internet.

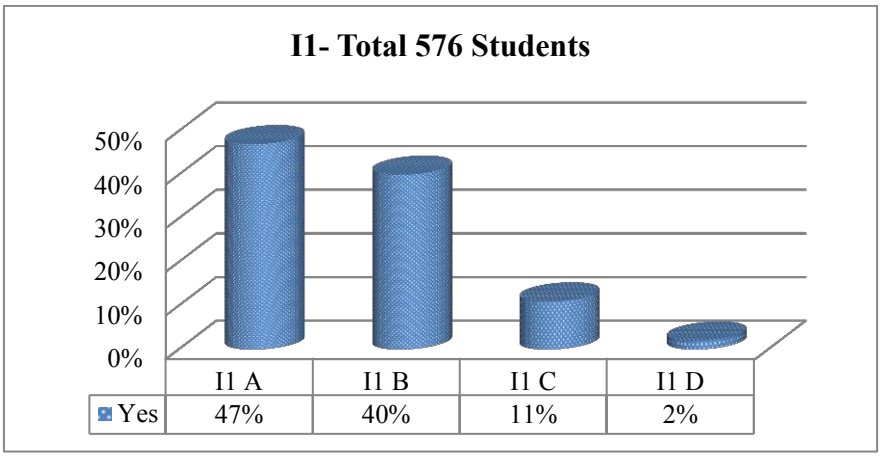


Figure 4.26- Time Spent Per Day on the Internet by Students

The above figure shows the status of the utilisation of internet by the students. 47% of students were using the internet for less than One hour (I1A). 40% of students were using the internet for 1 to 3 hours (I1 B). 11% of students were utilizing the internet for 3 to 6 hours (I1 C). Only 2% of students were using the internet for more than 6 hours (I1 D). The bar chart shows that maximum number of students were using the Internet for a maximum of 1 hours.

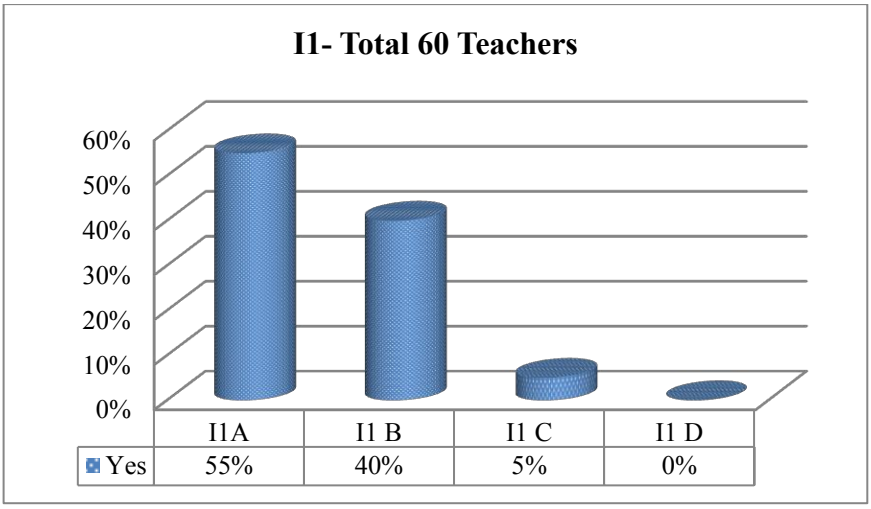


Figure 4.27- Time Spent per Day on the Internet by Teachers

Figure 4.27 shows the status of utilization of internet by the teachers. 55% of teachers were using the internet for less than one hour (I1A). 40% of teachers were using the internet for 1 to 3 hours (I1 B). Only 5% of teachers were utilizing the internet for 3 to 6 hours (I1 C). No teacher was using the internet for more than 6 hours (I1 D). The bar chart shows that more than 50% of teachers were using the Internet for less than 1 hour.

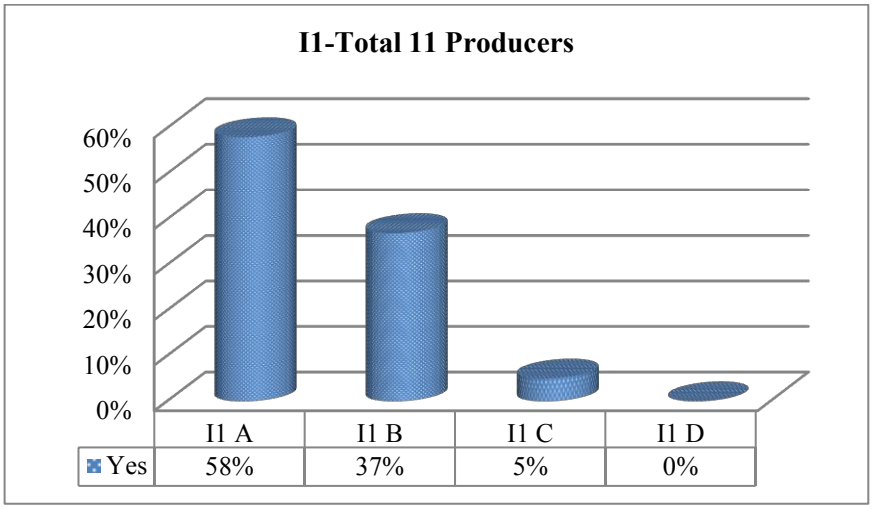


Figure 4.28- Time Spent Per Day on the Internet by Producers

Figure 4.28 shows the status of the utilization of internet by the producers. 58% of producers were using the internet for less than one hour (I1A). 37% of producers were using the internet for 1 to 3 hours (I1 B). Only 5% of producers were utilizing the internet for 3 to 6 hours (I1 C). No producer was spending time on the internet for more than 6 hours (I1 D). The bar chart shows that more than 55% of producers were spending less than 1 hour on the internet.

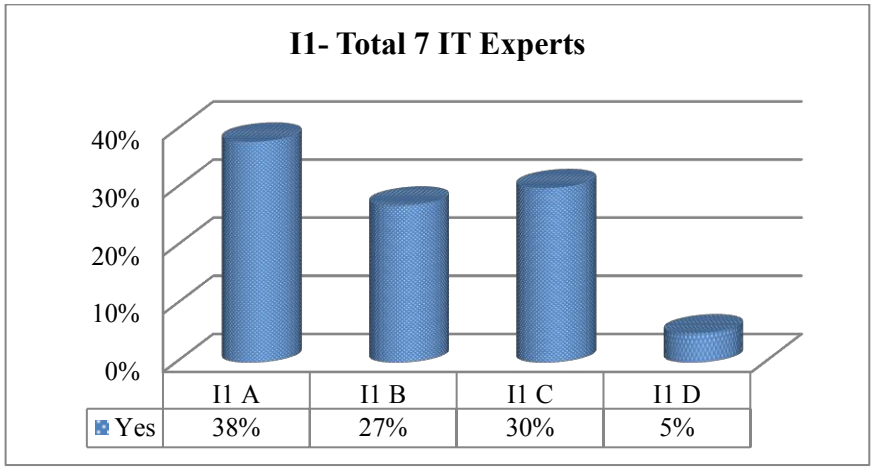


Figure 4.29- Time Spent Per Day on the Internet by IT Experts

Figure 4.29 indicates the status of the utilization of internet by the IT Experts. 38% of IT Experts were using the internet for less than one hour (I1A). 27% of IT Experts were using the internet for 1 to 3 hours (I1 B). 30% of IT Experts were utilizing the

internet for 3 to 6 hours (I1 C). 5% of IT Experts were spending time on the internet for more than 6 hours (I1 D). The bar chart indicates that a significant number of IT Experts were spending one to six hours on the internet.

Item I2-Knowledge about E-learning

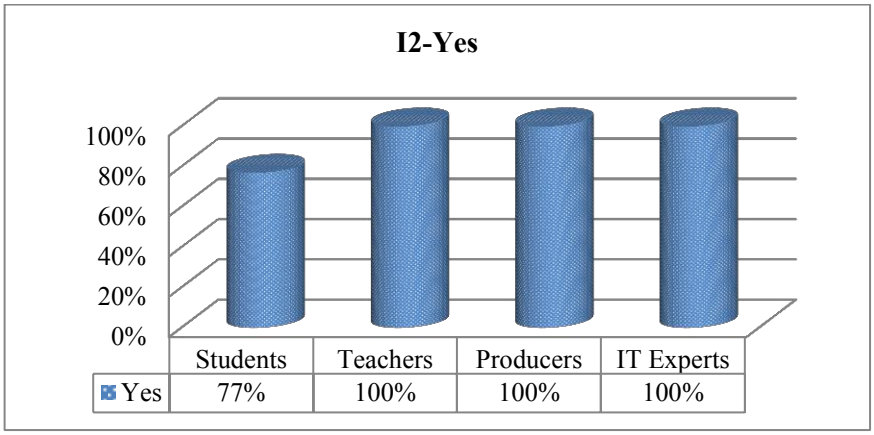


Figure 4.30- Knowledge about E-learning

Figure 4.30 indicates the result of the knowledge of stakeholders about e-learning. 77% of students knew about e-learning. 100% of the teachers and producers had knowledge related to e-learning. All IT experts showed knowledge about e-learning. The result indicates that except for some students, all stakeholders had awareness of e-learning.

Item I3-Internet is Important for E-learning

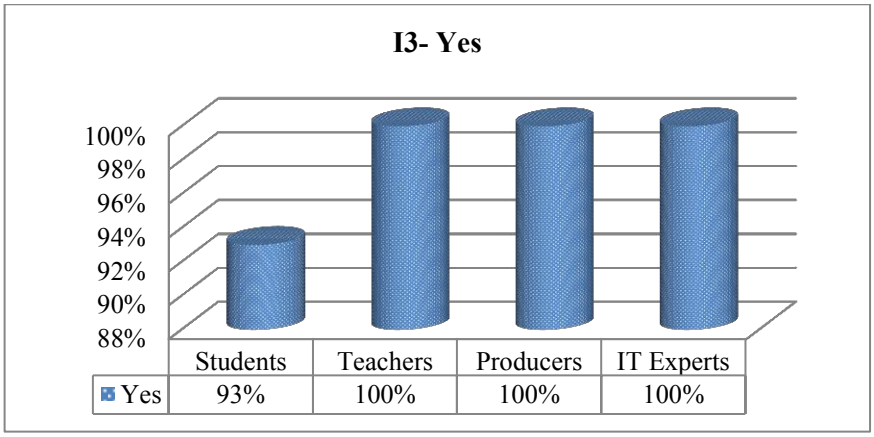


Figure 4.31-Internet is Important for E-learning

Figure 4.31 indicates the opinion of stakeholders about the importance of internet for e-learning. 93% of students agreed that internet is essential for e-learning. All teachers showed knowledge and agreed that internet is important for e-learning. 100% of producers agreed that the internet is vital for e-learning. All IT experts showed knowledge in favour of the importance of internet for e-learning. The result indicates that except for some students, all stakeholders agreed that internet is essential for e-learning. Many devices are being using for internet. It was important to find out about the devices which were being used by the stakeholders to access the internet.

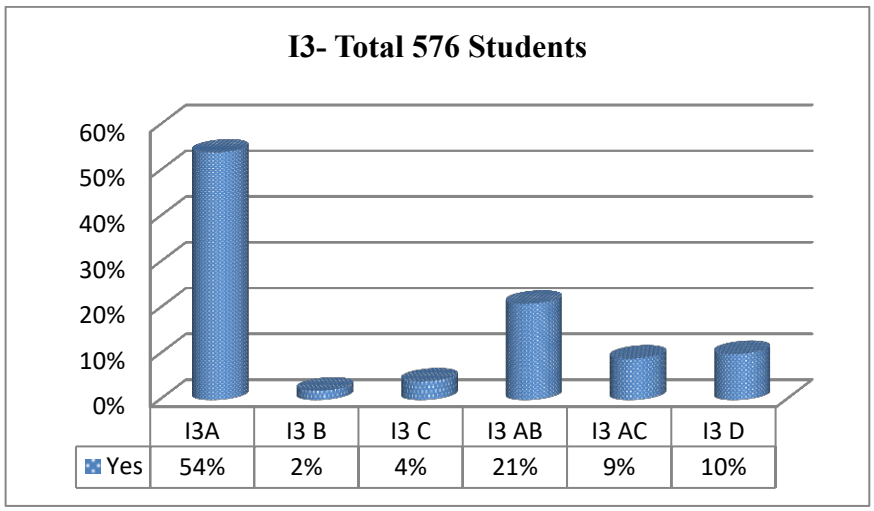


Figure 4.32- Devices Used by Students to Access the Internet

Figure 4.32 shows the result of the devices that were used by stakeholders to access the internet. 54% of students had been using the mobile or tablet device to access the internet (I3 A). Only 2% of students accepted that they use laptop to access the internet (I3 B). 4% of students were using Desktop for running the internet (I3 C). 21% of students were using both Mobile and Laptop devices for using the internet (I3 AB). 9% of students used both Mobile and Desktop (I3 AC). 10% of students used all devices to access the internet (I3 D).

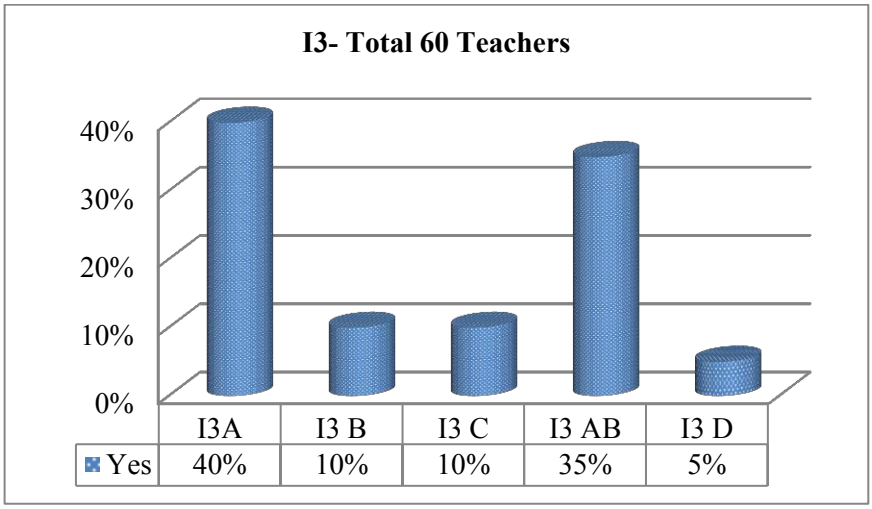


Figure 4.33- Devices Used by Teachers to Access the Internet

Figure 4.33 shows the result of devices that were used by stakeholders to access the internet. 40% of teachers had been using the mobile or tablet device to access the internet (I3 A). 10% of teachers accepted that they use laptop to access the internet (I3 B). 10% of teachers were using Desktop for running the internet (I3 C). 35% of teachers were using both Mobile and Laptop devices for using the internet (I3 AB). 5% of teachers used all devices to access the internet (I3 D).

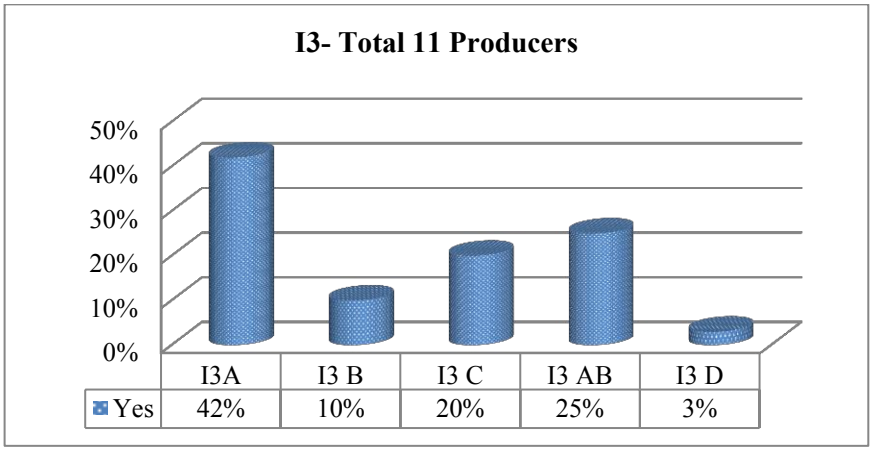


Figure 4.34 Devices Used by Producers to Access the Internet

Figure 4.34 shows the result of devices that were used by stakeholders to access the internet. 42% of producers had been using the mobile or tablet device to access the internet (I3 A). 10% of producers accepted that they use laptop to access the internet

(I3 B). 20% of producers were using Desktop for running the internet (I3 C). 25% of producers were using both Mobile and Laptop devices for using the internet (I3 AB). 3% of producers used all devices to access the internet (I3 D).

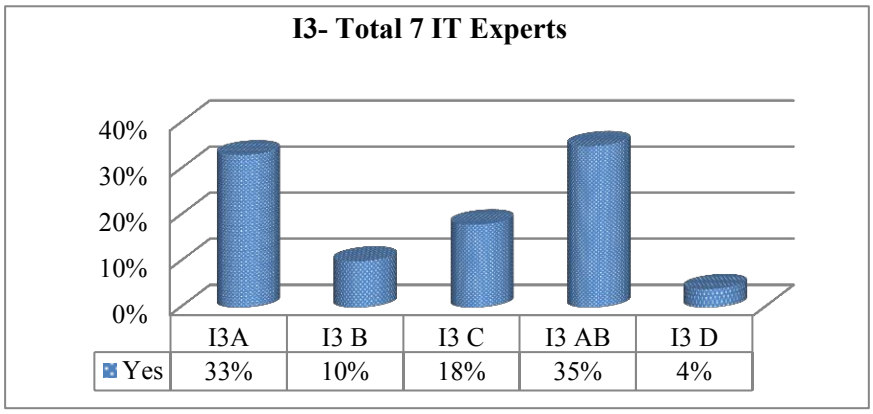


Figure 4.35-Devices Used by IT Experts to Access the Internet

Figure 4.35 shows the result of devices that were used by stakeholders to access the internet. 33% of IT experts had been using the mobile or tablet device to access the internet (I3 A). 10% of IT experts accepted that they the laptop to access the internet (I3 B). 18% of IT experts were using Desktop for running the internet (I3 C). 35% of IT experts were using both Mobile and Laptop devices for using the internet (I3 AB). 4% of IT experts used all devices to access the internet (I3 D).

Item I4- <u>Social Media Awareness</u>

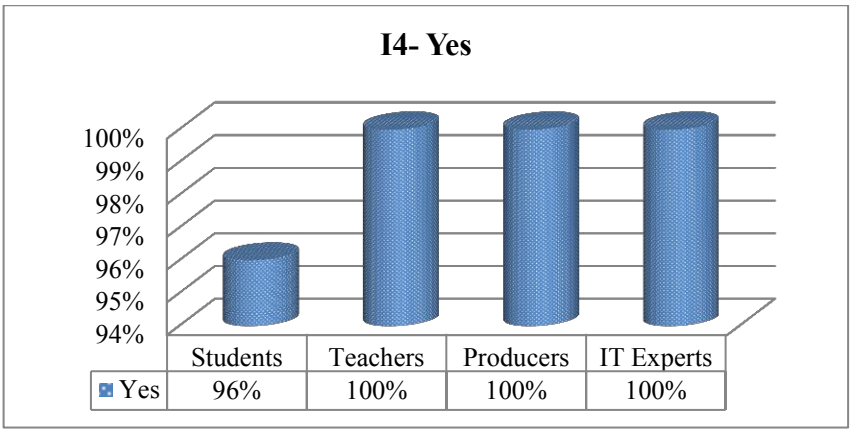


Figure 4.36-Social Media Awareness

Figure 4.36 shows how many Stakeholders know about social media. 96% of students agreed that they know about Social Media. All teachers showed awareness about Social Media. 100% of producers said 'Yes' to having awareness about Social Media. All IT experts showed knowledge in favour of Social Media. The result indicates that except for some students, all stakeholders knew about Social Media.

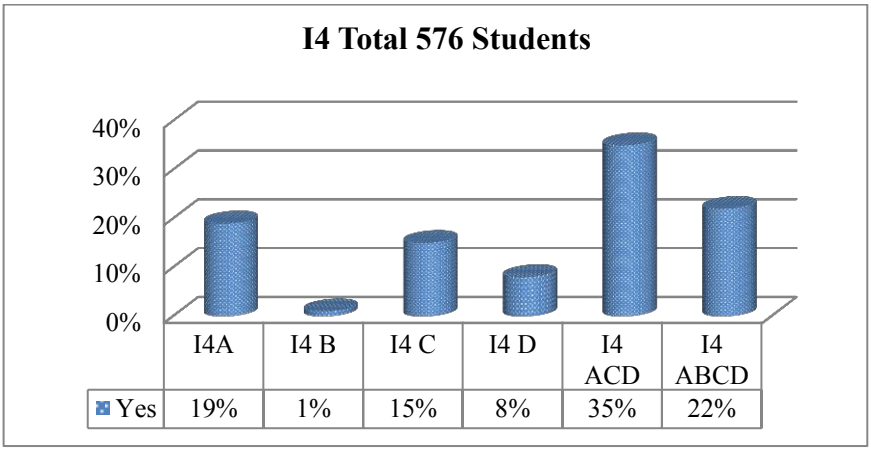


Figure 4.37- Students' Awareness of Social Media

Figure 4.37 shows the result of use of Social Media by students. 19% of students had been using the Facebook Social Media platform (I4 A). Only 1% of students were using Twitter (I4 B). 15% of students agreed to using the YouTube platform (I4 C). 8% of students were using WhatsApp (I4 D). 35% of students said that they were using Facebook, YouTube and WhatsApp (I4ACD). 22% of students were using All Four Social Media Platform viz. Facebook, Twitter, YouTube and WhatsApp (I4ABCD).

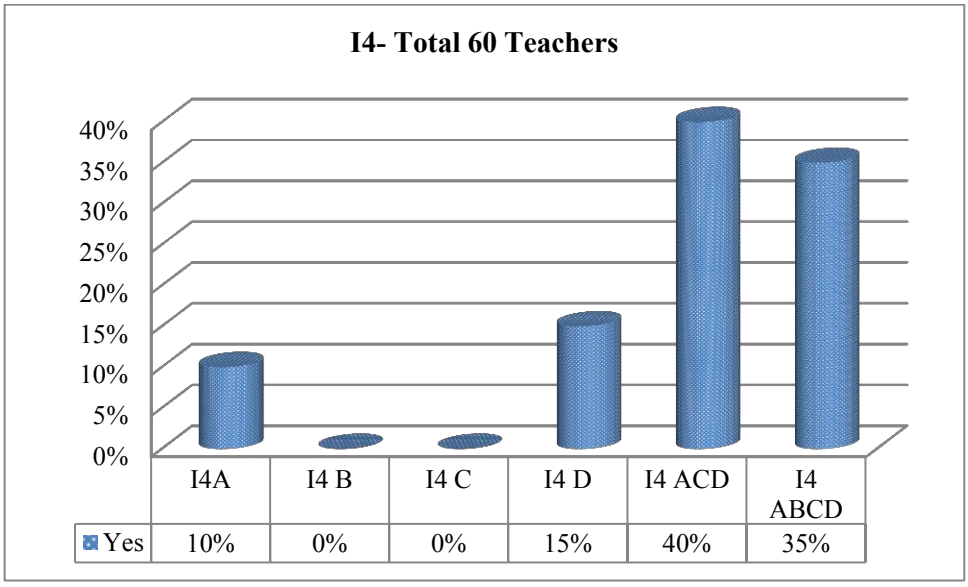


Figure 4.38- Teachers' Awareness of Social Media

Figure 4.38 shows the result of use of Social Media by Teachers. 10% of teachers had been using the Facebook Social Media platform (I4 A). No teacher was using only Twitter (I4 B). All teachers said 'No' for using only the YouTube platform (I4 C). 15% of teachers were using WhatsApp (I4 D). 40% of teachers said that they were using Facebook, YouTube and WhatsApp (I4ACD). 35% of teachers were using all Four Social Media Platform viz. Facebook, Twitter, YouTube and WhatsApp (I4ABCD).

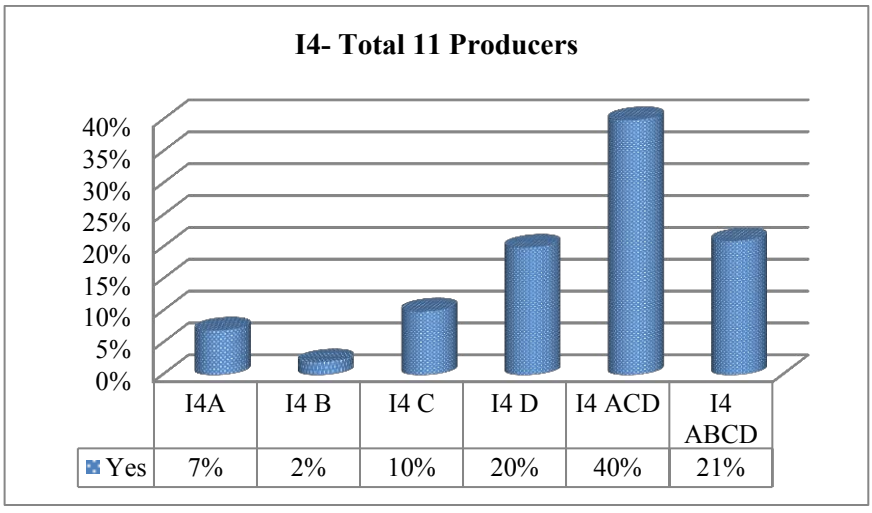


Figure 4.39- Producers' Awareness of Social Media

Figure 4.39 depicts the result of use of Social Media by Producers. 7% of producers had been using only the Facebook Social Media platform (I4 A). 2% of producers were using only Twitter (I4 B). 10% of producers said that they were using only the YouTube platform (I4 C). About 20% of producers were using only WhatsApp (I4 D). 40% of producers said that they had been using Facebook, YouTube and WhatsApp (I4ACD). 21% of producers were using all Four Social Media Platforms viz. Facebook, Twitter, YouTube and WhatsApp (I4ABCD).

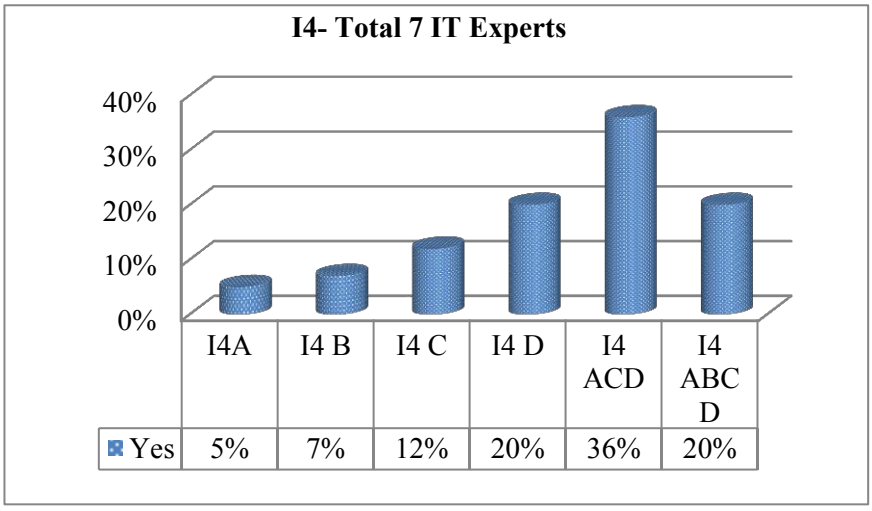


Figure 4.40- IT Experts' Awareness of Social Media

Figure 4.40 depicts the result of use of Social Media by IT experts. 5% of IT experts had been using only the Facebook Social Media platform (I4 A). 7% of IT experts were using only Twitter (I4 B). 12% of experts said that they were using only the YouTube platform (I4 C). 20% of IT experts were using only WhatsApp (I4 D). 36% of IT experts said that they were using Facebook, YouTube and WhatsApp (I4ACD). 20% of IT experts were using All Four Social Media Platform viz. Facebook, Twitter, YouTube and WhatsApp (I4ABCD).

Item I5- Watching YouTube

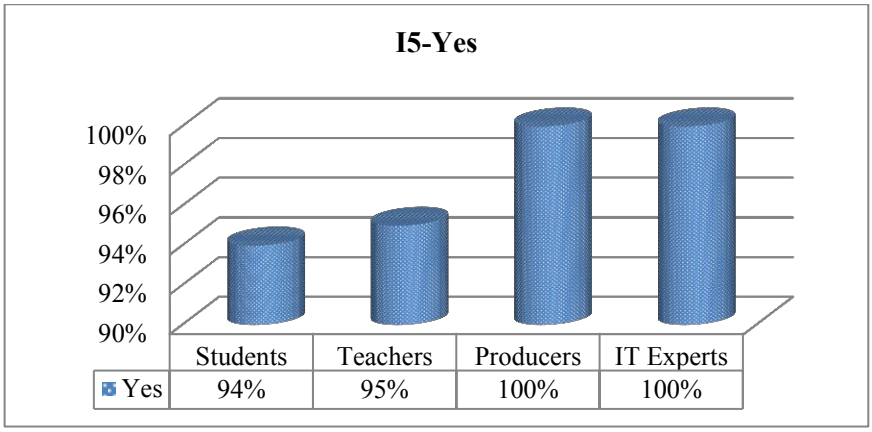


Figure 4.41-Watching YouTube

Figure 4.41 presents the data about the watching of YouTube by stakeholders. 94% of students were using YouTube. 95% of teachers showed their interest in watching YouTube. All producers were using YouTube for different works. All IT Experts were using YouTube.

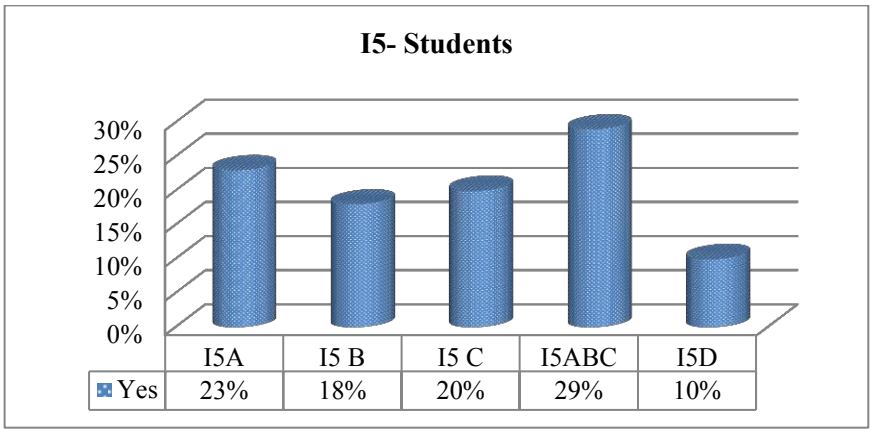


Figure 4.42- Watching the Programmes on YouTube by Students

Figure 4.42 shows the interest of students in different YouTube programs. 23% of students were watching only Educational Video Lectures on YouTube (I5 A). 18% of students liked to watch only Movie Trailers or Songs on YouTube (I5 B). 20% of students were using YouTube for watching only Movies (I5 C). 29% of students showed their interest in Educational Video Lectures, Movie Trailers or Songs and

Movies (I5 ABC). 10% of students were watching Documentaries or Spots or Short Films on YouTube (I5 D).

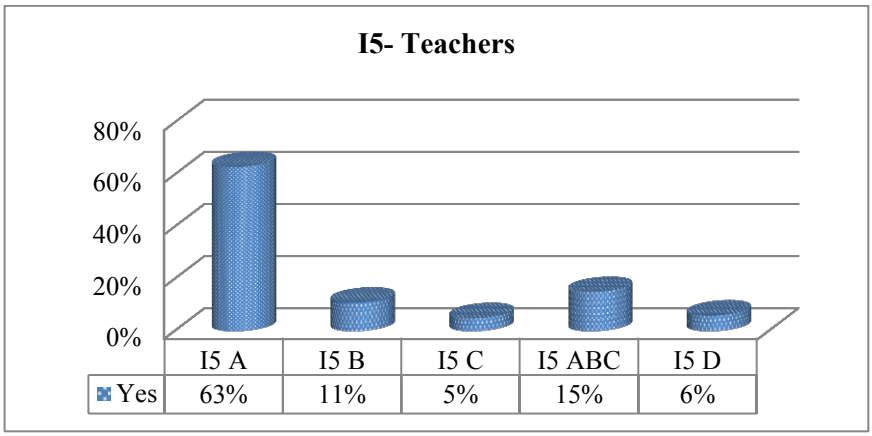


Figure 4.43- Watching the Programmes on YouTube by Teachers

Figure 4.43 indicates the interest of Teachers in different YouTube programs. 63% of teachers were watching only Educational Video Lectures on YouTube (I5 A). 11% of teachers liked to watch only Movie Trailers or Songs on YouTube (I5 B). 5% of teachers were using YouTube only for watching Movies (I5 C). 15% of teachers showed their interest in Educational Video Lectures, Movie Trailers or Songs and Movies (I5 ABC). 6% of teachers were watching Documentaries or Spots or Short Films on YouTube (I5 D).

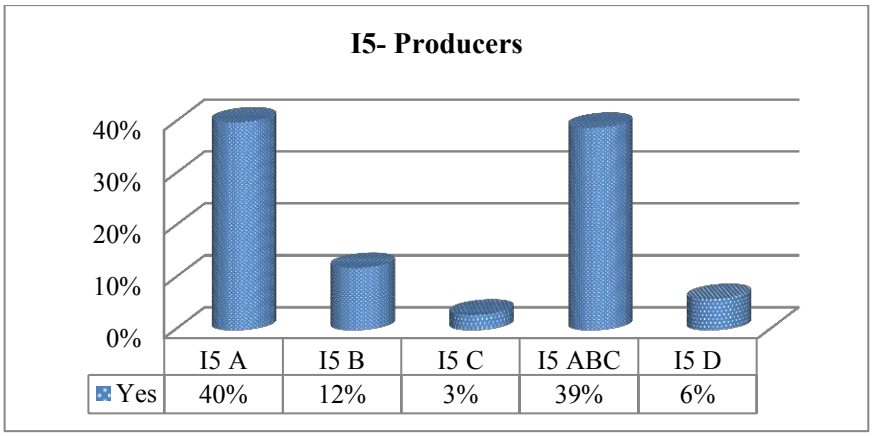


Figure 4.44- Watching the Programmes on YouTube by Producers

Figure 4.44 shows the interest of Producers in different YouTube programs. 40% of producers were watching only Educational Video Lectures on YouTube (I5 A). 12%

of producers liked to watch only Movie Trailers or Songs on YouTube (I5 B). 3% of producers were using YouTube for watching only Movies (I5 C). 39% of producers showed their interest in Educational Video Lectures, Movie Trailers or Songs and Movies (I5 ABC). 6% of producers were watching Documentaries or Sports or Short films on YouTube (I5 D).

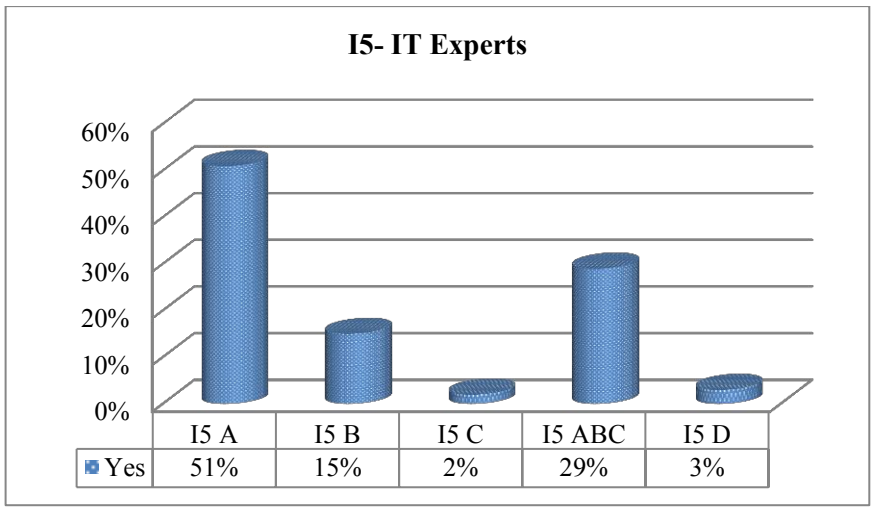


Figure 4.45- Watching the Programmes on YouTube by IT Experts

Figure 4.45 shows the interest of IT experts in different YouTube programs. About 51% of IT experts were watching only Educational Video Lectures on YouTube (I5 A). 15% of them liked YouTube for Movie Trailers or Songs (I5 B) and only 2% of IT experts watch only movies on it (I5 C). Approximately 29% of them showed their interest in Educational Video Lectures, Movie Trailers or Songs and Movies (I5 ABC). About 3% of IT experts used YouTube for Documentaries or Sports or Short films (I5 D).

Item I6- <u>Like to watch Video Lectures on YouTube</u>

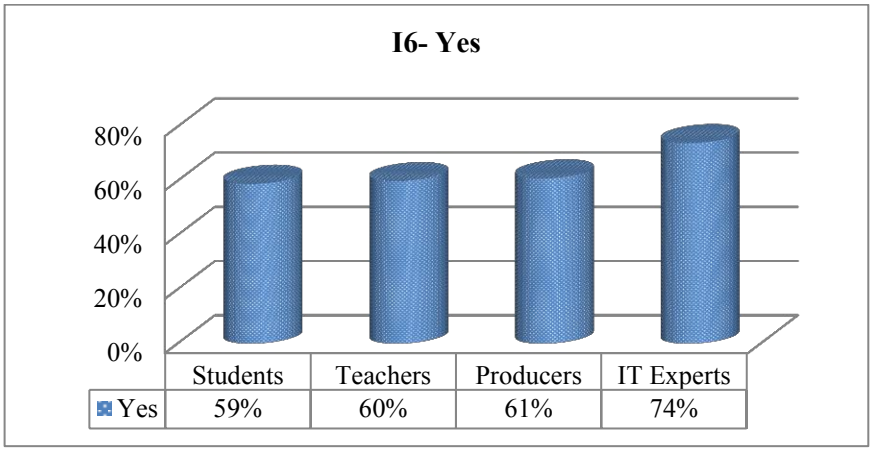


Figure 4.46- Watching video lectures on YouTube by Stakeholders

Figure 4.46 indicates the result of the preference of stakeholders to use YouTube to watch video lectures. 59% of Students liked to watch video lectures on YouTube. 60% of Teachers liked to watch video lectures on YouTube platform. 61% of Producers were using the facility of video lectures on YouTube platform. 74% of IT experts liked YouTube for watching the video lectures.

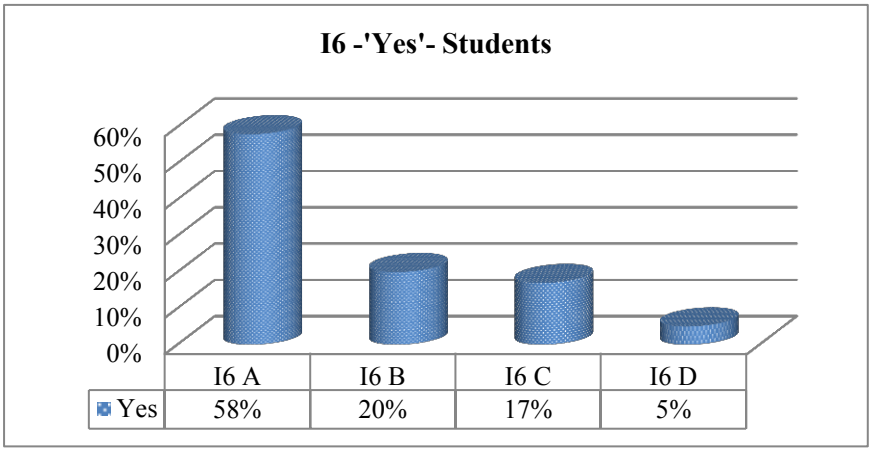


Figure 4.47- Video Lectures Watched on YouTube by Students in a Day

Figure 4.47 shows the findings the number of YouTube-based video lectures, which were used in a day by students. 58% of students watched 1 to 2 YouTube-based video lectures in a day (I6 A). 20% of students liked to watch 2 to 4 video lectures on YouTube in a day (I6 B). 17% of students showed their interest in watching 4 to 6

video lectures on YouTube in a day (I6 C). Only 5% of students were watching more than 6 video lectures in a day on YouTube (I6 D).

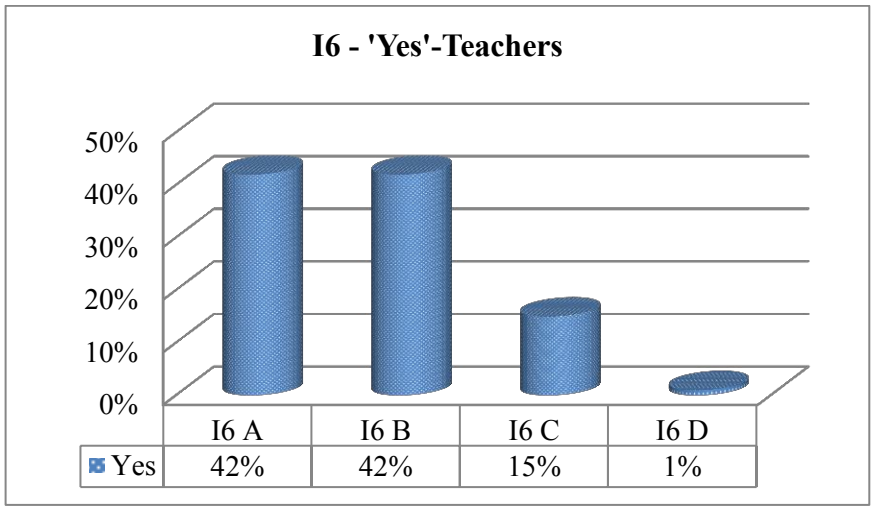


Figure 4.48- Video Lectures Watched on YouTube by Teachers in a Day

Figure 4.48 shows the findings of the number of YouTube based video lectures which were used in a day by Teachers. 42% of teachers watched 1 to 2 YouTube based video lectures in a day (I6 A). 42% of teachers liked to watch 2 to 4 video lectures on YouTube in a day (I6 B). 15% of teachers showed their interest in watching 4 to 6 video lectures on YouTube in a day (I6 C). Only 1% teachers were watching more than 6 video lectures in a day on YouTube (I6 D).

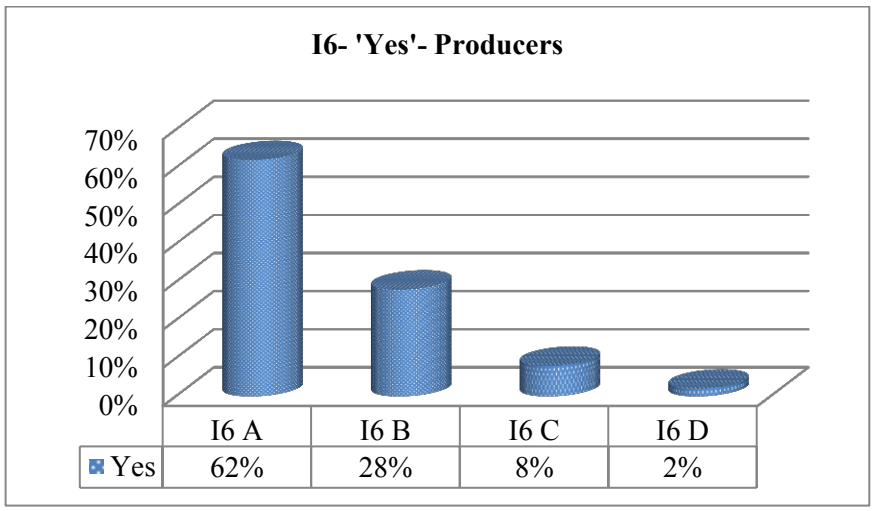


Figure 4.49- Video Lectures Watched on YouTube by Producers in a Day

Figure 4.49 shows the findings of the number of YouTube-based video lectures which were used in a day by Producers. 62% of producers watched 1 to 2 YouTube-based video lectures in a day (I6 A). 28% of producers liked to watch 2 to 4 video lectures in a day (I6 B) and 8% of producers showed their interest in watching 4 to 6 video lectures on YouTube in a day (I6 C). Only 2% of producers were watching more than 6 video lectures in a day on YouTube (I6 D).

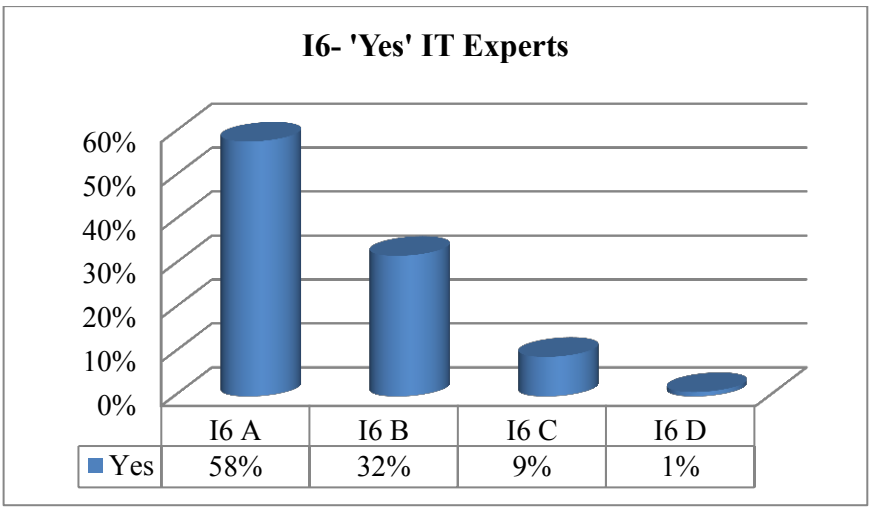


Figure 4.50 Video Lectures Watched on YouTube by IT Experts in a Day

Figure 4.50 shows the findings of the number of YouTube-based video lectures which were used in a day by IT experts. 58% of IT experts watched 1 to 2 YouTube-based video lectures in a day (I6 A). 32% of IT experts liked to watch 2 to 4 video lectures on YouTube in a day (I6 B). 9% of IT experts showed their interest in watching 4 to 6 video lectures on YouTube in a day (I6 C). Only 1% of IT experts were watching more than 6 video lectures in a day on YouTube (I6 D). Stakeholders who did not like to watch video lectures on YouTube were asked the reasons as to why they didn't want to watch the video lectures. They gave their opinion regarding this.

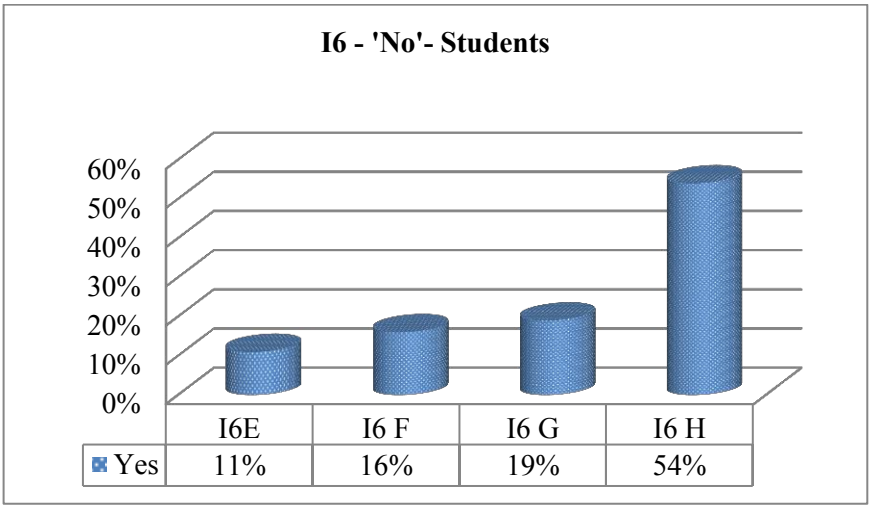


Figure 4.51- Reasons Given by Students for Disliking the Video Lectures

The bar chart (Fig.4.51) indicates the reasons given by Students for disliking the video lectures on YouTube.11% of the students who disliked video lectures said that they were not very interesting (I6 E). 16% of students said that limited internet data did not leave any choice to watch video lectures on YouTube (I6 F). 19% of students said that the long duration of video lectures was one of the reasons for disliking the video lectures (I6 G). 54% of students admitted that all the three reasons were equally responsible for disliking video lectures on YouTube (I6 H).

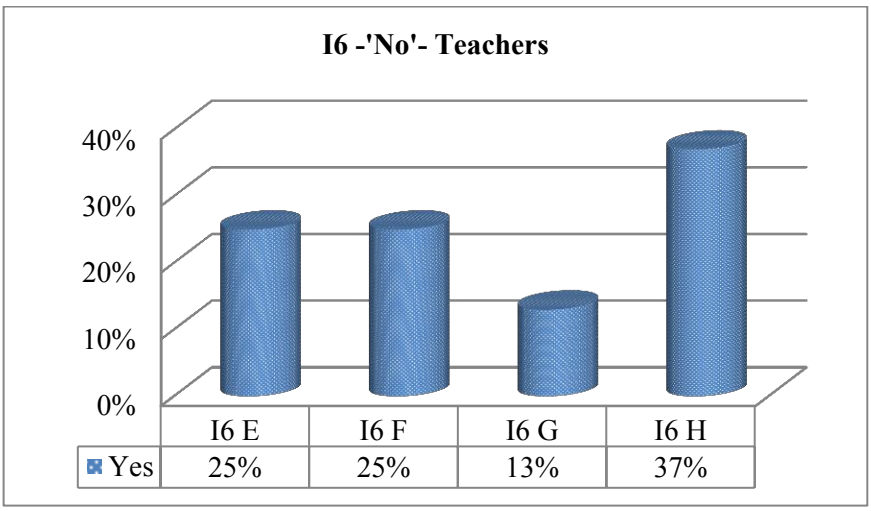


Figure 4.52- Reasons Given by Teachers for Disliking the Video Lectures

The bar chart (Fig.4.52) presents the reasons given by Teachers for disliking the video lectures on YouTube. 25% of the teachers who disliked video lectures said that they were not very interesting (I6 E). 25% of teachers said that limited internet data did not leave any choice to watch video lectures on YouTube (I6 F). 13% of teachers said that the long duration of video lectures was one of the reasons for disliking the video lectures (I6 G). 37% of teachers admitted that all the three reasons were equally responsible for disliking video lectures on YouTube (I6 H).

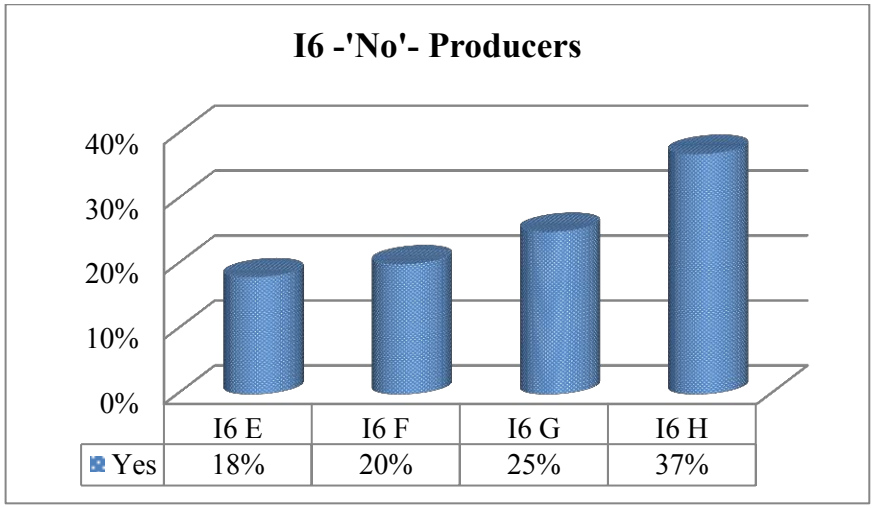


Figure 4.53- Reasons Given by Producers for Disliking the Video Lectures

The bar chart (Fig.4.53) shows the reasons given by Producers for disliking the video lectures on YouTube. 18% of the producers who disliked video lectures said that they were not very interesting (I6 E). 20% of producers said that limited internet data did not leave any choice to watch video lectures on YouTube (I6 F). 25% of producers said that the long duration of video lectures was one of the reasons for disliking the video lectures (I6 G). 37% of producers admitted that all the three reasons were equally responsible for disliking video lectures on YouTube (I6 H).

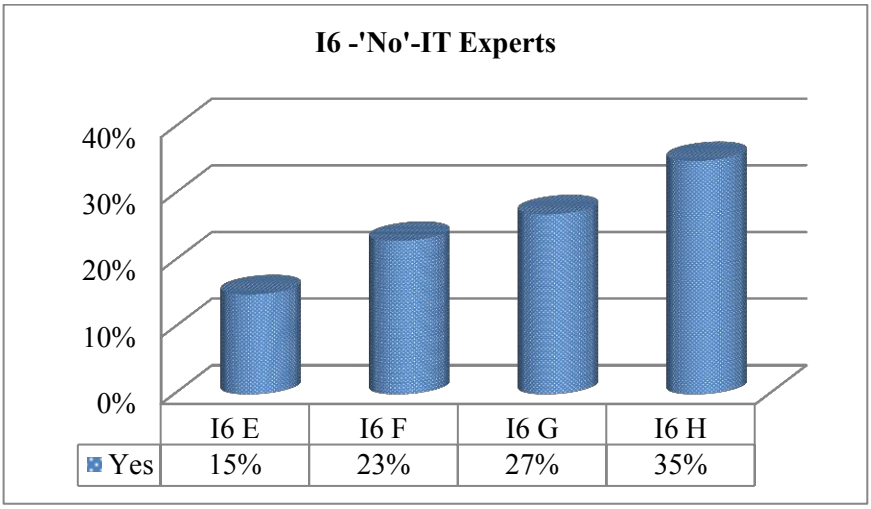


Figure 4.54- Reasons Given by IT Experts for Disliking the Video Lectures

The chart (Fig.4.54) demonstrates the reasons given by the IT Experts for disliking the video lectures on YouTube. 15% of IT experts who disliked video lectures said that they were not very interesting (I6 E). 23% of IT experts said that limited internet data did not leave any choice to watch video lectures on YouTube (I6 F). 27% of IT experts said that the long duration of video lectures was one of the reasons for disliking the video lectures (I6 G). 35% of IT experts admitted that all the three reasons were equally responsible for disliking video lectures on YouTube (I6 H).

Item I7- <u>Knowledge of University Web/ YouTube-based video channel</u>

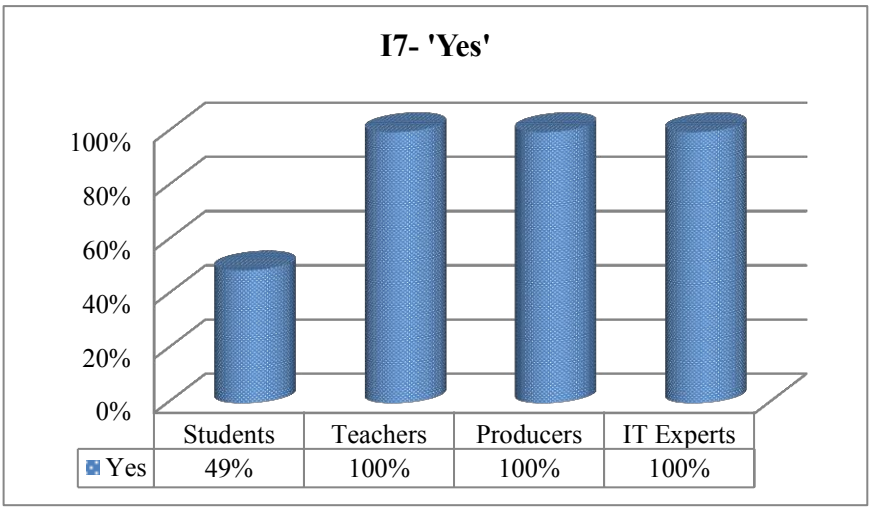


Figure 4.55- Knowledge of University Web/ YouTube-based Video Channel

Figure 4.55 presents the result of the knowledge of the University Web/ YouTube-based video channel. 49% of students were aware of the University web or YouTube-based video channels. All the teachers had knowledge of the University web or YouTube-based video channels. All the producers accepted that they knew of the web or YouTube-based video lectures. All the IT experts showed their understanding of the University web or YouTube-based video lectures.

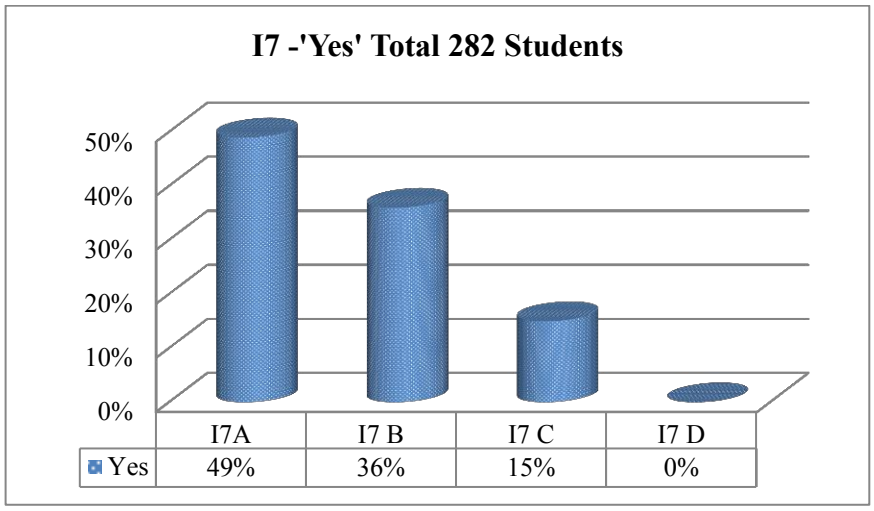


Figure 4.56- Students' Knowledge of University Web/ YouTube-Based Video Channel

Figure 4.56 shows the data about students' knowledge of University Web/ YouTube-based video channel. 49% of students knew about the 'vmouonline' YouTube-based video lecture channel which was run by VMOU, Kota (I7 A). 36% of students gave the verdict in favour of the 'e-gyankosh' YouTube channel run by IGNOU (I7 B). 15% of students showed their knowledge of 'uoulive' YouTube-based channel which is operated by UOU (I7 C). There was no student who knew all three YouTube-based video channels.

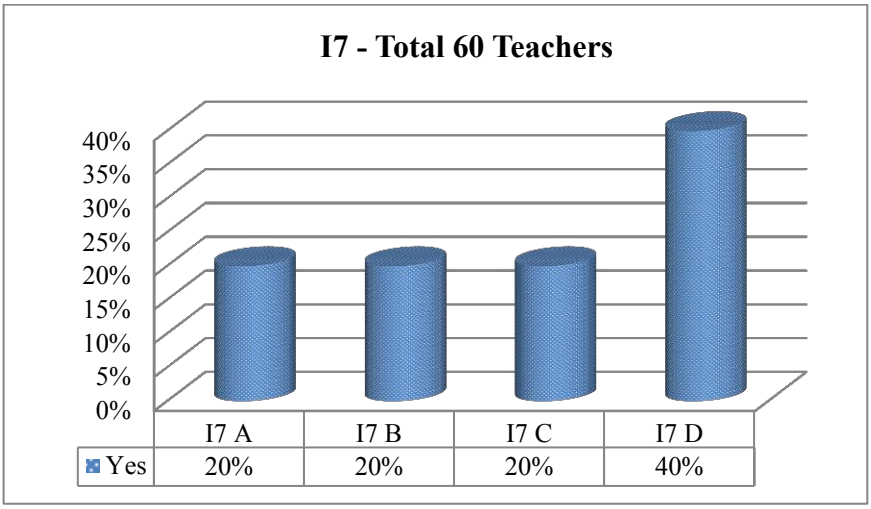


Figure 4.57- Knowledge of University Web/ YouTube-Based Video Channel

Figure 4.57 shows the data about Teachers' knowledge of the University Web/ YouTube-based video channel. 20% of teachers had the knowledge of the 'vmouonline' YouTube-based video lectures channel which was run by VMOU, Kota (I7 A). 20% of teachers gave the verdict in favour of 'e-gyankosh' YouTube channel run by IGNOU (I7 B). 20% of teachers showed their knowledge of 'uoulive' YouTube based channel which is operated by UOU (I7 C). 40% of teachers had knowledge about all three YouTube-based video lectures channels (I7 D).

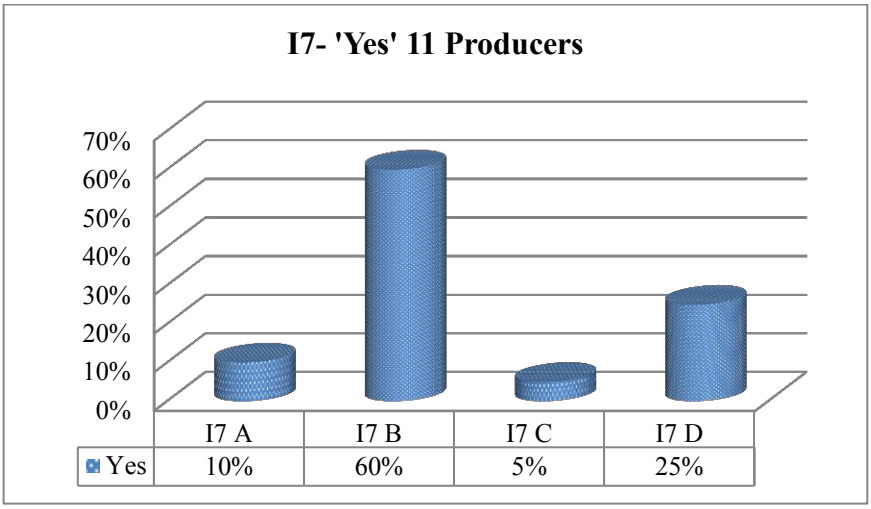


Figure 4.58- Knowledge of University Web/ YouTube-Based Video Channel

Figure 4.58 shows the data about the Producers' knowledge of the University Web or YouTube-based video channel. 10% of producers knew about the 'vmouonline' YouTube-based video lecture channel which is run by VMOU, Kota (I7 A). 60% of producers gave verdict in favour of 'e-gyankosh' YouTube channel run by IGNOU (I7 B). 5% of producers showed their knowledge of 'uoulive' YouTube based channel which is operated by UOU (I7 C). 25% of producers had knowledge about all three YouTube-based video lectures channels (I7 D).

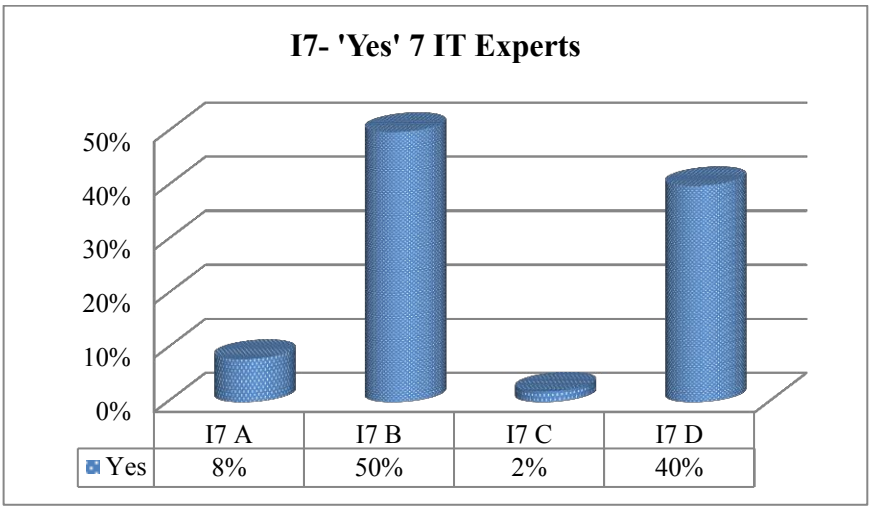


Figure 4.59- Knowledge of University Web/ YouTube-Based Video Channel

Figure 4.59 shows the data about IT experts' knowledge of University Web or YouTube based video channel. 8% of IT experts had knowledge about the 'vmouonline' YouTube based video lectures channel which is run by VMOU, Kota (I7 A). 50% of IT experts gave verdict in favour of 'e-gyankosh' YouTube channel run by IGNOU (I7 B). 2% of IT experts showed knowledge of 'uoulive' YouTube based channel which is operated by UOU (I7 C). 40% of IT experts had knowledge about all three YouTube based video lectures channels (I7 D). Only Students who did not know about the University's Web or YouTube based video channel were asked the reasons why they didn't know about them. They gave their opinion regarding this. Apart from the students, all three stakeholders had knowledge of these channels.

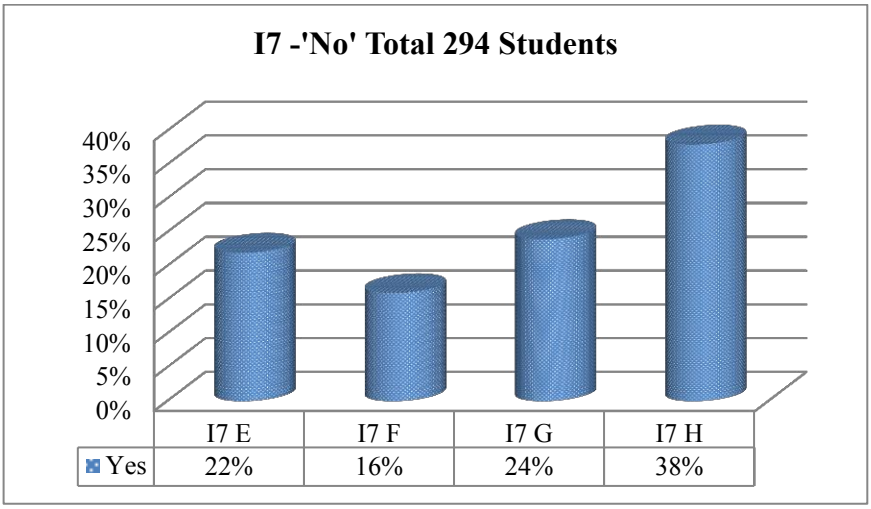


Figure 4.60- Students Who Didn't Know About Web/ YouTube-based Video Channel

Figure 4.60 shows the opinion of students on why they didn't have any knowledge about the universities' Web or YouTube-based video channel. 22% of students blamed lack of awareness for this (I7 E). 16% of students said that they had never heard of these channels (I7 F). 24% of students pointed to the university and said that the university did not even give information about it (I7 G). 38% of students attributed all these three things as the reason for this (I7 H).

Item I8- <u>Awareness about Educational TV Channel</u>

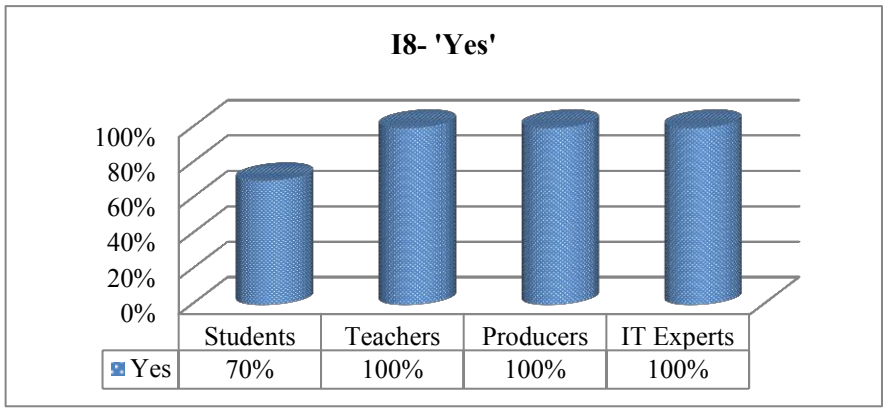


Figure 4.61- Stakeholders' Awareness about Educational TV Channels

The above bar chart (Fig. 4.61) points to the awareness of stakeholders about educational TV channels. 70% of students were aware of educational TV channels. All teachers showed their knowledge about these channels. Interest in these channels was shown by all producers. All IT experts accepted that they knew about educational video channels.

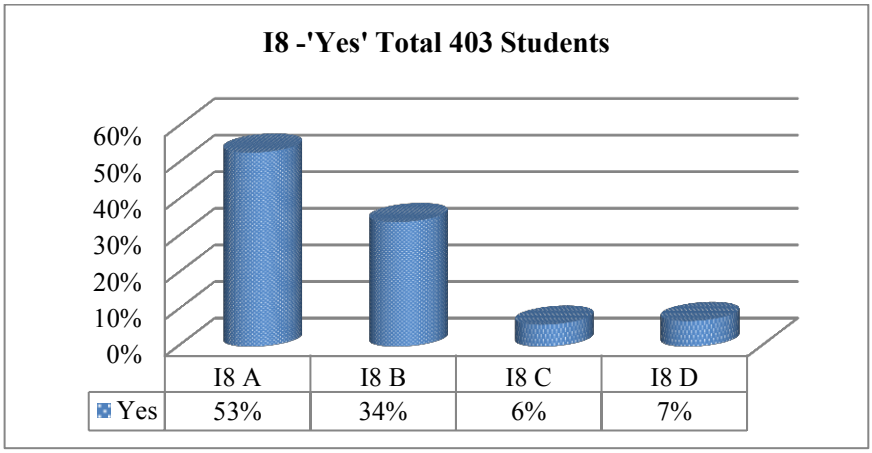


Figure 4.62- Students' Awareness of Educational TV Channels

The above Bar-Chart (Fig. 4.62) shows the result of students' awareness of TV channels. 53% of students had knowledge about 'Doordarshan' which was also used as an educational TV channel (I8 A). 34% of students were aware of 'Gyandarshan' which was run by IGNOU (I8 B). 6% of students had knowledge about 'Vyas TV' which was operated by NCERT (I8 C). 7% of students said that they knew all three educational TV channels (I8 D).

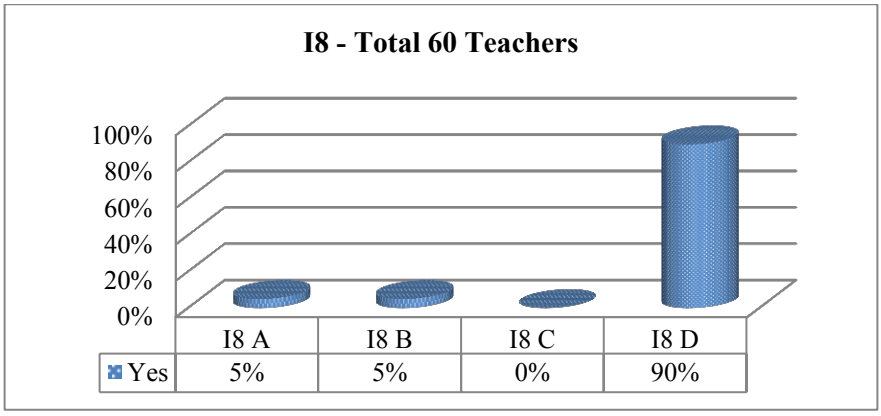


Figure 4.63- Teachers' Awareness of Educational TV Channels

Figure 4.63 reveals the result of teachers' awareness of TV channels. 5% of teachers knew only the Doordarshan which was also used as an educational TV channel (I8 A). 5% of teachers were aware only of 'Gyandarshan' which is run by IGNOU (I8 B). None of the teachers had knowledge only about 'Vyas TV' which was operated by NCERT. 90% of teachers said that yes, they knew about all three educational TV channels.

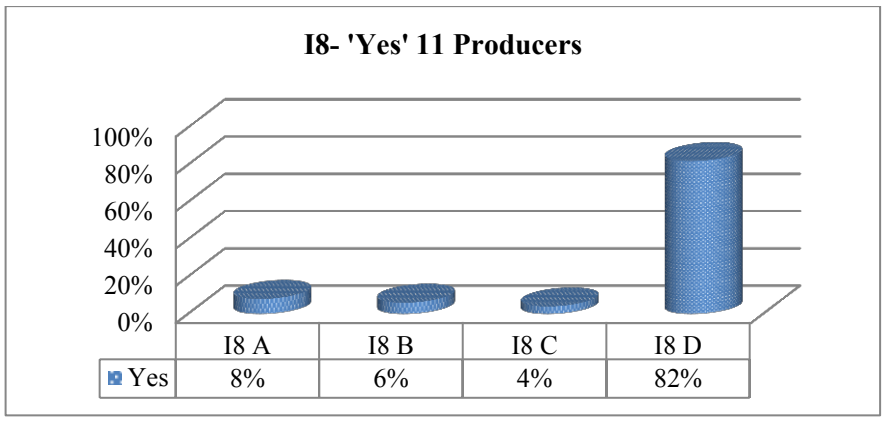


Figure 4.64- Producers' Awareness about Educational TV Channels

The result of the Producers' Awareness of TV channels is depicted in Figure 4.64. 8% of producers had knowledge only about 'Doordarshan' which was also used as an educational TV channel (I8 A). 6% of producers were aware only of 'Gyandarshan' which was run by IGNOU (I8 B). 4% of producers only knew 'Vyas TV' which was operated by NCERT. 82% of producers said that yes, they knew all three educational TV channels.

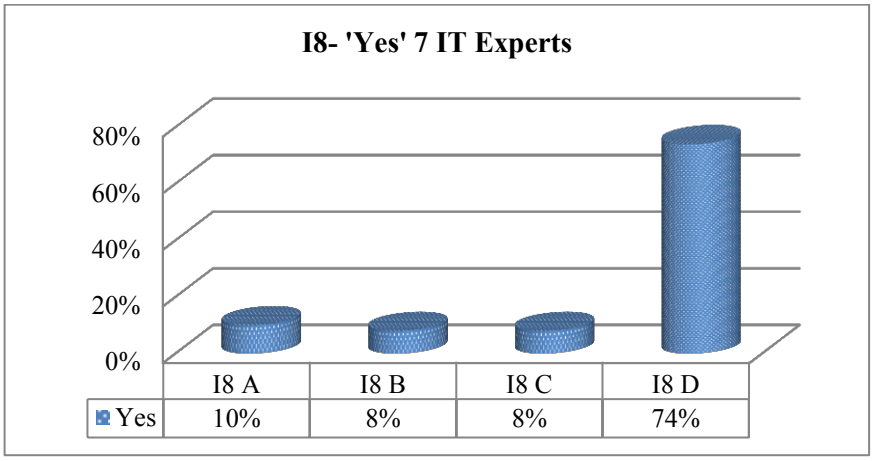


Figure 4.65- IT Experts' Awareness about Educational TV Channels

The result of IT Expert's Awareness of TV channels is mentioned in Figure 4.65. 10% of IT experts had knowledge only about 'Doordarshan' which was also used as an educational TV channel (I8 A). 8% of IT experts were only aware of 'Gyandarshan' which was run by IGNOU (I8 B). 8% of IT experts had knowledge only about 'Vyas TV' which was operated by NCERT. 74% of IT experts said that yes, they knew about all three educational TV channels. Only students who didn't know about any educational TV channel were asked the reasons. They gave their opinion regarding this. Apart from the students, all three stakeholders had knowledge about these channels.

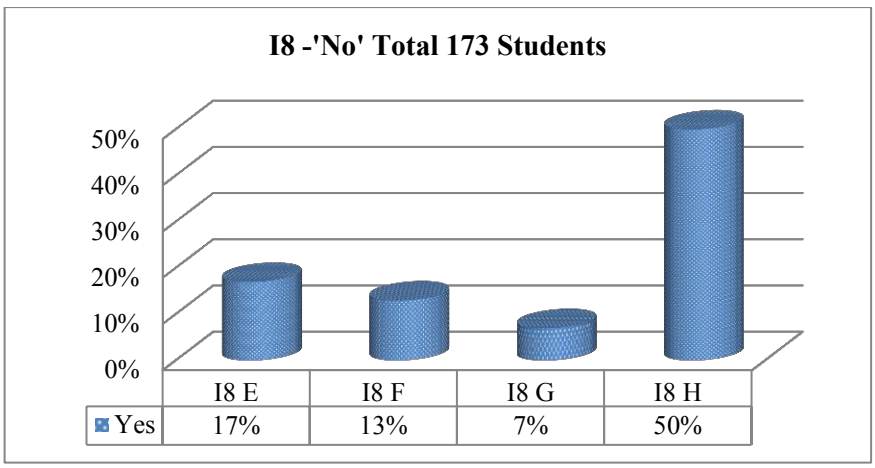


Figure 4.66- Students Who were not Aware of Educational TV Channels

Figure 4.66 shows the opinion of students about why they didn't have any knowledge about Educational TV Channels. 17% of students blamed lack of awareness for this (I8 E). 13% of students said that they had never heard about these channels (I8 F). 7% of students pointed to the university and said that the university had not even informed them about it (I7 G). 50% of students attributed all the three things as the reason for this (I7 H).

Item I9- <u>Like to watch Educational video lectures on TV</u>

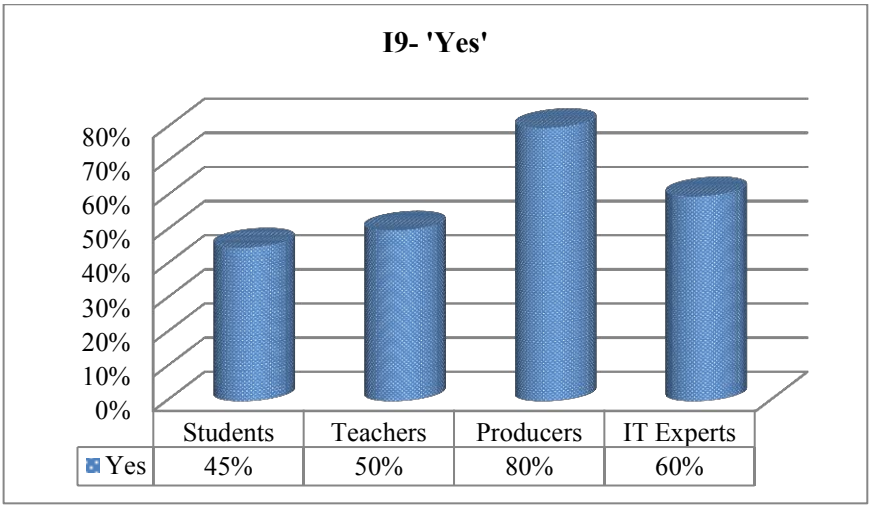


Figure 4.67- Stakeholders Who Liked to Watch Educational VL on TV

Figure 4.67 indicates the result of stakeholders who liked to watch educational video lectures on TV. 45% of students wanted to watch them on TV. 50% of teachers said that they liked to watch educational video lectures on TV. 80% of producers agreed that they tried to watch them on TV. 60% of IT experts liked to watch educational video lectures on TV.

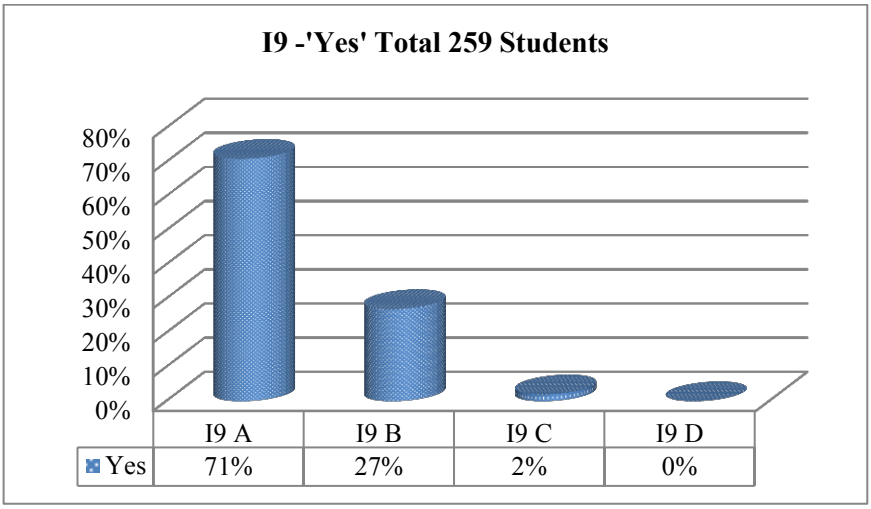


Figure 4.68- Number of VL the Students Like to Watch

Figure 4.68 indicates the result of students who wanted to watch educational video lectures on TV. 71% of students liked to watch less than 2 video lectures on TV in a day (I9 A). 27% of students said that they wanted to watch between 3 to 5 educational video lectures on TV (I9 B). 2% of students agreed that they tried to view between 6 to 7 video lectures on TV (I9 C).

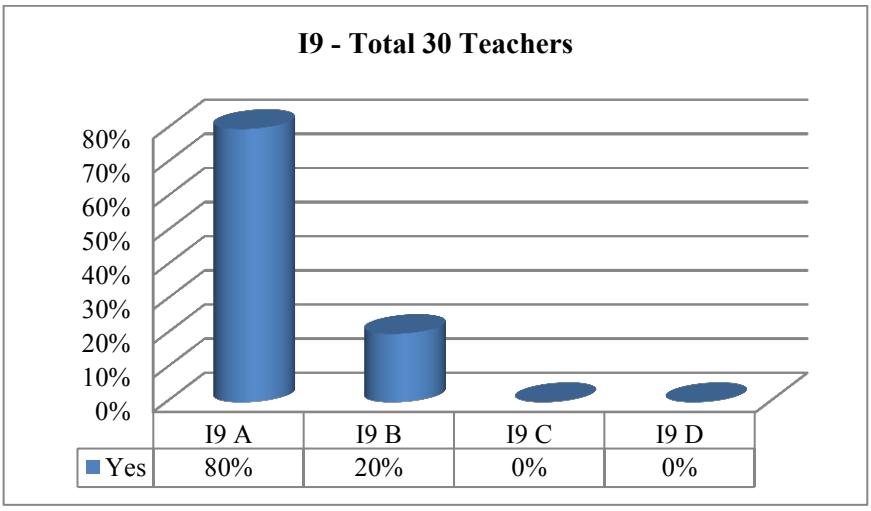


Figure 4.69- Number of VL the Teachers Like to Watch

Figure 4.69 indicates the result of teachers who liked to watch educational video lectures on TV. 80% of teachers liked to watch less than 2 video lectures on TV in a day (I9 A). 20% of teachers said that they liked to watch between 3 to 5 educational video lectures on TV (I9 B).

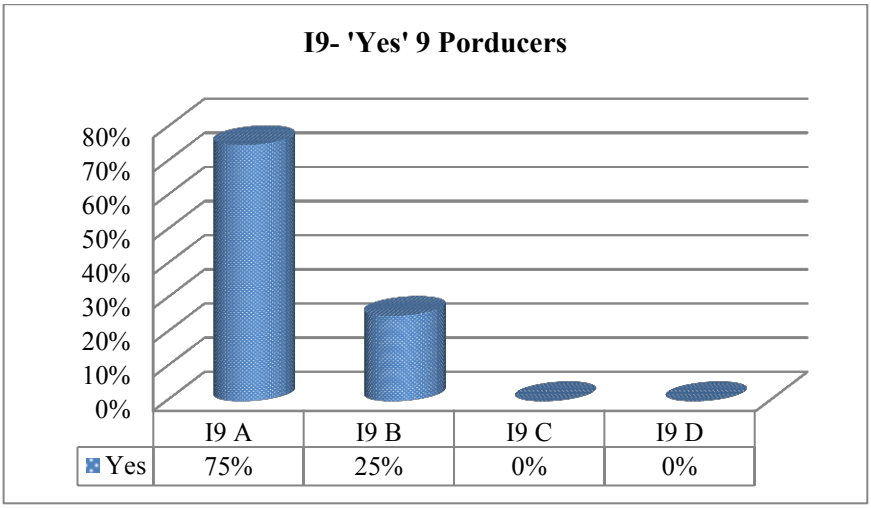


Figure 4.70- Number of VL the Producers Like to Watch

Figure 4.70 indicates the result of producers who liked to watch educational video lectures on TV. 75% of producers liked to watch less than 2 video lectures on TV in a day (I9 A). 25% of producers said that they liked to watch between 3 to 5 educational video lectures on TV (I9 B).

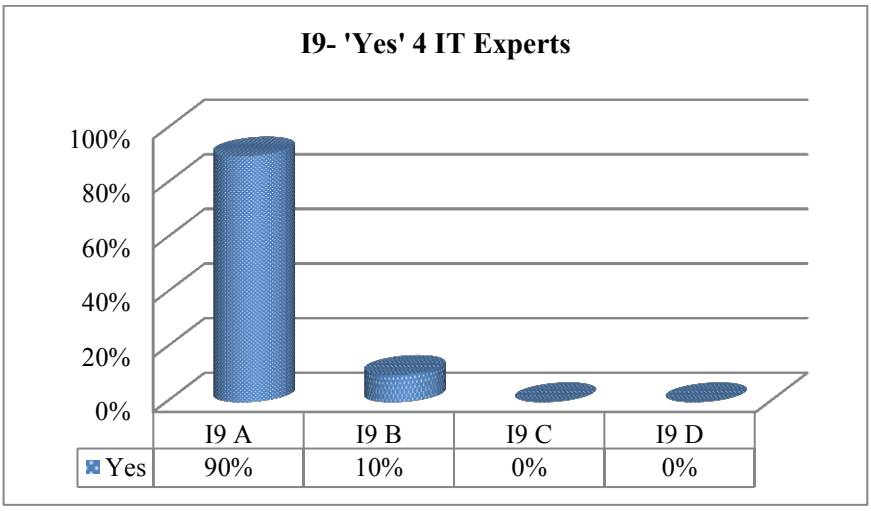


Figure 4.71- Number of VL the IT Experts Like to Watch

Figure 4.71 indicates the result of IT experts who wanted to watch educational video lectures on TV. 90% of IT experts wanted to watch less than 2 video lectures on TV in a day (I9 A). 10% of IT experts said that they wanted to watch between 3 to 5 educational video lectures on TV (I9 B).

The nine items of the questionnaire concluded that 98% of the Open End Distance Education stakeholders (Students, Teachers, Producers and IT Experts) were using Internet as per the responses received from questionnaires. More than 50% of the stakeholders were using the internet for 1 to 3 hours. About 94% of stakeholders knew about e-learning. Most of the stakeholders were using mobile, tablets and laptops to use internet. 98% of stakeholders were aware of social media, including the use of Facebook, YouTube and WhatsApp. In this era of New Media, YouTube has emerged as a useful medium and 97% of the stakeholders were aware of it. Most of the stakeholders said that they used YouTube to watch songs, movie trailers and movies. Only 64% of stakeholders agreed that they liked watching video lectures on YouTube and among that too, most of the stakeholders preferred to attend only one or two video lectures in a day. Stakeholders who did not like to watch video lectures on YouTube tried to find out the reason. More than 50% of the stakeholders gave three primary reasons: video lectures were not very interesting, limited internet data and long duration of video lectures. When stakeholders were asked about university's web or YouTube-based video channels, only 49% of the students said 'Yes'. Almost all the rest of the stakeholders were aware of this. When students were asked the reason, more than 40% of the students replied that they had never heard of those channels, nor were they ever told about it by the university, along with a lack of awareness. When tried to learn about the educational TV channel from the stakeholders, it was found that more than 70% of the students were aware of it. Apart from students, the answer of all the stakeholders was 'Yes'. When the remaining students were asked the reason, more than 50% of the students attributed it to lack of awareness, never having heard from anyone and no information being given about it by the university. Only 58% of the stakeholders agreed that they liked to watch video lectures on TV and more than

75% of the stakeholders were those who preferred to watch only two or fewer video lectures a day. Stakeholders summarized that New Media is being used more and more rapidly. Still, in terms of utilization of video lectures, universities have to increase awareness among students and they have to tell them about the channels of universities.

Interview schedules were also used along with the questionnaire to learn about the constraints faced by video lectures in the ODL system. Questions were asked from the stakeholders (teachers, producers and IT experts) in interviews. In the interview, everyone was asked about the obstacles faced in the utilization of video lectures. Based on the responses received from teachers, producers and IT experts, their conclusions were divided into five parts. Five elements reflect the barriers faced in the utilization of video lectures in ODL systems:

01. Awareness

02. Uninteresting Video Program

03. Quality of Video Program

04. Internet Connectivity; and

05. Time Frame

Awareness- According to the stakeholders, there is a lack of awareness about university video channels among the students. Many students were not aware of what initiatives are being taken by the University for their Studies. Stakeholders agreed that students were not aware of the educational video programs being made by the university. They needed to be told about the related video programs. Stakeholders believed that lack of awareness among students about education video programs was the biggest obstacle in their utilization.

Uninteresting Video Program- Stakeholders agreed that many students do not watch the video lectures despite knowing about them. According to them, the reason for students not using the video lectures might be that the video lectures were not very interesting.

They believed that video lectures with lengthy and over content often start to get boring. It was a prominent reason among the barriers in the usability of video lectures.

Quality of Video Lecture- Stakeholders said that the quality of the video lectures was also an important obstacle in the utilization of video lectures. Video lecture quality meant that whether it was analog or digital. According to the stakeholders, quality is essential in video lectures. If the quality of the video lecture is good, then students will also enjoy watching it and video lectures will also be easy to see and understand.

Internet Connectivity- Stakeholders agreed that internet connectivity was a major barrier in video lecture utilization. They said that video lectures were webcast or watched through YouTube or social media. Students needed internet to see them. The unavailability or low availability of the internet came across as a large barrier. They admitted that although almost every student currently used the Internet, more Internet might be required to watch video lectures.

Time Frame- Stakeholders said that universities that were providing video lectures to the students through TV would also have to take care of the students' time, which was not being done by them. Time also came as a significant barrier for students. Students studying with the ODL system were mostly working or professionals and they lacked time to study. Due to lack of time, they were unable to watch the video lecture on TV, which was a significant barrier in the utilization of video lectures.

4.5 Objective 5- To suggest a model for effective use of New Media based Audio Visual Material in the ODL system.

Based on the findings obtained from the four objectives of this research, a model was constructed. Effective use of audio-video lectures in the ODL system could be done when the audio-video lecture is constructed effectively. The creation of an effective video lecture can be possible only when all the necessary materials are available for its production and also the availability of the expert who produces it is ensured. AV lectures can be used effectively when all stages, from the creation of audio-video lectures to its use, will be effective. Responses from all stakeholders of IOUs were extracted, leading to the conclusion that it was necessary to develop a model of New Media-based video lectures for IOUs and its learners. Model construction was concluded after studying the findings of four objectives. The model was based on the production and utilization of video lectures for the IOUs. While developing the model, all the constraints, which had been explored in the study, were considered. The model is classified into three major parts:

1. Infrastructure
2. Human Resource
3. Video Lecture Pattern

New Media based Video Production and Effective Use of Video Lectures

(Suggestive resources and the model)

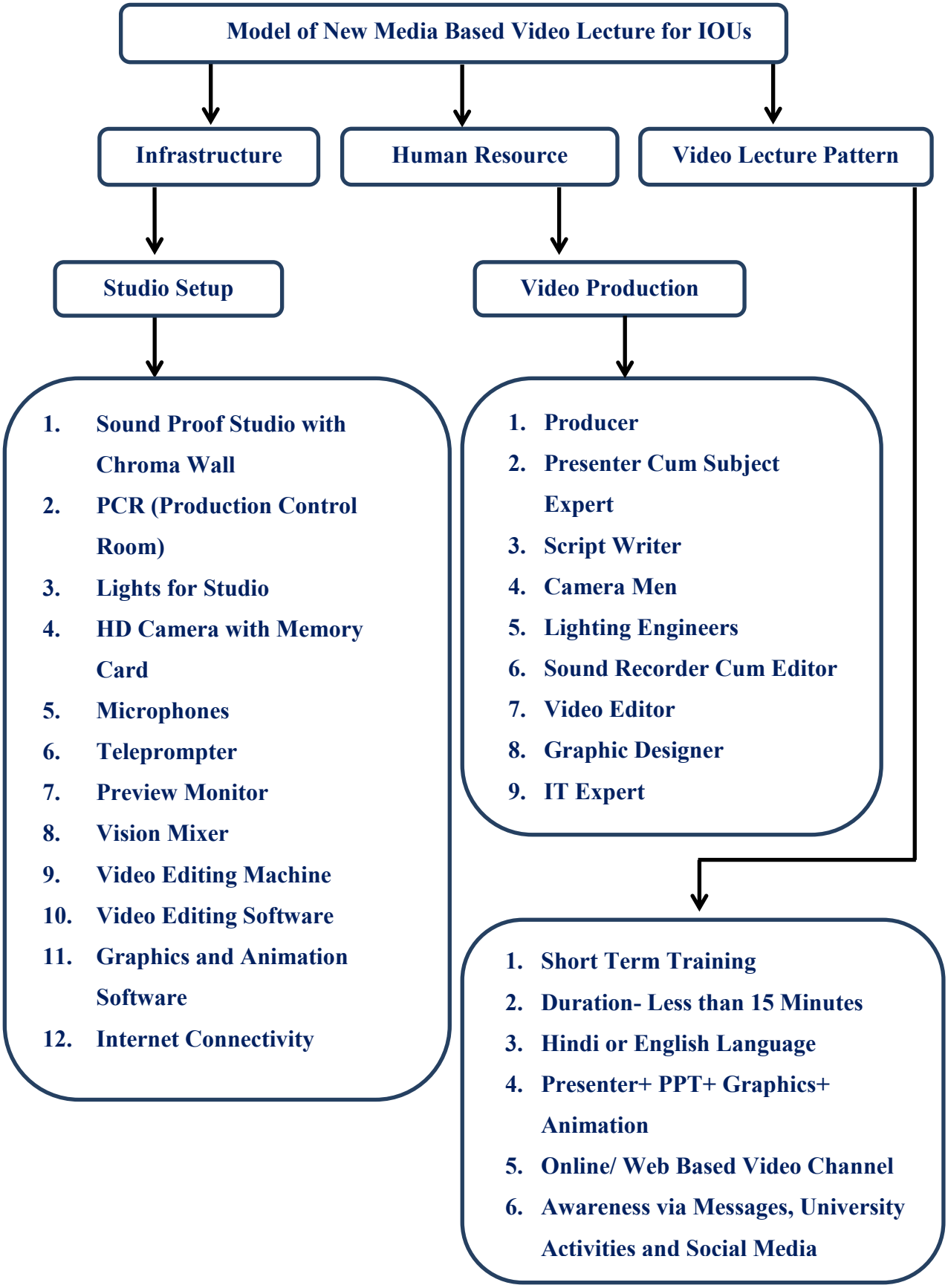


Figure 4.72 Suggestive model- Effective use of New Media Based VL in IOUs

Infrastructure- It is a basic and essential part of any video production. Segment of infrastructure is classified into Studio Setup.

Studio Setup

1. Sound Proof Studio with Chroma Wall
2. Production Control Room (PCR)
3. Lights
4. HD Camera with a Memory Card
5. Microphones
6. Teleprompter
7. Preview Monitor
8. Vision Mixer
9. Video Editing Machine
10. Video Editing Software
11. Graphics and Animation Software
12. Internet Connectivity

Human Resources- It is a main part of this model and it puts the infrastructure into operational mode. Human Resource is classified into Video Production Team.

Video Production Team

1. Producer
2. Presenter Cum Subject Expert
3. Script Writer
4. Camera Men
5. Lighting Engineers
6. Sound Recorder Cum Editor
7. Video Editor
8. Graphic Designer
9. IT Expert

In this research, it has been found that IOUs lack the infrastructure to produce New Media-based video lectures, requiring support for all universities except a few. The study explored that infrastructure is very important for educational video lectures. Focus Group Discussion was conducted with the help of WhatsApp, the tool of New Media. The discussion was focused on all elements of the model. A total of 10 different experts were chosen from different areas of education and New Media. Three experts from education, six from video production and one from the IT area were contained for the discussion. All participants gave their opinion on this model and provided suggestions.

Participant 01

In Focus Group Discussion, the experts gave their views related to this model. Participant 01 opined that the proposed model can be useful for universities and learners and hoped that it would be effective. He talked about the title of the model and suggested some suggestions on it. He asked about infrastructure and believed that studio setup could play the key role in video lecture production. IOUs need to have their studio setup for video lecture production. He said that it is necessary to have a video production team as human resources. Along with this, he also discussed the financial burden for the university and recommended that the university should provide a separate budget for it. While talking about video lecture patterns, he said that the short-term training to stakeholders, especially expert cum presenters, was essential and it should be mentioned in the model. He suggested that all elements should be described in the model. He suggested that focus group-friendly language-based video lectures would be most effective. He believed that text animations, images and graphics animations could enhance the effect of video PPT presentation.

Apart from this, he also commented on the utilization of video lectures. He believed that it was imperative to make the learners of IOUs aware of video lectures.

Participant 02

During the Focus Group Discussion, Participant 2 put forward his enlightening views. According to him, the biggest obstacle in implementing the proposed model will be the budget. Universities should make a budget provision for this. He believed that instead of using expensive technical equipment, the university should go towards cheaper alternatives such as cameras of mobile technology that can be used instead of costly professional cameras. According to him, open-source video editing software can be used instead of expensive editing software. On internet connectivity, he said that the use of YouTube, Facebook and WhatsApp in the new media era had solved the problem of Internet connectivity. According to him, some changes could be done in suggested human resources. Regarding the format of video lectures, he agreed that the duration of video lectures should be less than 15 minutes so that the topic could be covered in detail. He said that video PPT presentations could be made more effective by incorporating good animation and graphics. He suggested that regional language-based video lectures would be most effective. Marketing strategy has to be adopted for increasing awareness of video lectures among learners.

Participant 03

In this Focus Group Discussion, Participant 03 shed his knowledge on this model. He praised the creation of the new model and hoped to use them in future video-related experiments. He highlighted all three main parts of this model and discussed on each of the sub-parts. He said that the studio setup is essential to develop video lectures for learners. He believed that this could not be solved only by setting up a studio. According to this model, professional human resources would be required. The

presenter cum expert should have knowledge of the topic and should have the skill of presenting on camera. Short term training on video presentation and production should be essential for presenter cum expert. He discussed that video lectures should be made in English or Hindi so that people from every field could see it. The approach to the English language is international and Hindi has an Indian approach. Regarding the web-based channel, he believed that in today's era, YouTube is providing a simple and powerful platform for video lectures and it is also seen globally. By creating channels on YouTube, IOUs can provide students with video lectures related to their courses.

Participant 04

According to him, if the IOUs distribute the budget properly, the studio can provide the budget for the setup. Talking about this model, he emphasized on professional studio setup and infrastructure. He said that at present, mobile cameras can be used in place of professional video cameras. Along with quantity, video lectures should be good in quality- only then would they be effective among the learners. Along with the editing software, the hardware of the video editing machine should also be good and be able to run the software smoothly. Describing the requirement of the vision mixer as optional, he said that it is needed more while recording live video lectures or telecasting. Server and storage are very useful for recorded videos and can help in video editing also. The animator can be added to the video lecture team, which can help in enhancing the video lecture presentation. He considered internet connectivity to be essential and said that in the current era of New Media, human dependence on the internet has become very high and no one can deny the contribution of internet in education.

Participant 05

While discussing the proposed model, she said that if the IOUs took action according to the model, then they will have to go through a long process which might take some time, but it would be a good step for the future. She talked about infrastructure and agreed that the setup of the studio is very necessary for video production. She believed that the producer of the proposed video production team could do the scriptwriting himself. While choosing the video editor, it should be made sure that he has the skills of sound editing and graphics designing so that he will be able to perform the same work. The subject expert can help the producer in writing the script. Discussing the video lecture format, she observed that it could be an ideal format for a video lecture. She favoured a web-based channel and suggested that every university should create a YouTube channel and should provide the video lecture on it. Web-based channels have a broad reach in this internet era. Social media has become a very useful medium for communicating with the learners, and so, universities have to create their own pages on the different social media platforms.

Participant 06

During this discussion, Participant 06 gave their views on studio setup which is the primary task of video production after which further process can be started. According to him, along with the mentioned infrastructure, Audio Mixer and Storage will be required to produce the video lecture. His input for the video team was the addition of a Maintenance Engineer who can maintain all the equipment of video production. He advocated about lighting engineers who will help in the setup of the lighting during video lecture shooting. According to him, if the sound engineer is included in the place of scriptwriter, it would be more useful for the video lecture format. He recommended that short-term training could be mandatory for everyone so

that all stakeholders can understand the process of video production. The fiber-based internet connection will be required to provide internet connectivity through which video lectures can be uploaded and reach the learner.

Along with this, he agreed that the duration of a video lecture should be below 15 minutes. Otherwise, it will become boring. Video lectures with less than 15 minutes of duration will technically be of lesser size and will occupy less space in storage. Due to the reduced size, it will be easier to upload on the web channel, and the internet will also comparatively cost less. The use of text messages and social media can make effective impact on learners and can create awareness among them. Awareness can be increased by creating a group on Facebook, Twitter, Instagram, and WhatsApp.

Participant 07

He discussed the proposed model and stated that it can be an ideal model with extensive research into its construction and would be effective for learners. Based on this, a good studio can be set up and good educational video programs can be produced. Chroma background should be considered in studio. Maintenance Engineers should be included in the video production team. Team members must be experienced and knowledgeable to make video lectures useful. The cameraman could also manage sound recording, but a professional video production requires a separate sound recordist. IT expert's role is considered necessary in a studio setup. He believed that IT experts would be needed to create New Media-based and web-based video channels. Apart from this, he advocated for short-term training supporting the video lecture format. Currently, universities can also generate revenue through YouTube channels. He also endorsed the methods to be adopted to increase awareness towards New Media-based channels and advised to make full use of social media.

Participant 08

According to him, studio with Chroma setup plays a vital role in video production. In the present scenario, he accepted that accessible and helpful education could be imparted to students with technical skills. Along with the studio setup, human resource is also considered to be an essential contributor. He recognized the need for an expert video production team and the role of presenter cum expert was deemed to be the most important. Only when the presenter cum expert is able to present the topic well, effective video lectures will be made. The producer can replace the scriptwriter and write the script with the help of a subject expert. Along with this, he agreed on the need for short-term training for the presenter as well as the team. According to the subject, the video lecture's language should be emphasized in Hindi and English language. In this discussion, he felt that YouTube is a good video channel platform for the present. Efforts that can be made to increase awareness towards YouTube-based Video Channel were discussed. Along with the message, the universities should take initiatives and publicize its uses during contact camps, practical camps and exams. Through this, IOUs will be able to provide effective and useful distance education.

Participant 09

While discussing the model, he preferred LED lights as the current technology. According to him, microphones should be of good quality, which can record a good variety of voices. Discussing Human Resource, he said that the producer could do scriptwriting if he wanted. The video editor can also do the job of making graphics, along with video and sound editing, so that the budget can be managed. Short-term training can boost up the performance of the video team and so, it can be considered as an essential part of this model. The duration of the video lecture should be less than

15 minutes so that the learners should not find it annoying. He cited some related research saying that video lectures of lesser duration are more effective and useful. He liked the proposed model and said that it needs to increase awareness among students about learning from video lectures. The awareness can be improved through messages, counselling classes and practical camps organized by the universities.

Participant 10

According to her, web-based channels can gear up the learning process for Open University learners. A professional video lecture with rich learning content can have a vital impact on learners. In the present era of Internet, video lectures of less duration will consume less data in uploading as well as downloading and it takes less storage to save them. So, video lecture duration should be less than 15 minutes. She observed that the language of VL should be Focus Group language, which will connect to learners impressively. She talked about the presentation format, and said that it is essential to take care of the content while making PPT slides in the presentation. The use of graphics and animation, along with the text in PPT, will create an effective video lecture. YouTube channel can improve learning in distance mode of education. Facebook, Twitter, Instagram and WhatsApp are doing good work in communication and with the help of these; Universities can make students aware about learning. All the Ten participants put their views in this Focus Group Discussion. Whatsapp played a good role in this discussion. It provided a hassle-free environment without any bias.

The Data Collection, Data Analysis and Interpretations chapter is the heart of research, which gives the Conclusion as outcome. With the help of this Chapter, Conclusion and Discussion will be finalized.

Chapter 5

Conclusion and Discussion

5.1: Introduction

The purpose of this research was to find out the status, effectiveness and challenges of new media in Indian Open Universities with special reference to video lectures. First, a brief overview of all the previous chapters of this research has been discussed in this chapter. After that, the focus of this chapter has been centred on the conclusion of the research findings. The chapter is focused on the research objectives and the framework of the research methodology is briefly discussed. A review of the data collection, data analysis and results is provided here. The overview of all elements of the research study topic has been presented in Chapter One – "Introduction". The researcher found in Chapter Two (the review of literature) that various studies on Open and Distance Learning have been conducted in India and the rest of the world, but research related to New Media technology in Indian Open Universities are not much in number. Objectives and research questions related to the study were developed in the Chapter .of Methodology.

This research study was conducted with five relative objectives and five research questions.

For this study, the following objectives and research questions were identified:

5.1.1: Objectives of the Study:

16. To find out the status of New Media in Indian open universities.
17. To find out the opinion of stakeholders about the effectiveness of New Media based video lectures.

18. To identify barriers in producing New Media based video lectures in Indian open universities.
19. To identify barriers in the utilization of New Media based video lectures in Indian open universities.
20. To suggest a model for an effective use of New Media based AV Materials in the ODL system.

5.1.2: Research questions:

16. What is the status of New Media in Indian Open Universities?
17. What is the opinion of stakeholders about the effectiveness of New Media based video lectures?
18. What are the barriers in producing New Media based video lectures in Indian open universities?
19. What are the barriers in the utilization of New Media based video lectures in Indian open universities?
20. What could be an effective model for the effective use of New Media based Audio-Visual Material in the ODL system?

In the Chapter of Methodology, a mixed-method sequential explanatory design was adopted for this research. The first objective was focused on finding out the status of media in Indian open universities and for this purpose 14 Indian Open Universities were selected for data collection. The websites of all 14 IOUs were explored for gathering the data. A checklist NMIC (New Media Intervention Checklist) was developed for data collection which consisted of seven different criteria of New Media. The second objective intended to find out the opinion of stakeholders about the effectiveness of New Media based video lectures. Stakeholders of IGNOU,

VMOU and UOU were selected as samples for this objective. A questionnaire was developed for data collection. The items of the questionnaire were based on four domains, which were as follows:

01. Duration of video lectures;

02. Format of video lectures;

03. Language of video lectures; and

04. Mode of Delivery of video lectures

After collecting the data, the data analysis process had been done. The third objective was investigated to identify barriers in producing New Media based video lectures in Indian open universities. Producers of the IGNOU and VMOU were chosen as samples. An interview schedule was structured, which consisted of video production related questions. After conducting the interviews, the analysis was done. The fourth objective was examined to identify barriers in the utilization of New Media based video lectures in Indian open universities. Stakeholders of all three Indian Open Universities were selected as samples. Questionnaire and interview schedules were developed to find out the barriers in the utilization of New Media based video lectures. The fifth objective was followed by using the findings of all four objectives to develop a model on the effective use of New Media based Audio-Visual Material in the ODL system. After the collection of the data, the data analysis process was done. Quantitative data was analyzed through the percentile method and qualitative data was analyzed via focus group discussion.

5.2: Conclusion and Discussion

This chapter gives the conclusion of the research and discusses these findings collected from the field research through questionnaires, interviews, and focus group discussions.

5.2.1: **Status of New Media in Indian Open Universities**

The present research explored the status of New Media in Indian Open Universities and found the forms of new media which were being used by IOUs. The study investigated the status of new media based on their five tools viz. E-SLM, Radio, Web radio, Television, Web-based AV channel, social media and mobile application. New media has developed different learning platforms for learners with various tools that are gaining popularity among the students. E-book or E-SLM is a digitized form of Printed self-instructional material related to the syllabus of different programs. The majority of IOUs provide E-SLM to students via their websites. E-SLM comprises New Media based contents upon which Indian open universities rely to a great extent. The success of the ODL system depends on self-learning materials (SLMs). Maximum numbers (80%) of Indian open universities are providing E-SLM with a particular name like E-Book, E-SLM, etc. Krishna Kanta Handique Open University, Guwahati, provides E-SLM to students by the name of E-BIDA. E-SLM 'Jyotirgamaya' is provided by Dr. Baba Saheb Ambedkar Open University, Ahmedabad. Yashwant Rao Chavan Maharashtra Open University, Nasik, and Karnataka State Open University, Mysore calls their E-SLMs e-books. The study suggested that E-SLM can play a vital role for students of open and distance education because they are away from their institution, teachers, and fellow learners. The way of learning is independent, with maximum self-learning support and minimum external support from instructors and teachers. E-Self-learning materials enable the learner to provide self-instruction, which explains, ask questions, discusses, guides and motivates them. Self-learning materials should be structured well and emphasize pedagogical dialogues with the learner. While reading the program unit's E-SLM, the learners should be made to feel like they have interacted with an invisible

teacher and those they are being taught by him/ her. Questions for self-learning analysis should be incorporated with the E-SLM. Thus, it can increase curiosity in the learners for further topics. The success of self-learning depends on the quality of the ESLMs. E-Self-learning materials should have a learner-centred approach and technically, they should be designed and developed as per the needs of the learner.

New Media is providing the facility to perform the programs of entertainment and education also. Digital Radio is a part of new media that contains the facility of content delivery in audio format. Radio was a powerful medium of communication and it has also become a good entertainer. But the internet has taken over the position of radio. About 33% of Indian open universities are using this medium to instruct the students. The majority of universities are using radio only for counselling purposes. Very few Universities used it to teach the individual. To facilitate the students, some Indian open universities are using only Gyanvani FM and AIR (All India Radio) FM or Community Radio. Although IGNOU has a dedicated radio channel, Gyanvani, for the students of distance education, it does not seem very effective. Krishna Kanta Handique Open University, Guwahati, is running the audio program Ekalvya on AIR (All India Radio).Uttarakhand Open University is running community radio named Hello Haldwani. Community Radio is a good social initiative for information sharing, but it has a very limited range of transmission. It is a self-funded and area-specific radio and its transmission range cannot travel in the long-distant area. So, community radio may not be useful for distance education students. In the present aspects, it seems that very few students are using the radio for study. The less use of the radio by IOUs indicates the same thing. Radio is a popular medium for entertainment but it may not play the same effective role in learning. There can be a few reasons for this as it does not have a multi-organ sense approach and it is only an audio medium for

communication. The beauty of the open and distance learning lies in its flexibility in terms of time, but as the traditional radio system has a fixed time for a particular broadcasting content, which could not be adjusted with the time of learners, it cannot be of much use for them.

New Media has become an integral part of learning. Web radio is a new invention of the digital radio industry. Web Radio/ Internet Radio is an emerging technology that can be used across almost all range of mobile devices, including tablets, laptops and desktop with the help of the internet. It can play a vital role in open distance education learning. It is an app-based technology that can be installed on the mobile, laptop, or any digital device and can be listened to while doing anything. More than 50% of IOUs are using this technology with different names. Yashwant Rao Chavan Maharashtra Open University, Nasik, is using a web radio named Yashvaani. Bhojvaani is a web radio used by Madhya Pradesh Bhoj (Open) University, Bhopal. Dr. Baba Saheb Ambedkar Open University, Ahmedabad, is running a web radio named 'Swadhyay.' Vardhman Mahaveer Open University is also using a web radio for learning purposes. Tamil Nadu Open University, Chennai, is using 'TNOU' web radio. The data was gathered from the content available on university websites and also explored which one is working or not. Students can listen to the lectures according to their convenience and also request for rescheduling of the lecture. But it will not be useful at those places where internet connectivity is poor. It is a cost-effective medium and requires minimum infrastructure. But IOUs have some issues which need to be addressed. Make students aware of, their Web Radio Channels, and communicate with them via messages, emails, and social media platforms so that maximum numbers of students can take advantage of it.

New media has created a horizon for learners with endless possibilities. Television is a part of new media and it gave a boost to the media industry. This technology has been used not only for entertainment and NEWS but also for educational purposes. Many International Open and Distance Universities are using it, but it doesn't seem like that in IOUs. Teaching through Audio Video Broadcasting means teaching students through TV channels. Only 27% of IOUs are using Audio-Video broadcasting technology. Among all IOUs only IGNOU has its own TV channel 'GyanDarshan' and it broadcasts many educational programs through it. Some Indian Open Universities are broadcasting the programs for a particular time through the GyanDarshan and the regional channels of Doordarshan. B.R. Ambedkar Open University, Hyderabad, telecast programs on 'DD Saptgiri' and 'GyanDarshan' with fixed time duration slots from TV channels. Uttarakhand Open University, Haldwani, also broadcasts such video lectures through GyanDarshan. Students can be taught through video lectures, practical session videos, documentaries, short features and docudramas on TV channels. The study observed that, in the era of the internet, the learners are making a distance from TV learning. If IOUs want to teach students through TV, they will require substantial resources, besides ensuring that TV channels reach out to most students. Students will have to increase the awareness of TV channel learning. Learning from Television is a time bounding facility which is not fit for IOU learners.

New Media has developed a path of the internet, which is providing a way of learning in distance mode. Web-based video channels are part of new media technology, which means webcasting of audio-video materials through the internet. YouTube has become a leading new media platform that provides the IOUs a facility to create their web-based video channel. About 74% of Indian Open Universities have shown links

of the web video channels on their websites, but most of these links are not working. A very few video content is available on these channels. Dr. B R Ambedkar Open University, Hyderabad, has created its own YouTube Channel BRAOU, but only one video is uploaded on it. Vardhman Mahaveer Open University, Kota, was working on it seriously and established an online YouTube channel named VMOU and around 400 video lectures have been uploaded yet. Yashwant Rao Chavan Maharashtra Open University, Nasik, has made the YCMOU YouTube channel, but very few audio video study materials have been uploaded on it. Madhya Pradesh Bhoj (Open) University, Bhopal has 'BhojDarshan' web channel, but only a few IGNOU made videos have been uploaded on it. Dr. Baba Saheb Ambedkar Open University, Ahmedabad, has a Swadhyay web-TV and Netaji Subhash Open University, Kolkata, made its own web channel NSOU, but audio video study material are very few in number. Rajarshi Tandon Open University, Allahabad, UP created a web channel 'UPRTOU Allahabad,' but only cultural videos are available on it. Uttarakhand Open University, Haldwani has its web channel 'uouonline' but uploaded video study material is very few. Krishna Kanta Handique Open University, Guwahati using 'KKHSOU' web video channel for providing the AV study material to students. IGNOU has created a web channel 'e-gyankoshignou' but AV study material is minimal. Many IOUs have developed their web-based channels, but these have not been appropriately used for learning purposes. Web Video channels can be created very easily through YouTube without any expense. Apart from this, there are many other options to develop a web-based channel, but it requires more budget than YouTube. Audio-video course material can be delivered to students very easily through the YouTube channel. In the context of Indian Open Universities, the video lecture content should be developed and uploaded on created web-based channels.

Still, it is necessary to create enough audio-video course material for that channel as only then IOUs will be able to connect more students.

New Media provides the facility of social media to people and give freedom to discuss social and educational matters with anyone. Presently, educational information and learning material are being shared with people through social media. IOUs have started using Social Media for establishing communication between University and Students. The use of social media platforms is currently prevalent. Social media is being used everywhere, whether there is a debate about social issues or a chat on entertainment or an education-related discussion. But social media is still not being used effectively in Indian Open Universities. About 64% of IOUs have created social media web pages that help the students to learn and share the information. Vardhman Mahaveer Open University is using almost all the major apps of social media - Facebook, Twitter and Instagram. Yashwant Rao Chavan Maharashtra Open University, Nasik, is using only Facebook. Similarly, some other Indian open universities have Facebook and Twitter icons on their websites, but some social media icons are not in a working condition.

Indian Open Universities should not wait long to use social media as an educational tool. It is being used as a powerful education weapon in the world. Indian Open Universities will also have to keep updating their systems so that they can use the innovations in social media actively. It can be significantly beneficial for the students of Indian Open Universities. In the era of mobile technology, social media is in the palm of students, which they can use any time. Realizing this critical thing, Indian Open Universities have to pay special attention to this. Students should be made aware of the social media pages of IOUs so that they can share information and instructions related to learning material with the students.

In today's time of New media, mobile has become a vital part of garnering. Therefore, mobile can be used to provide quick and interactive education to the students. Approximately 33% of Indian Open Universities have put details and names of mobile apps on their website, out of which only a few are working. The mobile applications are also not being used properly by Indian Open University.

Dr. B R Ambedkar Open University, Hyderabad, has developed ‘i-vidya’ mobile app and mentioned it on their website. Vardhman Mahaveer Open University, Kota, evolved a mobile app ‘vmouonline’. Rajarshi Tandon Open University, Allahabad, is using UPRTOU. Dr. Baba Saheb Ambedkar Open University, Ahmedabad, has created four different mobile applications viz. info@baou, courses@baou, studycentre@baou, iwanttostudy@baou. Krishna Kanta Handique Open University, Guwahati, is running its own mobile app ‘SMARTKKHSOU’ .Only 5 Indian Open Universities have their mobile app, but they are not working efficiently. Indian Open Universities need to understand that students have become mobile friendly and can study better through it. The study suggested that IOUs can provide good course content to students through mobile apps.

5.2.2: The opinion of stakeholders about the effectiveness of New Media based video lectures.

Presently, with the rapid development of tools and techniques of information and communication technologies, new media-based video lectures are gaining popularity among teachers and students. This research investigation was intended to explore the effectiveness of new media-based video lectures in Open and Distance Education system of India. The research was focused on stakeholders' opinions about the effectiveness of video lectures which were watched on New Media Platforms either

during the course of study or otherwise. The research was focused on getting responses about the duration of video lectures, their presentation format, the language used and the mode of video lecture delivery. Data revealed that video lectures of short duration were more popular. Further, the format containing the video Presenter with a PowerPoint presentation, integrated with Animations and Graphics format was more popular among respondents. As far as language was concerned, both English and Hindi were preferred equally by respondents. The mode of delivery of video lectures that was preferred was New Media (web) based online content. Respondents preferred TV broadcasting the least and the above findings indicate that an effective video lecture in the above format was more effective.

The results of the study reveal that more than 90% of the stakeholders agreed that New Media based Video Lectures are easy to access at any time and everywhere and more than 80 % of the stakeholders said that Video lectures are effective for Open Distance Learning.

The research is focused on four domains of New Media based teaching through video lectures, which include the Duration of Video Lecture, Format of Presentation, Language of Video Lecture, and Mode of Delivery of the same. Hence, we will discuss the results obtained in these domains.

Domain 01: Duration of Video Lecture

The result of this domain shows that more than 60 % of stakeholders like to watch video lectures, which are of less than 15-minutes duration and they agreed that the above duration is effective in Open distance education. Some stakeholders also like the video lectures of 15 to 30-minute duration. However, very few stakeholders opined that a more than 30-minute video lecture could be useful for open distance learning. In the study, it is concluded that Video lectures of less than 15 minutes

duration are more effective in Distance Learning Education, as they are easy to understand and help the students to focus on the topic.

On the above mode of delivery through a new media platform, some researches indicate that nowadays, the learner has a shorter span of attention than the previous generations. However, there is little evidence to support this claim. Bligh's 'What's the Use of Lectures?' (1998), McKeachie's 'Teaching Tips' (2002), and Sousa's 'How the Brain Learns' (2006), all suggest that student's span of attention decreases after a short duration and it is seen that they watch the lectures by taking sessions of breaking between the large length of the lectures. So it is observed that the lectures of 10-to-15 minute duration are preferred. Although research on the student shows that their interactions with video lectures are limited and their span of attention while watching online videos may be shorter than the face-to-face classroom lectures (Guo, Rubin, & Kim, 2014). Szpunar, Moulton, & Schacter (2013) found in their study that shorter videos may lower the incidence of the wandering of student's attention while watching the lecture. They observed that students were less attentive during the second half of a large video lecture having a duration of around 55-minute. A dramatic increase in video "dropouts" was observed during the first five minutes of most video lectures produced for Massive Open Online Courses (MOOCs) (J. Kim et al., 2014). A study explored that students' engagement dropped significantly with videos of longer duration having 9 to 12 minutes (Guo et al., 2014). Consequently, edX recommends that video lectures should not exceed six minutes. Shorter videos (less than 15 minutes) have practical benefits. Shorter videos are more comfortable to shoot, record and file size are small. Files of small size are easier to upload and share. Inman & Myers (2018) stated that a 60-minute video is much harder to record than a 10-minute one.

The above considerations will improve the playback and download, and it will also consume fewer internet data of the students, especially of those who view video lectures on mobile devices and download them. There may be an option of a longer duration of lectures in comparison to short duration lectures. If the lecture is longer than it can be divided into shorter duration, which may help the learners in managing their time and internet data. Video lectures of less than 15 minutes duration will provide an opportunity for students to replay the whole video if required. Video Lectures of long-duration may create distractions. This research showed that the major count of learners refused for video lectures of 15 minutes long duration.

Domain 02 Video Lecture Presentation Format-

The result obtained in this domain reflects that more than 70% of the stakeholders like the format of 'Presenter+ PPT+ Animation+ Graphics' based video lectures while less of the respondents agreed with 'Voice Over+ PPT' based and only 'Presenter' based video lecture format. In the present scenario, the researchers concluded that most of the stakeholders liked animations and graphics with a bundle of presenter and PPT based video lectures. They showed their interest in a pack of Presentations consisting of animation, graphics, images, including text. Previous researches also indicated that an overloaded text material Presentation could distract the learner's focus. According to Inman & Myers (2018), visual materials can complement verbal instruction. The challenge is to use visuals strategically without creating excessive distractions. A potential problem in multimedia learning is cognitive overload, which occurs when "the processing demands evoked by the learning task may exceed the processing capacity of the cognitive system" (Mayer & Moreno, 2003). However, it can be reduced over containing load by reducing on-screen text, removing all extraneous content, and including only keywords or images that reinforce the lecture content.

This research also advised not to read on-screen text word-for-word. Additionally, cognitive load is reduced when the presentation provides cues to the learners that introduce the content and explain the organization of the material- a technique called signalling (Mayer & Moreno, 2003).

Adhering to basic principles of graphic design and visual literacy can help develop an effective video lecture. There are some indications that the visual design of multimedia learning materials directly impacts student learning (Kumi, Conway, Limayem, & Goyal, 2013; Plass, Heidig, Hayward, Homer, & Um, 2014).Any PPT or slide presentation created for a video lecture should incorporate graphics and animations as well. In the PPT or slide presentation, the background and font colour should have high-value contrast, which increases readability. A solid colour or a white background is created to a presentation pattern with larger font sizes, as are a vital feature. Whereas no font smaller than 28 points is recommended for a face-to-face classroom, even larger font sizes are recommended for videos that will be viewed on a mobile device (Schwabish, 2016).Overall, the right selection of fonts, colors, related images, graphics and animation with presenters create a professional, credible, and readable video lecture. Although some researches indicate that students prefer video lectures that include their teachers' faces (Kizilcec, Papadopoulos, & Sritanyaratana, 2014), there is no empirical evidence that it directly impacts their learning. However, it depends on the content of the video lecture- a presenter's face may be less important. But some researches suggested that high emotional content or requiring minimal visual aids and the presence of the instructor might enhance the presentation. This research found the majority of learners in favour of format of 'Presenter with PPT integrated with Animation & Graphics' based video lectures.

<u>Domain 03</u>: Language of Video Lectures-

The participants are found to be more positive with the English and Hindi language-based video lectures. As far as language was concerned, both English and Hindi were preferred equally by respondents. Stakeholders (Learners) gave their positive verdict equally in favour of both English and Hindi language-based video lectures. The learners did not take much interest in regional language and bilingual (Hindi and English mixed) language-based video lectures. They agreed that either Hindi or English language-based video lectures could also be effective for distance education-based learning. This research found that video lectures were most preferred in English and Hindi. Stakeholders also advocated video lectures in the regional language. Still, most of the stakeholders believed that video lectures should be made in Hindi or English only so that it remains uniform.

Along with this, the approach to video lectures will remain national as well as international. Hindi and English video lectures will benefit learners across India, even where the use of the Hindi language is less in use. The regional language video lecture approach will be limited and learners will also be limited. Language is essential for an effective video lecture. Language should be such that maximum learners can understand. Based on the results obtained from this research, video lectures in both English and Hindi languages were equally useful for learners of Indian Open Universities. If it talks about the global level, then the acceptance of the English language is more and if it talks about India, then the recognition of English is equal to Hindi language in higher education. Talking about today's Indian perspective, one who does not understand Hindi can understand English. The local language is also spoken, but while making video lectures, care should also be taken that the video lecture can be understood by more and more learners, which is possible only when it

is made in English and Hindi languages. Bilingual language is widely spoken in some places, especially in developing towns, which is not acceptable. Based on the conclusions drawn from this research, it can be said that if the video lecture is to be presented based on Indian learners, then it should be made either in the English language or in the Hindi language. English language video lectures will remain effective for video lectures of global learners.

<u>Domain 04</u> Mode of Delivery of Video Lectures-

The significant difference between the newer digital learning platform (i.e., New Media based) and the traditional video learning platform (i.e., TV Broadcasting) is learners' involvement. Nowadays, the learners have shifted to New Media based Platform, and the results of the study also show the same thing. Maximum learners opined that the 'Online and Web-based Video Lectures Delivery Mode' is more effective in the open distance education. Mobile-based technology is flying on a technological cloud; it has a new chapter with new add- on services per day. Some learners also wanted to use a mobile app-based platform for video lectures. Now the learners have moved from TV broadcasting based learning platforms to New Media platform. Very few learners wanted to learn from TV broadcasting.

Presently, the traditional education system is shifting to online education. The growing influence of the new media has also dragged the learners into their arms. Based on the data obtained from this, it is concluded that online web or YouTube-based video lectures are becoming more popular. Learners of Indian Open Universities preferred the online mode for the delivery of video lectures. Television broadcasting was also the medium of study. But the speed with which more and more learners are adopting online media is considerable.

YouTube and web-based online platforms have become the most accessible medium for video lectures. TV broadcasting was a popular medium for learning, but the sentiment could not become popular. Students need to dedicate time to watch the TV for learning because the TV program has a specific schedule and after that, it is not possible to watch it again. But this is not the case with online YouTube web-based learning, and learners can also download the video lecture whenever they want. There is no time constraint in this. Some learners had shown their learning interest via specific Mobile App, but the demand of online YouTube and Web Best Video Lecture learning is more.

The study concluded that the web/YouTube-based medium had become a powerful medium to deliver VL to the learners. So video lectures can provide the lessons through a web/ YouTube based platform. The era of TV broadcasting has become outdated now, and learners do not have time to sit near the TV, especially learners of open and distance education. Learners can get video lectures online through mobile, tablet, or laptop, which provide the facility to watch anytime, anywhere.

The research concluded that New Media-based video lectures were effective in ODL (Open Distance Learning) system but needed to focus on some criteria related to new media video production. Along with that, there is a need to raise awareness regarding New Media technology. The above findings indicated that an effective video lecture with a duration of fewer than 15 minutes, including a Presenter with PowerPoint presentation integrated with Animations and Graphics format either in Hindi or English, was more effectively delivered through a web-based platform. Indian Open Universities need to create a model for New Media based video lectures in terms of Duration of video lectures, Presentation Format, Language, and Mode of Delivery of

video lectures. There is also the need to know the path of maximum utilization of produced video learning material.

5.2.3: Barriers in producing New Media based video lectures in Indian Open Universities.

In the study, discussions were held with the producers of Indian Open Universities about the constraints in the video production process. Maximum IOUs do not have sufficient specific budget and infrastructure for video production. IOUs either do not have video production professionals or if they have them, they are not in enough for video production. All IOUs want to use the new media-based video lecture technology, but it is not being given much support. One of the most critical constraints in video production is the lack of willpower in the IOUs regarding its use. Some barriers were identified in IOUs related to video production which are as follows

1. Lack of Budget
2. Lack of Infrastructure
3. Lack of Human Resources
4. Inability to determine educational video program format
5. Lack of professional presenter cum expert.

5.2.3.1: Lack of Budget

Budget is most important for video production and also a giant barrier for IOUs. The demand for infrastructure can be met only when the budget will be sufficient. A video production team of professionals will also be selected according to the budget. In this research, it was found that IOUs do not have enough budgets for video production.

Most IOUs do not even have sufficient infrastructure. IOUs need a budget that is sufficient for video production to adopt video lecture technology. Universities should discuss this and create a framework based on which they can arrange the budget. The constraints related to video production can be overcome only if enough amount of budget is allocated. This research also found that the production of video lectures in educational video programs requires a fewer budget, while group discussion video production requires more budget than video lectures.

5.2.3.2: Lack of Infrastructure

This study has revealed that IOUs do not have enough infrastructure for video production. The study explored that infrastructure is a major barrier to video production. The studio will be the primary infrastructure. It will be required to create educational video programs that are not available in most IOUs. Along with the studio, video production tools are required for the production of the instructional video program. Educational video production can be done outdoor or indoor. An important thing that came out in this research was that educational video production can be majorly classified into two parts 1. Video Lectures 2. Educational Panel Discussion Videos.

Video lecture production is an indoor based program and it requires presenter cum expert for delivering the lecture. Indoor video lecture production will require a soundproof studio. So universities have to think about the studio development. Video Lecture production is an effective and creative format. The following infrastructure will be required during video production in the studio.

1. Soundproof Studio
2. Professional Lights
3. Professional HD Camera with a Memory Card

4. Teleprompter or Monitor
5. Microphone with Mixer and Recorder
6. Preview Monitor
7. Editing Suites with High Configuration Editing Computer with Professional Software.

The study found that the above things are required to produce an educational video lecture. The availability of this entire infrastructure is possible only if a sufficient amount of fund is allotted for the purpose.

Soundproof Studio- Soundproof studio with air conditioning is required to produce a better video program. It does not allow the noise from outside to enter inside during video production and helps in recording noise free audio. The sound that comes from outside may distract the attention of the presenter cum expert, which can hamper the video production and video lecture cannot be made effective. Therefore a soundproof studio will require producing a video lecture.

Professional Lights-The shooting of a video lecture is completed in the studio. Professional lights are essential for this process and without lights, the production can't be completed. The studio lighting has many formats like 3 point lighting and 5 point lighting, which can be used according to video production demand. Lights are necessary for video production- if there is no proper lighting, and then the quality of video production will be directly affected. If the lights are not arranged appropriately, the video lecture will be dark and the quality will also not be clean which may cause problems in reading the lecture. And if the lightings are better and brighter, the quality of the video lecture will also be good, so that the lectures will be effective to read. LED may be the right choice for use in the studio. It is cost-effective and reduces electricity consumption as compared to other lights.

Camera- The primary device of video production is a video camera and without it video production is not possible. The study found that the camera must support HD quality format. High definition camera footage is also good in terms of quality. Talking about the current technology, the recording video cassettes of the camera have been replaced by a memory card. Single camera shooting or multi-camera shooting is also possible in video lecturer's production. Multi-camera shooting will require more than one camera, which will also increase the budget expenditure. It should be noted that the camera should be professional with the option of mic input along with preview output.

Teleprompter-Teleprompter is essential in video lecture production. The presenter performs the slide or PPT during the video lecture by looking at the teleprompter.PPT slides appear on the teleprompter, and the presenter delivers lectures by reading PPT slides during video shooting.

Microphones with Audio Mixer- Microphones are required for video lecture production. The audio of the presenter is received by microphone, which is then recorded by the audio mixer. In single camera shoots, audio can be recorded in-camera through the mic. But in multi-camera shoot audio would be recorded in audio mixer. Audio mixers have several microphone input and output options also. The external microphone provides clear and balanced audio that the camera's inbuilt microphone cannot do. Audio of presenters should be clear in a video lecture, and if the audio is not clear, the video lecture may not be effective.

Preview Monitor- The presenter position, camera frame, details of lighting are seen via the preview monitor before starting the video shoot and the output can be monitored even during the shooting process. Preview monitors also provide the facility to examine all aspects of video lectures during shooting. The presenter's body

language, pronunciation, lightings moods, dress and background setup, all can be seen in the preview monitor.

Video Editing Setup- Post-production process starts after shooting the video. The post-production process is finalized through video editing. The video editing setup requires a computer with a high configuration and along with this, editing software is required for audio-video editing. Apart from this, different software are required for graphics and animation. With the help of the software, the video lectures are edited.

All these things are come under infrastructure, which is necessary for a video lecture production and IOUs will need a good budget for this.

5.2.3.3: Lack of Professionals- This research revealed that less availability of professional human resources is a significant obstacle to video production in IOUs. Except for IGNOU, none of the IOUs had sufficient professionals to undertake the video lecture production. A video production process can be divided into three stages based on which the professional can be selected: 1. Pre-Production: 2. Production: and 3. Post Production

5.2.3.4: Inability to determine educational video program format- The study explored that IOUs don't have any specific guidelines and format of the video lectures. It is a significant barrier in producing video lectures. Lack of a particular format makes it hard to finalize the budget and infrastructures. IOUs should have a specific guideline and format to produce a video program.

5.2.3.5: Lack of professional presenter cum expert- Producers explained that presenter cum experts is not camera-friendly and mostly presenters hesitate while delivering the lecture in front of the camera. They do not feel comfortable during the production of video lectures. The producers suggested that short term video

production training is required for presenter cum expert before starting the shooting. The duration of the short term training should also be finalized.

5.2.4: Barriers in the utilization of New Media based video lectures in Indian open universities.

Questionnaires, as well as interview schedules, were used to learn about the constraints encountered in the utilization of video lectures in the ODL system. Students, Teachers, Producers and IT Experts had filled the questionnaire. Apart from this, an Interview schedule had been conducted for them. In the interviews, they were asked about the obstacles faced in the utilization of video lectures. Based on the responses of teachers, producers and IT experts, the barriers were categorized into four parts.

1. Awareness
2. Quality of video program
3. Internet connectivity
4. Time Frame

Awareness- Efforts were made to know about measures to increase awareness among the students from the stakeholders. The study found out that it was essential to bring awareness among the learners about the channel run by the university. Since the matter is for open and distance learning students, they can be informed about the channels through many medium, i.e. Messages, Social Media, Contact Camp, Practical Camp Electronic Media, Print Media (pamphlet and advertisement).

Messages- All stakeholders suggested that awareness of new media-based video lectures should be spread among learners of the ODL system and text messages are one of the best solutions. IOUs can provide an option to subscribe to their New Media

channels. For this, they can send channel link via text messages. Through these messages, students can be made aware of the channel as well as other information from the universities.

Social Media- In the current scenario, social media is the most powerful medium to get information and share it. Stakeholders observed that awareness could be increased in learners through social media. Indian open universities can give information about their new media-based video channel via Facebook, Twitter, Instagram, and WhatsApp, etc. If the video channel is webcasting the lectures, then its link can be shared with students through social media. Any information can be made available to almost all ODL learners through social media.

Practical and Contact Camp- According to stakeholders, IOUs conduct practical and counselling contact camps for students. Universities conduct contact camps to help learners overcome a related problem. Apart from this, practical camps are also organized for students. IOUs also hold weekend classes for students. During these contact camps, IOUs can give information about their video channels to learners. IOUs can make them aware about using it more for learning. At the time of camp and classes, a session should be conducted to increase awareness about the initiatives being taken by the University for Student Support.

Electronic and Print Media- The study suggested that both electronic and print media can be used to increase awareness among learners. Counselling sessions can be organized on radio and during this, IOUs can create awareness about their video channel. Stakeholders believed that awareness could be raised among learners through TV channels. Awareness can also be increased through advertisements or tickers on TV channels. Stakeholders suggested that awareness could also be escalated among

learners via print media. According to them, awareness can be increased with the help of press releases, giving advertisements in newspapers and distributing the pamphlet.

2. Quality of video lecture- The study found that the quality of video lectures is another barrier in the utilization of video lectures. The quality of video lectures is referred to as analog or digital. It should be ensured that recording of video lectures is either in high definition format or in standard definition format. If the quality of video lectures is good, the students will enjoy learning from video lectures. The stakeholders said that in the time of transformation era, the technology was shifting from SD to HD. Its future is in HD. Along with this, they considered high definition HD format for better quality as compared to SD.

3. Internet connectivity- The study noted that internet connectivity is a major barrier in the utilization of video lectures. Learners need internet to watch new media-based video lectures. Unavailability or less availability of internet also poses a major barrier. Although several learners currently use internet, more internet may be required to watch the video lectures. IOUs can tell learners that if they are watching video lectures through YouTube, they can download them. YouTube provides the facility of downloading videos that can be watched later without internet. The file size of video lectures should be reduced, which can help to upload and download the video lecture with less internet consumption.

4. Time Frame- The Indian open universities which are providing video lectures to the students through TV would have to watch out the student's time. Time is also considered a barrier in the utilization of video lectures. Learners of IOUs are mostly working and professionals and they do not have enough time for fixed time-based study. Due to lack of time, they are unable to watch the video lectures coming on TV. Having less time, they are unable to watch the video lectures on TV, especially when

the Education TV Program comes; they do not have a proper place to watch it, nor do they have enough time for such a lengthy video lecture. Therefore IOUs should think about it and discuss it. Currently, new media has become popular among almost every student having a mobile phone. Learners are quickly moving away from the TV. Video lectures can be delivered to students through webcasting or YouTube channels so that they can watch and use them anywhere at any time.

5.2.5: Model of New Media Based Production and Development of Effective Video Lectures

The research has suggested a model for effective use of New Media based AV Material in the ODL system. To use Audio-Video material effectively in the ODL system, it is also necessary to understand its entire process. Unless the method of preparation of AV material is effective, its utility cannot be considered effective. Therefore, to use AV material effectively in the ODL system, it is necessary to empower the entire process from its construction to the delivery of video lectures to learners. This model has been proposed by keeping this whole process in mind. It has been constructed, based on the minimum budget. The model has been developed based on the findings of the above four objectives. The suggested model was discussed with ten experts of IOUs in focus group discussion. During the focus group discussion, different parts of the model were discussed. The experts gave their opinions and contributed a significant role in making the model effective. After the FGD, some modification has been done in the proposed model based on suggestions received from Group members. The model format after the amendment is as follows.

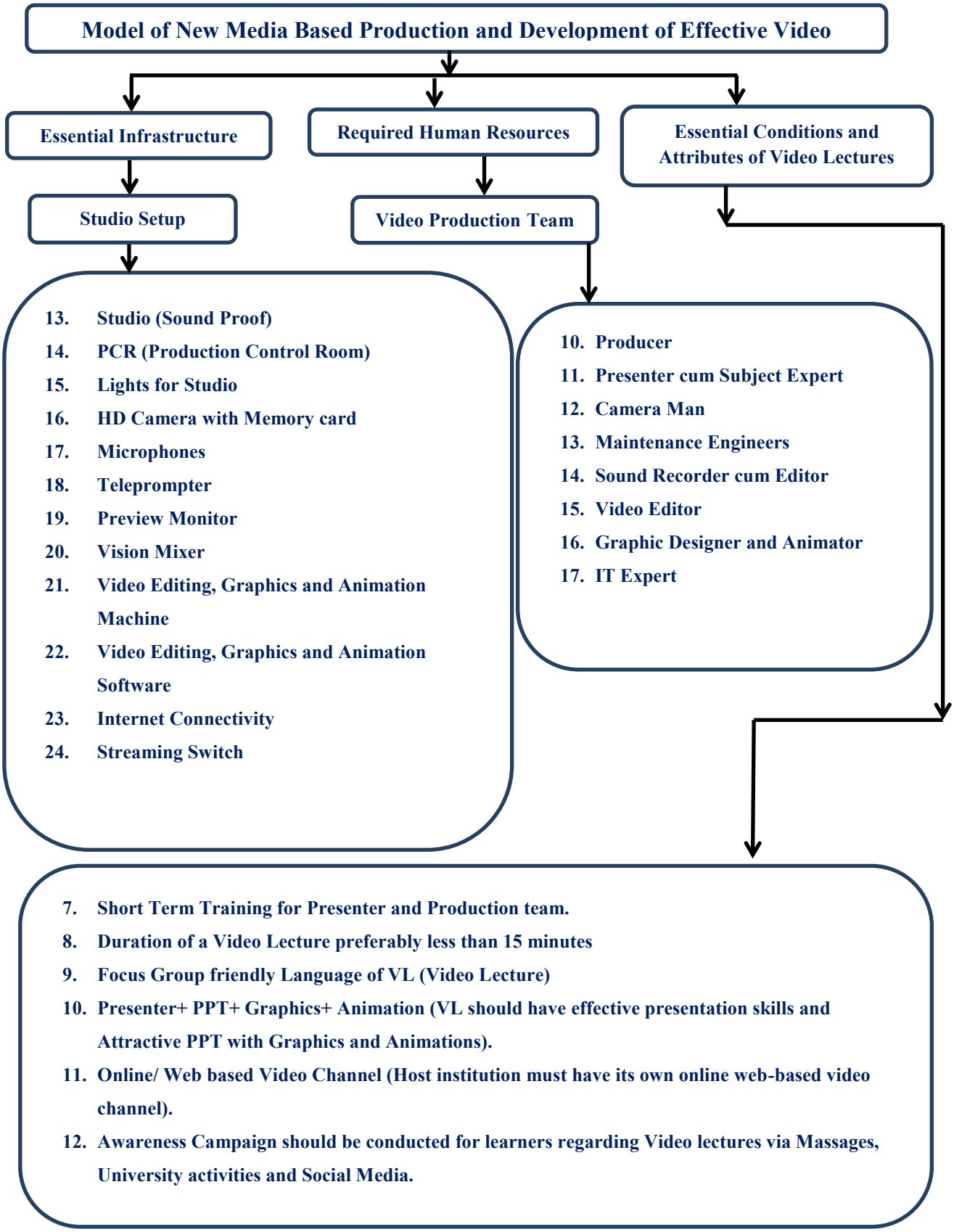


Figure 5.1: Suggested Suggestive Model- Effective use of New Media based video Lecture in IOUs

The Model as mentioned above has been classified into three parts

1. Essential Infrastructure
2. Required Human Resources
3. Essential Conditions and Attributes of Video Lectures

1- Essential Infrastructure- Infrastructure is organized into Studio Setup.

Studio setup- It includes all the elements related to physical infrastructure which contribute to AV material production. An effective and useful video lecture would not be possible without this setup. It also includes technical equipment and software in addition to physical infrastructure. A total of 12 items are required in the studio setup.

1. Studio (Sound Proof)
2. PCR (Production Control Room)
3. Lights for Studio
4. HD Camera with the Memory Card
5. Microphones
6. Teleprompter
7. Preview Monitor
8. Vision Mixer
9. Video Editing, Graphics and Animation Machine
10. Video Editing, Graphics and Animation Software
11. Internet Connectivity
12. Streaming Switch

1. Studio-It is an essential part of the proposed model. Video Lectures and Video Discussion programs can be shot in the studio. Soundproof is a prominent feature of the studio. A soundproof studio provides a noise-free environment that helps the

experts maintain their attention during the video lecture shoot. Audio quality will be clear when a video lecture would be shot in the soundproof studio. Chroma Wall setup should be essential for Studio, which can provide the opportunity to make the video lecture more interactive. It plays a significant role in making a video lecture effective.

2. PCR (Production Control Room) -The production control room (PCR) is a place in the studio where the composition of the video production is done. It is the actual place of the producer where he finalizes all the video production process. PCR is also used for managing and controlling the lights and seeing the audio-video preview during studio shooting. The work for switching from one camera to another is done in this room. Live video recording with GFX can be managed through a vision mixer in PCR. Therefore, it is also necessary to have a PCR with the studio. Apart from this, the post-production process can also be completed in it. All types of tasks related to audio-video production are managed in PCR.

3. Lights for Studio- It is very important to use lights for human life and the same is the case with AV Production. No AV program can be shot without lights. The lighting setup is essential for video recording in the studio. Currently, the use of LED lights has increased. Tungsten lights were formerly used. The major difference between LED lights and tungsten is electricity consumption. LED lights consume less electric power and tungsten lights consume almost twice the electricity as compared to LEDs. Therefore LED lights can be more useful for a studio setup.

4. HD Camera with Memory Card - It is necessary to have a good video camera to make a good quality video production. If the video camera is not right, then the video quality will be poor. Therefore, the learners may face difficulties in watching the video. Technology is moving beyond HD cameras. Technology is moving from HD to

UHD (Ultra High Definition), 4k and 8k video quality. But currently, HD camera is sufficient for a good quality video shoot, which is affordable as well. Memory cards are presently being used for recording videos with HD cameras. In earlier times, tapes were used for video recording, but in the present time, video recording is done through the memory card of the camera. Therefore, memory cards are used for HD video recording.

5. Microphone- Microphone is required for AV production. Without this, a video lecture cannot be created. The microphone is used during AV shoot. If the microphone is not used separately during the video shoot, the sound will not be recorded and noise, hiss and ambiance sound will get recorded. They can affect the sound quality of video lectures. Due to poor sound quality, the learners will face trouble in hearing clear audio and will not be able to listen to the video lecture effectively. If the audio is defective, then the video lectures will not be useful. The use of microphones is necessary, whether wireless or wired- both can be used.

6. Teleprompter-Teleprompter is a device that enables the presenter to deliver a video lecture by reading the content on its screen. The presenter reads out the PPT from a teleprompter during the shooting of video lectures. Duration of video lectures is limited and experts have to complete the topic within that limited time and deliver to the point lecture. Therefore the teleprompter is used to read PPT for delivering video lectures.

7. Preview Monitor- Preview monitor is used for monitoring the video shooting process. The preview can be observed before starting the video shoot and continued to be watched during video shooting as well. Lights in the studio can be monitored with the preview monitor. The position of the presenter in front of the camera, his/her

pronunciation, video duration, camera angle and camera shots, etc. is obtained through a preview monitor. RGB Monitor can be used as a preview monitor.

8. Vision Mixer- The vision mixer is used to perform a live telecast of video lectures or execute some of the editing work during live shooting. The vision mixer has many video inputs along with audio channels. It is used to perform multi-camera shooting. The real-time colour correction, construction graphics inputs, Chroma key as well as text animation inputs during audio-video production can be done through the Vision Mixer. Apart from this, the work of live video switching can also be done from it. It is used in multi-camera video production, which makes it easy to prepare a video lecture. It also helps in producing more video lectures in less time.

9. Audio-Video Editing Machine- After the video recording, the post-production process starts. The video lecture is edited in the post-production stage. If there is an error during the video recording, then it can be removed through editing. According to the script, all needed corrections, related text and graphics are to be added through editing. A high configuration computer is required to edit the video lectures. In addition to editing, graphics and animation software can be used in this process. In this high configuration computer, editing software should be installed on the computer, which is called an editing machine. It can help in creating an effective video lecture.

10. Video Editing, Graphics and Animation Software- In addition to video editing software, graphics design software can be used in the video editing machine. It will create an effective video lecture. PPT for the presentation can be made attractive through editing and graphics. The software provides an opportunity to make video lectures more interactive.

11. Internet Connectivity- After completing the video lecture, internet connectivity will be required to make the video lecture accessible to the learner. Internet connectivity will be required to upload and download video lectures. Currently, the availability of the internet should be increased to watch new media-based video lectures.

12. Streaming Switch- The streaming process will be started after making video lectures on New Media based platform. Streaming switch and the internet will be essential for webcasting of the video lectures. Streaming switchers can do live sessions of video lecture. It is important for webcasting and live video lectures.

2- Required Human Resources- An essential part of this model is Human Resources, which is classified as Video Production Team. Video Production Team will help in producing the video lectures and uploading them.

Video Production Team- Some modifications were made in the proposed model after the Focus Group Discussion with experts. Some amendments were made in the part of the video production team in this model. The post of scriptwriter has been merged with the producer in the video production team. Most of the experts suggested that the producer can do scriptwriting with the help of expert cum presenter. The amendment has led to the creation of a Maintenance Engineer post. Another change was that the post of Graphics Designer has been merged with the post of Animator. There is no need for a dedicated scriptwriter and animator, which helps the universities to save their budget. These amendments were made after following the suggestions of most stakeholders during the FGD. They suggested that while selecting the video production team, a video editor who knows video editing as well as graphics designing should be selected. A video editor can perform the part of graphics

designer. Total three changes were made in the video production team section. The details of the video production team as follows:

10. Producer
11. Presenter Cum Subject Expert
12. Camera Man
13. Maintenance Engineers
14. Sound Recorder Cum Editor
15. Video Editor
16. Graphic Designer and Animator
17. IT Expert

1. Producer- The producer is the head of the video production team. The work of the producer is significant in all three stages- Pre-Production, Production and Post-Production. In the proposed model, the producer's job is to lead the entire video production team as well as coordinate among them. He designs the whole video production and creates the script with an expert cum presenter. The producer distributes the entire work at all production stages. We have already discussed pre-production, production and post-production in objective number 03. The producer also has to do the task of managing the entire team as well as their functions.

2. Presenter Cum Expert- Presenter cum expert plays an important role in developing an educational video lecture. A video lecture will be effective when the presentation of the presenter is effective. A subject expert performs the role of presenter in the educational video lecture. The presenter should have complete knowledge of the subject. Therefore, he/she can also be called presenter cum expert. The presenter prepares a presentation related to his/her topic for the video lecture. The presenter has to be aware of short term training and should be complete it. The

presenter is also a subject expert. Therefore, the content of the PPT should be correct and must contain the text and images related to the topic.

3. Cameraman- Video recording is not possible without the cameraman. It would not be an exaggeration to call the cameraman as the key man of the production stage. His job is to handle the camera in video lecture production. He has to set the frame for the presenter through the video camera. With the help of producer, he decides what the frame will be like, which shot to take, long shot, mid-shot, mid-long or close up. Along with that, he also sets the focus of the presenter cum expert from the camera. Before starting the recording, he can check the frequency and level of the sound and also adjusts it according to the need. Video recording has to be done, keeping in mind the instructions of the producer along with his camera knowledge.

4. Maintenance Engineer- The Maintenance Engineer maintains all types of equipment related to video production. He plays a vital role in looking after the studio and its different types of equipment like Camera, Lights, Vision Mixer, Microphones, Editing Machines, etc. He can help in setting the lights while producing the video lecture. Maintenance Engineer should know about all types of equipment related to video production.

5. Sound Recorder Cum Editor- Although the work of sound recorder and sound editor may differ in video production houses, the IOUs sound recorder cum editor post has been kept in this model. The sound recorder designs the sound of video recording during the production stage. Together with the producer, he has to set the level of the sound before recording. If it is a single-camera shoot, it would be easier to design the sound. In a multi-camera shoot, sound will have to be designed using the audio mixer. Apart from setting the level of the sound of presenter cum expert, the sound also has to manage the bass, treble, ambiance sound and hissing sound. The

work of sound recorder cum editor is to design the sound along with performing the editing of the recorded sound. If there is any problem in recording audio, it can be removed while editing. He has the capability of making modifications or changes in audio with the help of effects or increases the sound level.

6. Video Editor- Video Editor is the key person in the post-production stage. A video lecture can make an effective, but it is necessary to have a creative video editor. The video editor puts the recorded videos in a sequence of scripts through the video editing software in the post-production stage. If there is any problem in the video during recording, it is corrected through editing. He should also know about graphic design. If the video editor knows graphic design, he will be able to do video editing very well.

7. Graphics Designer Cum Animator- The animator and graphic designers are different positions in the professional production house, but keeping the focus on the Indian Open Universities, this model has created a post of Graphics Designer Cum Animator by merging these two into one. He creates the graphics on demand of the script and does animation when required. It has two benefits:- one, the animator will not have to explain the graphics and second, he will not have to wait for the graphics. The Graphics Designer Cum Animator should do post-production work together with the producer.

8. IT Expert- It is important to have an IT expert in the video production team. Currently, New Media Technology has also upgraded them. The proposed model encompasses the process of production to use of the New Media Based video lecture. After the post-production of video lectures, it can be uploaded on New Media based platform. It is the responsibility of an IT expert to upload video lectures and provide

internet for them. IT experts also manage video lectures on the New Media-based platform and try that video lectures reach to maximum learners.

3- Video Lecture Pattern- The video lecture pattern is the second core of this model. This part talks about its pattern to create an effective video lecture. The following items are included in this pattern viz. duration of the video lecture, its language, its presentation format and the delivery mode of video lectures, which will be useful for the student at present. A total of six items are included in the video lecture pattern, based on which an effective video lecture can be created and used. These items are included in this model based on the second objective of this research. These are as follows.

1. Short Term Training for Presenter and Production team.
2. Duration of a Video Lecture preferably less than 15 minutes
3. Focus Group friendly Language of VL (Video Lecture)
4. Presenter+ PPT+ Graphics+ Animation (VL should have effective presentation skills and Attractive PPT with Graphics and Animations).
5. Online/ Web-based Video Channel (Host institution must have its own online web-based video channel).
6. Awareness Campaign should be conducted for learners regarding Video lectures via Messages, University activities and Social Media.

1. Short Term Training- It is one of the essential elements for producing effective video lectures. Under this, before shooting video lectures, short term training to all the members along with the presenter cum expert should be provided. This short term training should be of minimum one to two days. In this, training should be imparted

for the presentation of video production to the various processes of video production. Presenter cum expert should be trained about the presentation of the video lecture presentation. During the training period, focus should be on performance in front of the camera. They should be given training about the language to speak and building the PPT, including inserting images and graphics. The training session should also tell about the projects related to video production. Training should be conducted with all team members.

2. Duration of a Video Lecture- The model has suggested the duration of a video lecture and recommends less than 15 minutes. The detailed explanations have been discussed in the conclusion of objective 02.

3. Focus Group Friendly Language of VL- The model has found out the language of video lectures. Based on findings of the above objectives, language should be focus group friendly. The video lecture language should be decided according to their target audience. If learners can understand Hindi or English language, then video lecture should be made in Hindi or English language. Before creating the video lecture, decision should be taken about the focus Group.

4. Presenter+ PPT+ Graphics+ Animation- Model has suggested the format of a video lecture presentation**.** The video lecture should be shot with the presenter with the help of PPT presentation integrated with graphics and animation. Animation and graphics can make video lectures more interactive. VL should have effective presentation skills and attractive PPT with graphics and animations. The detailed discussion has been made in the above objective 02.

5. Online Web-based Video Channel- Online or web-based video channels can be used for effective utilization of VL. Video Lectures can be reached to students effectively by creating web-based or YouTube video channels. IOUs should create a

YouTube / web-based channel to make its VL available to maximum learners. Currently, with the help of New Media, more and more learners will be able to use these VLs anytime, anywhere. It has been discussed in detail in objective 04.

6. Awareness via Messages, Universities Activity and Social Media- It has been discussed in detail in objective 04. A video lecture can be effective when it reaches the maximum number of students, and for this, IOUs should increase the awareness about their video channels among learners. Text message option can be adopted for spreading awareness by IOUs. Link of Video Channels can be sent along with text messages. IOUs can raise awareness among students during their Counselling Classes, Practical Camps and Exam Sessions. Social Media has become a robust tool for spreading awareness. IOUs have to share the links of video lectures and their video channels to make the students aware. Facebook, Twitter, Instagram, and Whatsapp are primary New Media weapons of communication. IOUs can use them and win the race of effective use of New Media based Video Lectures.

The research was focused on emerging New Media based education. Use of New Media based video lectures in Indian Open Universities was the center of investigation. The study explored the status of the New Media intervention in Indian Open Universities. It discussed all areas of the related subject and conducted an in-depth research on obstacles and suggested solutions to them. It is performed based on original data, which was gathered by the researcher. The result of the study was developed with the help of the related experts' opinions. A model was suggested for effective use of New Media based video lectures by IOUs, which may be supportive of other Universities. IOUs have to use this Model in the primary way, which can provide a focused path of effective and quality study materials to learners. New Media has lifted e-learning to facilitate the learners. The study has tried to discover the video

lecture learning platform through New Media. New Media has a vast opportunity for research and it can provide a benefit for learning. Some practises have been started towards this direction and authorities have established the dedicated channels. But learners need quality based instructional videos with flexible learning platform. The conclusion of the research is that IOUs have to take the necessary steps for providing new media-based video lecture facilities to learners. Universities have to increase their reach in every part of India and the suggested model can play a vital role in it.

Appendix

New Media Intervention Checklist (NMIC) for Indian Open University

Name of University……

Year of Establishment……..

Website URL of University…….

	Elements/ Components	Response			
		Yes	**NO**	**YES but Not Functioning**	**Remarks**
	Section A				
1	Audio-Video Department				
2	Audio-Video Production Facilities				
3	Producing Audio-Video Lectures				
4	CDs-DVDs Learning Material which are Provided to Students				
5	E-Self Learning Material				

	Section B					
6	Audio Channel					
	Radio	AIR Name……				
		If Any Other please Mention Name…….				
	Transmission	Analog	AIR				
			ANY				
		Digital	AIR				
			ANY				
7	Web Radio Name……						
8	Video Channel					
	TV Channel	Doordarshan ……				
		If Any Other please Mention ……				

9	Web-Based Video Channel	YouTube ……				
		If Any Other please Mention the Name ……				
10	Social Media	Twitter				
		Facebook				
		Google+				
		LinkedIn				
		Others				
11	Mobile Apps ……..					

Date:-

Questionnaire for Teacher

Effectiveness and Barriers of Video Lecture in Distance Education

This questionnaire is designed to study Effectiveness of Video Lecture in Distance Education All information provided by you are purely for academic purpose and will be kept confidential.

Name:-.....Gender:- Male / Female/Transgender

Designation and Subject…….Age: - ……..

University: -…….

	Section A			
S.No.	Question		Yes	No
1.	Do you use Internet?			
	If Yes then please specify how much time per day you spend on internet?	A. Less than 1 Hours		
		B. 1-3 Hours		
		C. 3-6 Hours		
		D. More than 6 Hours		
2.	Do you know about e-learning?			
3.	Do you agree that Internet is important for Learning?			
	If Yes then please specify which device you are using for Internet	A. Mobile/ Tablet		
		B. Laptop		
		C. Desktop		
		D. Any Other……..		
4.	Are you aware of Social Media?			
	If Yes then please specify which Social Media are you using (Tick all that apply)	A. Facebook		
		B. Twitter		
		C. YouTube		
		D. WhatsApp		
5.	Do you watch YouTube?			
	If Yes then Which Types of videos you like to watch on YouTube?	A. Educational Video Lectures		
		B. Movie Trailers/ Songs		
		C. Movie		
		D. Any Other……		

S.No.	Question		Yes	No
6.	Do you like to watch video lectures on YouTube?			
	If 'Yes' then how much Video Lectures do you watch in a day on an average	A. 1 - 2		
		B. 2 - 4		
		C. 4- 6		
		D. More than 6		
	If 'No' then please specify the reason	A. Not Much Interested		
		B. Limited Internet Data		
		C. Videos are of Long duration		
		D. Any other……		
7.	Are you aware of University Web / YouTube based Video Channel?			
	If Yes then Please specify which Educational web based/ YouTube Channel you watch more?	A. vmouonline		
		B. e-gyankosh		
		C. uoulive		
		D. any other……		
	If 'NO' then please specify the reason	A. Lack of Awareness		
		B. Never heard about this		
		C. Never informed by the University		
		D. Any other……		
8.	Do you aware of educational TV Channel?			
	If Yes then which one	A. Doordarshan		
		B. GyanDarshan		
		C. Vyas TV		
		D. Any Other……		
	If No then please specify the reason	A. Lack of Awareness		
		B. Never heard about it		
		C. Never told by University		
		D. Any Other……		

S.No	Question		Yes	No
9.	Do You like to watch Educational Video Lectures on TV?			
	If Yes then how much Video Lectures you watch in a day on an average	A. Less than 2		
		B. 2-5		
		C. 5-7		
		D. Any Other……		

Section B
Effectiveness of Video Lectures

S.NO.	Domain 01- Duration of Video Lecture	Yes	NO
10	Do you agree that Video Lectures are easy to access at any time and at everywhere?		
11	Did you find Video lectures are effective in Open Distance Learning?		
12.	Do you agree that the duration of an effective video lecture should be less than 15min.?		
13.	Do you agree that the duration of an effective video lecture should be 16 to 30 min.?		
14.	Do you agree that the duration of an effective video lecture should be more than 30 min.?		
	Domain 02- Format of Video Lecture		
15.	Do you agree that an effective video lecture should be Only in Presenter based format?		
16.	Do you agree that an effective video lecture should be in Voice Over+ PPT based format?		
17.	Do you agree that an effective video lecture should be in Presenter+ PPT+ Animation+ Graphics based format?		
	Domain 03- Language of Video Lecture		
18.	Do you agree that the Language of an effective video lecture should be in English?		
19.	Do you agree that the Language of an effective video lecture should be in Hindi?		
20.	Do you agree that the Language of an effective video lecture should be in Regional Language?		
21.	Do you agree that the Language of an effective video lecture should be in Bi-Lingual (English & Hindi Mix) Language?		
	Domain 04- Mode of delivery of Video Lecture		
22.	Do you agree that the Mode of delivery of an effective video lecture should be Online and Web based?		
23.	Do you agree that the Mode of delivery of an effective video lecture should be Offline CD/DVD or Storage Device based?		
24.	Do you agree that the Mode of delivery of an effective video lecture should be TV Broadcasting based?		
25.	Do you agree that the Mode of delivery of an effective video lecture should be Mobile or Android App based?		

Interview Schedule

1. Kindly explain that how video lecture has changed the scenario of learning in ODL System?
   ……
   ……
   ……
   ……
2. What is your opinion about short term training for teachers related to creating video lectures?
   ……
   ……
   ……
3. How to create awareness among students about web based videolectures?
   ……
   ……
   ……
4. Kindly explain the availability of video lectures in various subjects in Indian Open Universities?
   ……
   ……
   ……
   ……
5. What do you think about effectiveness of web based video lectures and TVbased videolectures?

   ……
   ……
   ……
6. How to make video lecture more effective to foster needs of ODL system?

   ……
   ……
   ……
7. What are the barriers in utilization of video lectures for ODL Students?

   ……
   ……
   ……
   ……
8. What do you think about University infrastructure for web based video production? Kindly Explain.

   ……
   ……
   ……
   ……

Suggestions……

Email- Mobile Thanks

Questionnaire for Producer

Effectiveness and Barriers of Video Lecture in Distance Education

This questionnaire is designed to study Effectiveness of Video Lecture in Distance Education All information provided by you are purely for academic purpose and will be kept confidential.

Name:-.....Gender:- Male / Female/Transgender

Designataion……. Age: - …….

University: -……

	Section A			
S.No.	Question		Yes	No
1.	Do you use Internet?			
	If Yes then please specify how much time per day you spend on internet?	A. Less than 1 Hours		
		B. 1-3 Hours		
		C. 3-6 Hours		
		D. More than 6 Hours		
2.	Do you know about e-learning?			
3.	Do you agree that Internet is important for Learning?			
	If Yes then please specify which device you are using for Internet	A. Mobile/ Tablet		
		B. Laptop		
		C. Desktop		
		D. Any Other……..		
4.	Are you aware of Social Media?			
	If Yes then please specify which Social Media are you using (Tick all that apply)	A. Facebook		
		B. Twitter		
		C. YouTube		
		D. WhatsApp		
5.	Do you watch YouTube?			
	If Yes then Which Types of videos you like to watch on YouTube?	A. Educational Video Lectures		
		B. Movie Trailers/ Songs		
		C. Movie		
		D. Any Other……		

S.No.	Question		Yes	No
6.	Do you like to watch video lectures on YouTube?			
	If 'Yes' then how much Video Lectures do you watch in a day on an average	A. 1 - 2		
		B. 2 - 4		
		C. 4- 6		
		D. More than 6		
	If 'No' then please specify the reason	A. Not Much Interested		
		B. Limited Internet Data		
		C. Videos are of Long duration		
		D. Any other……		
7.	Are you aware of University Web / YouTube based Video Channel?			
	If Yes then Please specify which Educational web based/ YouTube Channel you watch more?	A. vmouonline		
		B. e-gyankosh		
		C. uoulive		
		D. any other……		
	If 'NO' then please specify the reason	A. Lack of Awareness		
		B. Never heard about this		
		C. Never informed by the University		
		D. Any other……		
8.	Do you aware of educational TV Channel?			
	If Yes then which one	A. Doordarshan		
		B. GyanDarshan		
		C. Vyas TV		
		D. Any Other……		
	If No then please specify the reason	A. Lack of Awareness		
		B. Never heard about it		
		C. Never told by University		
		D. Any Other……		

S.No	Question		Yes	No
9.	Do You like to watch Educational Video Lectures on TV?			
	If Yes then how much Video Lectures you watch in a day on an average	A. Less than 2		
		B. 2-5		
		C. 5-7		
		D. Any Other……		

Section B
Effectiveness of Video Lectures

S.NO.	Domain 01- Duration of Video Lecture	Yes	NO
10	Do you agree that Video Lectures are easy to access at any time and at everywhere?		
11	Did you find Video lectures are effective in Open Distance Learning?		
12.	Do you agree that the duration of an effective video lecture should be less than 15min.?		
13.	Do you agree that the duration of an effective video lecture should be 16 to 30 min.?		
14.	Do you agree that the duration of an effective video lecture should be more than 30 min.?		
	Domain 02- Format of Video Lecture		
15.	Do you agree that an effective video lecture should be Only in Presenter based format?		
16.	Do you agree that an effective video lecture should be in Voice Over+ PPT based format?		
17.	Do you agree that an effective video lecture should be in Presenter+ PPT+ Animation+ Graphics based format?		
	Domain 03- Language of Video Lecture		
18.	Do you agree that the Language of an effective video lecture should be in English?		
19.	Do you agree that the Language of an effective video lecture should be in Hindi?		
20.	Do you agree that the Language of an effective video lecture should be in Regional Language?		
21.	Do you agree that the Language of an effective video lecture should be in Bi-Lingual (English & Hindi Mix) Language?		
	Domain 04- Mode of delivery of Video Lecture		
22.	Do you agree that the Mode of delivery of an effective video lecture should be Online and Web based?		
23.	Do you agree that the Mode of delivery of an effective video lecture should be Offline CD/DVD or Storage Device based?		
24.	Do you agree that the Mode of delivery of an effective video lecture should be TV Broadcasting based?		
25.	Do you agree that the Mode of delivery of an effective video lecture should be Mobile or Android App based?		

Interview Schedule

1. Which format of Video Production is more easy to produce Video Lecture, Panel and Group Discussion and why?

   ……
   ……
   ……..
2. Which types of professionals are required in a video lecture production team? Kindly explain.

   ……
   ……
   ……
3. Which type of problem you face during Educational Video production related to Presenter and its Presentation?

   ……
   ……
   ……
4. Which types of problems you face during video production in general and Video production at Indian Open Universities? Kindly explain.

   ……
   ……
   ……
5. Which Video technology you prefer for production HD video or SD video and why?

   ……
   ……
6. Which technology of web based video lecture production or broadcasting video lecture production will be more popular in future and why?

   ……
   ……
   ……
7. What are the barriers in utilizing the video lectures for ODL Students?

   ……
   ……
   ……...
8. What do you say about efficacy of Indian educational TV Channels?

   ……
   ……
   ……
9. What Changes do you suggest to create better and effective video lectures?

   ……
   ……
   ……

Suggestions……
……
……

Email- Mobile Thanks

Questionnaire for IT Expert

Effectiveness and Barriers of Video Lecture in Distance Education

This questionnaire is designed to study Effectiveness of Video Lecture in Distance Education All information provided by you are purely for academic purpose and will be kept confidential.

Name: -.....Gender:- Male / Female/ Transgender

Designation……Age: - ……..

University: -……

	Section A			
S.No.	Question		Yes	No
1.	Do you use Internet?			
	If Yes then please specify how much time per day you spend on internet?	A. Less than 1 Hours		
		B. 1-3 Hours		
		C. 3-6 Hours		
		D. More than 6 Hours		
2.	Do you know about e-learning?			
3.	Do you agree that Internet is important for Learning?			
	If Yes then please specify which device you are using for Internet	A. Mobile/ Tablet		
		B. Laptop		
		C. Desktop		
		D. Any Other……..		
4.	Are you aware of Social Media?			
	If Yes then please specify which Social Media are you using (Tick all that apply)	A. Facebook		
		B. Twitter		
		C. YouTube		
		D. WhatsApp		
5.	Do you watch YouTube?			
	If Yes then Which Types of videos you like to watch on YouTube?	A. Educational Video Lectures		
		B. Movie Trailers/ Songs		
		C. Movie		
		D. Any Other……		

S.No.	Question		Yes	No
6.	Do you like to watch video lectures on YouTube?			
	If 'Yes' then how much Video Lectures do you watch in a day on an average	A. 1 - 2		
		B. 2 - 4		
		C. 4- 6		
		D. More than 6		
	If 'No' then please specify the reason	A. Not Much Interested		
		B. Limited Internet Data		
		C. Videos are of Long duration		
		D. Any other……		
7.	Are you aware of University Web / YouTube based Video Channel?			
	If Yes then Please specify which Educational web based/ YouTube Channel you watch more?	A. vmouonline		
		B. e-gyankosh		
		C. uoulive		
		D. any other……		
	If 'NO' then please specify the reason	A. Lack of Awareness		
		B. Never heard about this		
		C. Never informed by the University		
		D. Any other……		
8.	Do you aware of educational TV Channel?			
	If Yes then which one	A. Doordarshan		
		B. GyanDarshan		
		C. Vyas TV		
		D. Any Other……		
	If No then please specify the reason	A. Lack of Awareness		
		B. Never heard about it		
		C. Never told by University		
		D. Any Other……		

S.No	Question		Yes	No
9.	Do You like to watch Educational Video Lectures on TV?			
	If Yes then how much Video Lectures you watch in a day on an average	A. Less than 2		
		B. 2-5		
		C. 5-7		
		D. Any Other……		

Section B
Effectiveness of Video Lectures

S.NO.	Domain 01- Duration of Video Lecture	Yes	NO
10	Do you agree that Video Lectures are easy to access at any time and at everywhere?		
11	Did you find Video lectures are effective in Open Distance Learning?		
12.	Do you agree that the duration of an effective video lecture should be less than 15min.?		
13.	Do you agree that the duration of an effective video lecture should be 16 to 30 min.?		
14.	Do you agree that the duration of an effective video lecture should be more than 30 min.?		
	Domain 02- Format of Video Lecture		
15.	Do you agree that an effective video lecture should be Only in Presenter based format?		
16.	Do you agree that an effective video lecture should be in Voice Over+ PPT based format?		
17.	Do you agree that an effective video lecture should be in Presenter+ PPT+ Animation+ Graphics based format?		
	Domain 03- Language of Video Lecture		
18.	Do you agree that the Language of an effective video lecture should be in English?		
19.	Do you agree that the Language of an effective video lecture should be in Hindi?		
20.	Do you agree that the Language of an effective video lecture should be in Regional Language?		
21.	Do you agree that the Language of an effective video lecture should be in Bi-Lingual (English & Hindi Mix) Language?		
	Domain 04- Mode of delivery of Video Lecture		
22.	Do you agree that the Mode of delivery of an effective video lecture should be Online and Web based?		
23.	Do you agree that the Mode of delivery of an effective video lecture should be Offline CD/DVD or Storage Device based?		
24.	Do you agree that the Mode of delivery of an effective video lecture should be TV Broadcasting based?		
25.	Do you agree that the Mode of delivery of an effective video lecture should be Mobile or Android App based?		

Interview Schedule

1. As per your opinion which platform is better and cost effective for students either web based channel or broadcasting TV Channel and why?
   ……
   ……
   ……
2. What do you say about accessibility and availability of Internet services in India?
   ……
   ……
3. Do you feel that Indian students have sufficient infrastructure for web based learning?
   ……
   ……
4. Kindly explain barriers to reachability of web based video lectures?
   ……
   ……
   ……
5. Which types of technical problems are being faced in delivery of video lectures?
   ……
   ……
   …….
6. As per your opinion what are solutions of problems during web based video lectures delivery?
   .....
   .....
   .....
7. Which types of infrastructures are required for the developing a web based video lectures Channel? Kindly Suggest.
   ……
   ……
   ……

Sugesstion……
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Email- Mobile Thanks

Questionnaire for Students

Effectiveness and Barriers of Video Lecture in Distance Education

This questionnaire is designed to study Effectiveness of Video Lecture in Distance Education All information provided by you are purely for academic purpose and will be kept confidential.

Name: -.....Gender:- Male / Female/ Transgender

Name of Programme……. Age: - ……..

University: -……

	Section A			
S.No.	Question		Yes	No
1.	Do you use Internet?			
	If Yes then please specify how much time per day you spend on internet?	A. Less than 1 Hours		
		B. 1-3 Hours		
		C. 3-6 Hours		
		D. More than 6 Hours		
2.	Do you know about e-learning?			
3.	Do you agree that Internet is important for Learning?			
	If Yes then please specify which device you are using for Internet	A. Mobile/ Tablet		
		B. Laptop		
		C. Desktop		
		D. Any Other……..		
4.	Are you aware of Social Media?			
	If Yes then please specify which Social Media are you using (Tick all that apply)	A. Facebook		
		B. Twitter		
		C. YouTube		
		D. WhatsApp		
5.	Do you watch YouTube?			
	If Yes then Which Types of videos you like to watch on YouTube?	A. Educational Video Lectures		
		B. Movie Trailers/ Songs		
		C. Movie		
		D. Any Other……		

S.No.	Question		Yes	No
6.	Do you like to watch video lectures on YouTube?			
	If 'Yes' then how much Video Lectures do you watch in a day on an average	A. 1 - 2		
		B. 2 - 4		
		C. 4- 6		
		D. More than 6		
	If 'No' then please specify the reason	A. Not Much Interested		
		B. Limited Internet Data		
		C. Videos are of Long duration		
		D. Any other……		
7.	Are you aware of University Web / YouTube based Video Channel?			
	If Yes then Please specify which Educational web based/ YouTube Channel you watch more?	A. vmouonline		
		B. e-gyankosh		
		C. uoulive		
		D. any other……		
	If 'NO' then please specify the reason	A. Lack of Awareness		
		B. Never heard about this		
		C. Never informed by the University		
		D. Any other……		
8.	Do you aware of educational TV Channel?			
	If Yes then which one	A. Doordarshan		
		B. GyanDarshan		
		C. Vyas TV		
		D. Any Other……		
	If No then please specify the reason	A. Lack of Awareness		
		B. Never heard about it		
		C. Never told by University		
		D. Any Other……		
9.	Do You like to watch Educational Video Lectures on TV?			
	If Yes then how much Video Lectures you watch in a day on an average	A. Less than 2		
		B. 2-5		
		C. 5-7		
		D. Any Other……		

Section B Effectiveness of Video Lectures			
S.NO.	**Domain 01- Duration of Video Lecture**	Yes	NO
10.	Do you agree that Video Lectures are easy to access at any time and at everywhere?		
11.	Did you find Video lectures are effective in Open Distance Learning?		
12.	Do you agree that the duration of an effective video lecture should be less than 15min.?		
13.	Do you agree that the duration of an effective video lecture should be 16 to 30 min.?		
14.	Do you agree that the duration of an effective video lecture should be more than 30 min.?		
Domain 02- Format of Video Lecture			
15.	Do you agree that an effective video lecture should be Only in Presenter based format?		
16.	Do you agree that an effective video lecture should be in Voice Over+ PPT based format?		
17.	Do you agree that an effective video lecture should be in Presenter+ PPT+ Animation+ Graphics based format?		
Domain 03- Language of Video Lecture			
18.	Do you agree that the Language of an effective video lecture should be in English?		
19.	Do you agree that the Language of an effective video lecture should be in Hindi?		
20.	Do you agree that the Language of an effective video lecture should be in Regional Language?		
21.	Do you agree that the Language of an effective video lecture should be in Bi-Lingual (English & Hindi Mix) Language?		
Domain 04- Mode of delivery of Video Lecture			
22.	Do you agree that the Mode of delivery of an effective video lecture should be Online and Web based?		
23.	Do you agree that the Mode of delivery of an effective video lecture should be Offline CD/DVD or Storage Device based?		
24.	Do you agree that the Mode of delivery of an effective video lecture should be TV Broadcasting based?		
25.	Do you agree that the Mode of delivery of an effective video lecture should be Mobile or Android App based?		

Sugesstion……
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Email- Mobile Thanks

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Demiray, U., & İşman, A. (1996). *HISTORY OF DISTANCE EDUCATION*. Retrieved from http://dergipark.gov.tr: http://dergipark.gov.tr/download/article-file/115681

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Efficacy of new media based video lectures in open and distance education system of India

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Abstract: New Media based learning materials are gaining popularity among teachers and students nowadays. The present investigation was intended to explore the efficacy of new media-based video lectures in Open and Distance Education system of India. For this investigation a sample of 300 students was drawn from three Indian Open Universities viz., Indira Gandhi National Open University New Delhi, Vardhman Mahaveer Open University, Rajasthan and Uttarakhand Open University, Uttarakhand. The 100 students were selected randomly from each University. This research was focused on student's opinions about effectiveness of Video lectures which were watched on New Media Platforms either during their course of study or otherwise. In order to know the effectiveness of video lectures, a questionnaire consisting of 16 items were used. The questionnaire was designed to get responses about the duration of video lectures, their presentation format, the language used, and the mode of delivery of lectures. Data revealed that video lectures of short duration were more popular. Further the format containing the Presenter with PowerPoint presentation, integrated with Animations and Graphics format was more popular among respondents. As far as language was concerned, both English and Hindi were preferred equally by respondents. The mode of delivery of video lectures which was preferred was online and New Media (web) based. TV broadcasting was least preferred by respondents. The above findings indicated that an effective video lecture with duration of less than 15 minutes including Presenter with PowerPoint presentation integrated with Animations and Graphics format either in Hindi or English were more effective delivered through New Media (web) based platform.

Keywords: New Media, E-learning, Indian Open Universities, Open Distance Learning, Video Lectures.

Introduction

New Media is a combined network of all digital medium including Social media platforms. The New Media world opens the varied opportunity for users to explore different kinds of information and get connected through the utilisation of the Internet. The technology-based in New Media provides Rich resources of information and knowledge that could be very essential for learners or students. It continuously growing with different kinds of New Media like YouTube, Facebook, and WhatsApp, which have possible potential to enhance the quality of instruction in Open Distance education. Some basic features of New Media based video lectures could have a remarkable impact on the development of the teaching-learning process.

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As per the present scenario video lectures, based on e-learning has become more advanced (Sharma, 2018 and 2018a). In today's world students have become digital natives who are approaching to watch more digital content. It can be related to educational or something different. Social Media has a wide and great potential in learning skills especially the YouTube Platform. It has a wide range and abounds of learning aspects, which is yet to be fully explored. YouTube with a wide range of easily accessible, enhance instruction and increase the interest of users. With a variety of content, YouTube has become the most eminent e-video content provider and also the world's largest video sharing service. This study had been focused on exploring the factor of effective video lectures through New Media based system in mode of distance education learning. E-lectures provide flexibility, accessible on-demand, and most important, easy to access anywhere at any time (Chander & Sharma, 2003).

Literature

According to Choi, Kim, and Kim (2007), "E-learning systems deliver training materials synchronized or unsynchronized to multiple distant locations. They may be capable of providing training over the LAN, WAN, or Internet". As a generation of New Media technology-based learners, they use to Web-based medium to acquire the information. New Media based video lecture refers to video learning content through social media and mobile app-based platform.

Buzzetti and Nicole (2015) stated that the importance of the use of YouTube as an instructional aide and that use is consistent with the Cognitive Theory of Multimedia Learning which states that video is particularly effective at knowledge construction and memory building.

Murthy& Naraharisetty (2011) summarized the effectiveness of video-based lectures and voice-based presentations in terms of e-Learning content, Retention of learning, Ease of use, Satisfaction, Video quality, and Audio quality.They found that the duration of video lectures might be limited to a maximum of 20 minutes. A video lecture can be impactful with voice over also consist of text-based concepts along with some animated diagrams and graphics supplement with connected hyperlinks for more illustrations.

Nawaila & Bicen (2018) suggested that WhatsApp provided several benefits like it's a free application that can be easily affordable, a good source of entertainment, helps in relationship and communication, the source of information, cost-effective for E-learning and knowledge sharing.
Otto Peters (2001) summarized "The concept of open learning offers interesting opportunities for the further development of distance education, which can only be exhausted if teacher and students work out a new perception of themselves, and if learning and teaching in distance education is structured, arranged and organized differently so that it can be adapted flexibly to the different learning requirements of a very heterogeneous clientele".

Theoretical Background

At present in India, there are several university-based on distance education system i.e National University Indira Gandhi National Open University and 13 state-level Open Universities. There main goal is expansion of Distance Education. However, presently Odessa Open University is taking shape.Distance education has always been very accessible and flexible form of learning and teaching (Sharma & Garg, 2005). Open and Distance learning approach had a significant impact on learning and teaching. Distance education offered flexible learning via new media-based materials (Vyas, Sharma & Kumar, 2002; Kumar, Sharma & Vyas, 2003). The development in New Media has created a new trend of teaching and learning in distance education mode.

Multimedia-based E-learning provides Flexibility in program delivery and magnifies the content by focusing subject matter expertise that may not be available locally. In the main, video E-lecture provides “personalized and self-regulated” learning medium (Henz, Dologand, Nejdl, 2004). E-learning is the mode of training and education through digital communication technology to deliver knowledge. As we see Traditional face-to-face learning methods had their limitations; it was bounded with time and location, e-learning provides a significant learning environment for students. E-learning is a new approach for learning through telecommunication technology such as internet. Students can get benefit through getting information at any time and at anywhere. In order to understand the influence of E-learning on students and the intention to use E-learning system and the impact of using the system, recent studies designed different learning methods over various leaning systems (Chou & Pi, 2015).

New Media technology provides teachers with an opportunity to engage learners in the online classroom, as well as to support the development of learner skills (Kanioglu, Altinay, Dagli, Altinay, Soykurt, & Sharma, 2017). The Social media is basically organised in a manner that consist of individuals, communities, organizations, companies or classes in universities with similar interests, attitudes, values, vision, lifestyle friendship and learning objectives in the field of E-learning this structure can be used in many ways and through a number of tools (Anaraki, 2015). For advance learning educators must seek out new and old teaching and learning theories for providing best and meaningful education to the learners. In this new era of e-generation New Media is clearly proving to be a significant technological revolution. It is creating a significant motion as a dynamic content provider and interactive media indeed revolutionizing the world of communication.

YouTube is a useful medium for E-learning because of its free and can be used to promote and support education, while viewers can also rate the video’s content and quality as well as gives feedback about the content in the comment box. YouTube provides the facilities to create its video channel that can be Educational, Entertainment, and Informative, etc. YouTube plays a significant role in E-learning that can be taught visually. But from video point of view the video production is not being able to produce videos integrated with textual content, slideshows, quizzes, etc. YouTube has a large variety of audio video content on every subject. This thing makes the YouTube popular among the students. YouTube provides a modern LMS platform, such as Moodle, make it easy to embed its videos in your e-learning courses. It is a strong platform to deliver video lectures to students. YouTube has a large variety of audio-video content on every subject that makesit easy to embed its videos in your E-learning courses.

In today’s world, the use of technology is very frequent. Technology related to mobile is using frequently in online instruction in universities worldwide (Jimoyiannis, Tsiotakis, Roussinos, & Siorenta, 2013). Information and communication technologies shared between online students through social networking on mobile tools promote opportunities for online cooperation and collaboration.
WhatsApp is the online application that offers the facility of instant messaging with online collaboration and cooperation between online students connected from school or home on mobile. It is a free online application that is easy to access by the society. It provides the option to create the Group on WhatsApp for instant messaging, that can share learning objects easily through photos, videos, audios with number of people in that group. WhatsApp also has a feature of video calling, which can be used for a live session or a live class. Through WhatsApp instant massaging E-learning information and knowledge can be easily constructed and shared.

In the current scenario video lectures and it's delivery mode should be effective than only the New Media dimensions E-learning will be progressive. This research was conducted to explore the effectiveness of New Media based video lectures which were already available on New Media platforms i.e. YouTube, WhatsApp, Facebook, etc.

Methodology

Research Model/Design

The present study was focused on the efficiency of New Media based Video lectures in open and distance education of India. The study was based on the Survey method and conducted through the Questionnaire.

Data Collecting Tools

In this study to find out the opinion of the students, the Survey-based method has been used. The questionnaire has been developed which consists of 16 items of 'Yes' and 'No' based rating. All Items covered within four domains. viz., 01. Duration of video lectures, 02. Presentation Format, 03. Language and 04. Mode of delivery of video lectures. All four domains indicate to effectiveness of video Lecture. The subjects were asked to rate their opinion on each question. To find out the effectiveness of video lectures in different domains, the Questionnaire was crafted with 16 different questions covering four domains of video lectures. The subjects selected from three India Open Universities were presented the questionnaire and asked to give their response to each question. The responses obtained on each question of the questionnaire were calculated in percentage form and then analyzed.

Sampling or Study Group

There are 14 State Indian Open Universities and One National Open University. These Universities have a large number of students. The Study was delimited in three Indian Open Universities which were Indira Gandhi National Open Universities, New Delhi, Vardhman Mahaveer Open University Kota, Rajasthan, and Uttarakhand Open University Uttarakhand. Students of these three Indian open universities were chosen as Population of this research. For this study random sampling has been used for selecting the samples. 300 students were drawn as samples from these universities. The 100 students were selected randomly from each University those belonged to PG, PG Diploma, Graduation, Diploma and Certificate Programmes. The data were gathered from the contact classes, counseling program camps, and practical camps at University's study centers.

Data Analysis

1. <u>Video Lectures are easy to access at any time and everywhere</u>

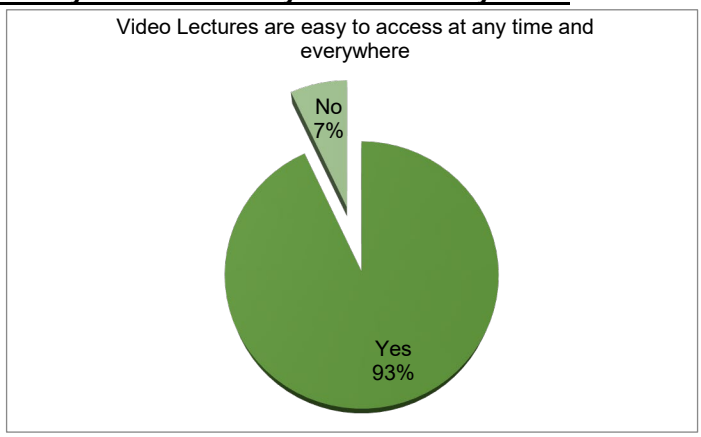

Figure-01

On item 1, 93% of total students accepted that the Video Lectures are easy to access at any time and everywhere while 7% of students denied it.Figure 01 indicates the same.

2. Video lectures are effective in Open Distance Learning

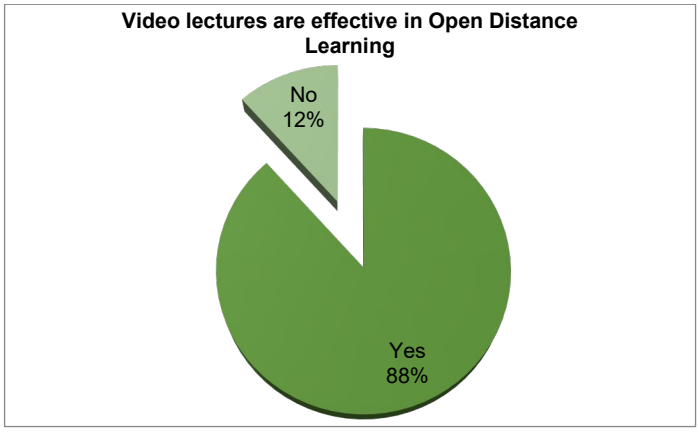

Figure-02

The fig. 02 shows that 88% of the total students agreed with the item 02'Video lectures are effective in Open Distance Learning,' but 12 % of students were not agreed with this item.

Domain -01 Duration of Video Lectures

3. Duration of effective video lecture should be less than 15min

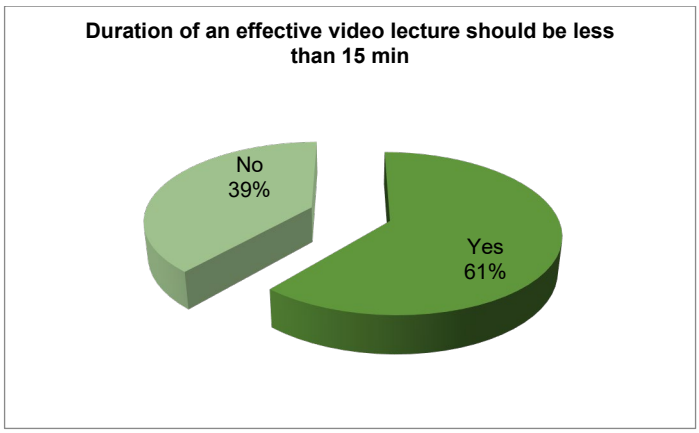

Figure-03

The Pie-Chart-03 depicts that 61 % of students accepted the effectiveness of the Video lectures,which are of less than 15 min, but 39% did not accept the same.

4. The duration of an effective video lecture should be 16 to 30 min.

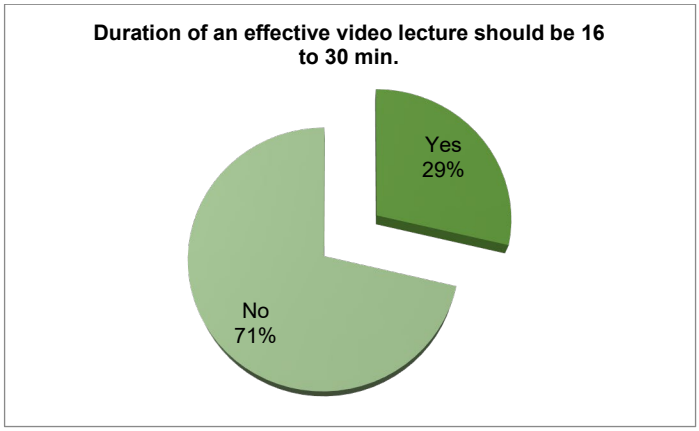

Figure-04

On this item, the71% of students are not agreed with the duration of an effective video lecture of 16 to 30 min., while29% of students accepted that the duration of an effective video lecture maybe 16 to 30 min (Pie Chart 04).

5. The duration of an effective video lecture should be more than 30 min.

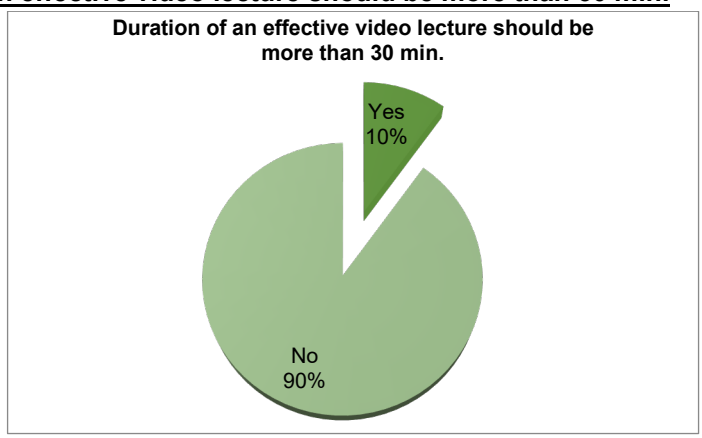

Figure-05

Figure 05 shows that 90% of students refused to acceptthedurationof effective video lecture should be more than 30min. Whereas 10% of students liked that the duration of video lectures should be more than 30 min.

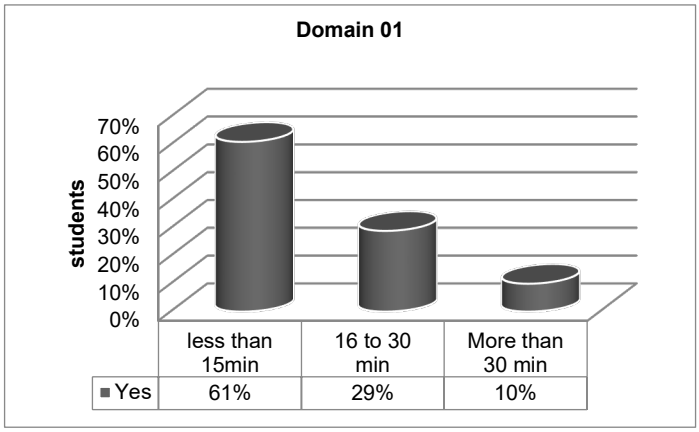

Figure-06

Figure 06 shows that 61% of students liked to less than 15 minutes of duration video lectures. 29% of students said 'Yes' to 16 to 30 minutes duration's video lectures. Only 10% of students showed an interest in more than 30 minutes duration of video lectures.

Domain -02 Presentation Format of Video Lectures

6. Only Presenter based video lecture format

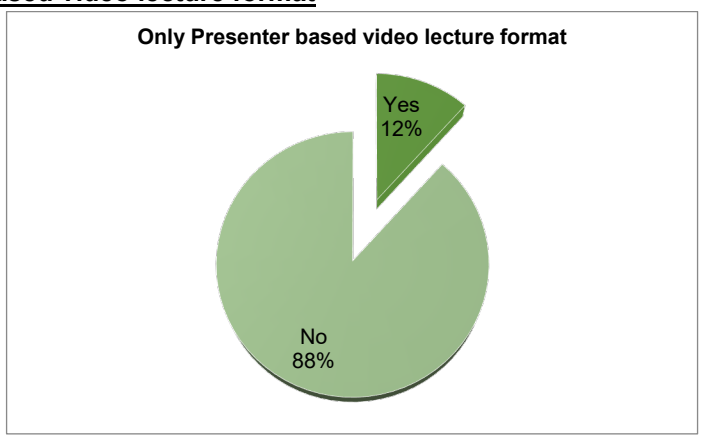

Figure-07

Above pie chart (Figure-07) shows only 12 % of students liked to see the 'only Presenter based video lectures,' and they feel this format is effective for video lecture teaching on another hand 88% of students did not like to see the 'only presenter based video lectures'.

7. Voice Over+ PPT based video lecture format

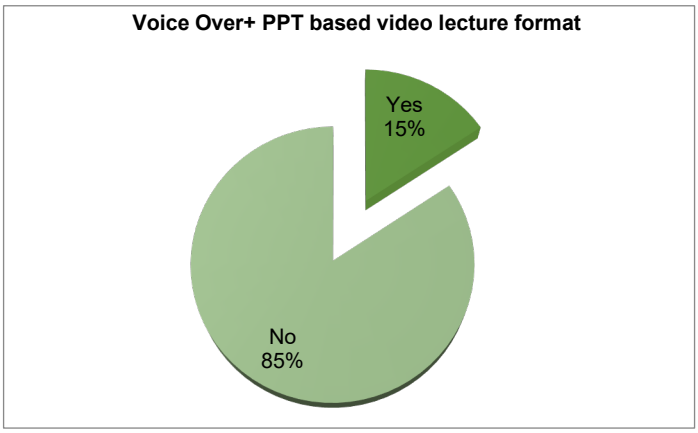

Figure-08

Chart08showsthat85% of students do not like to watch the format of Voice-Over + PPT based video lectures; instead, they like the old format. However,15% of students liked it and said that this format could be more effective for distance education learning.

8. Presenter+ PPT+ Animation+ Graphics based video lecture format

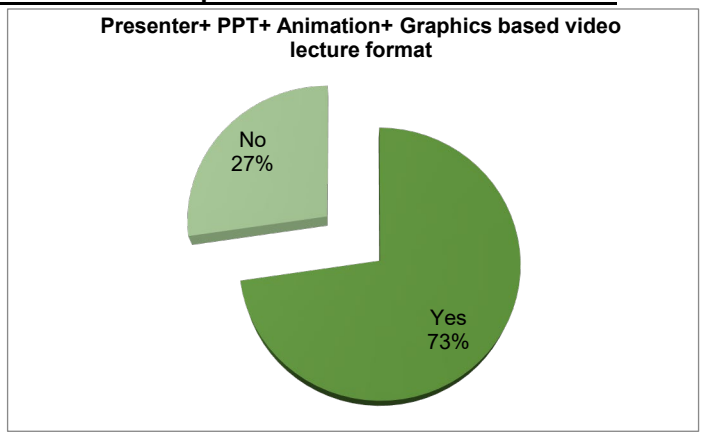

Figure-09

The 73% of total students liked 'Presenter+PPT+Animation+Graphics based video lecture format'and said it is effective for open distance learning, (item 8 and fig. 09). However, 27 % of the students did not agree with this format for distance learning.

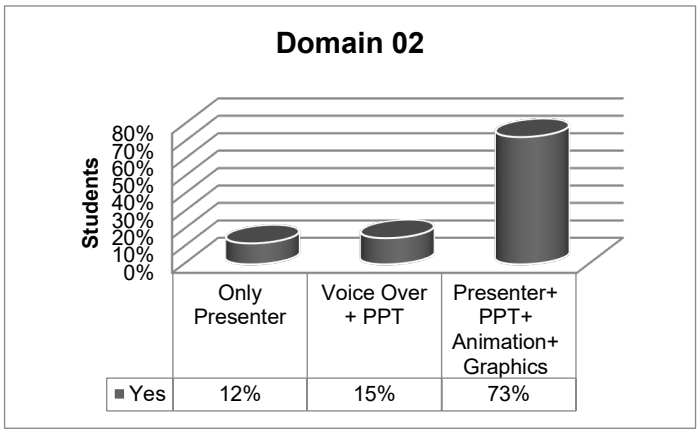

Figure-10

Figure 10 indicates that 12% of students liked "Only Presenter" based video lectures, and 15% of students showed their interest in "Voice Over+ PPT" based video lectures. 73% of students liked to "Presenter+ PPT+ Animation+ Graphics" based video lecture format for ODL.

Domain -03 Language of Video Lectures

09. English Language-based video lectures

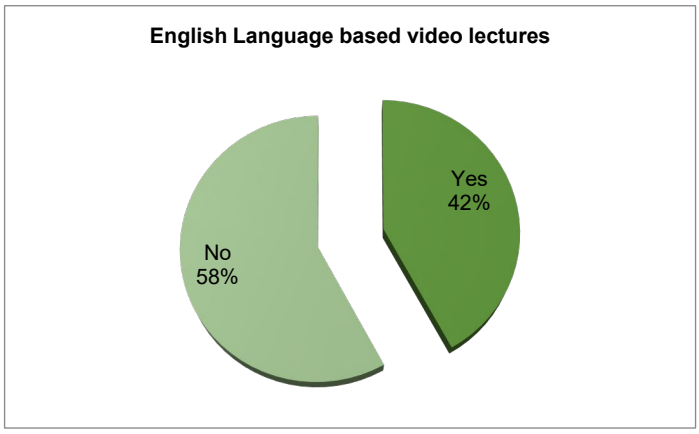

Figure-11

The pie chart 11depicts the opinion of distance education students on item 9. The 42% of students opined that the English language-based video lectures are effective for distance e-learning while 58 % of students said No for the English language based video lectures.

10. <u>Hindi Language-based video lectures</u>

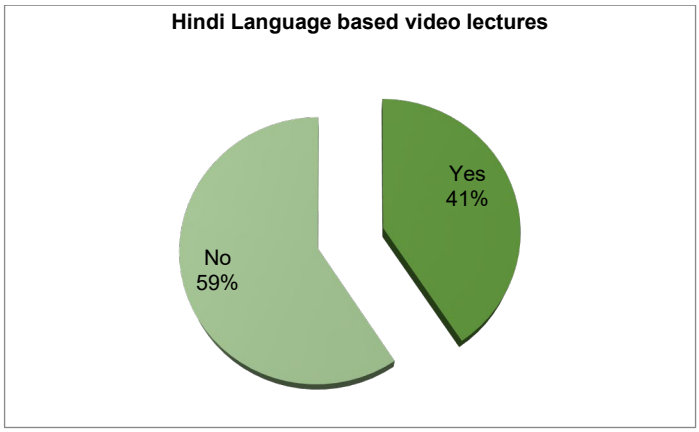

Figure-12

For the Hindi language-based video lectures, 41% of students gave their opinion in 'Yes' and said such lectures would be effective in Open Distance learning. While 59% of students were not agreed (chart 12 and item 10) with this.

11. Regional language based video lectures

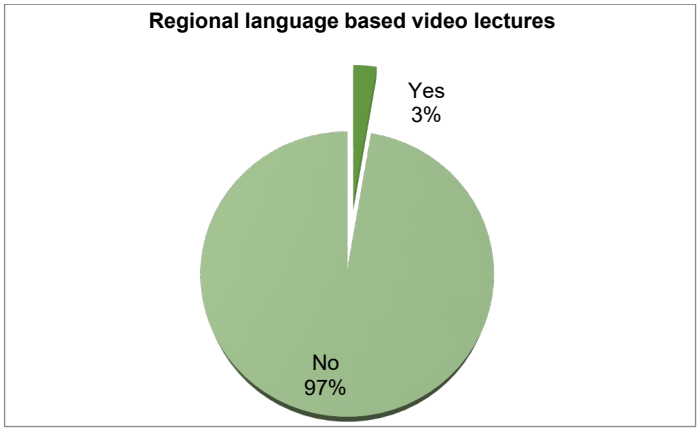

Figure-13

Fig. 13 depicts that only3% of students like to e-learning in the Regional language,while 97% of the total students did not like to watch regional language-based video lectures for e-learning.

12. The Bi-Lingual (English & Hindi Mix) language-based video lectures

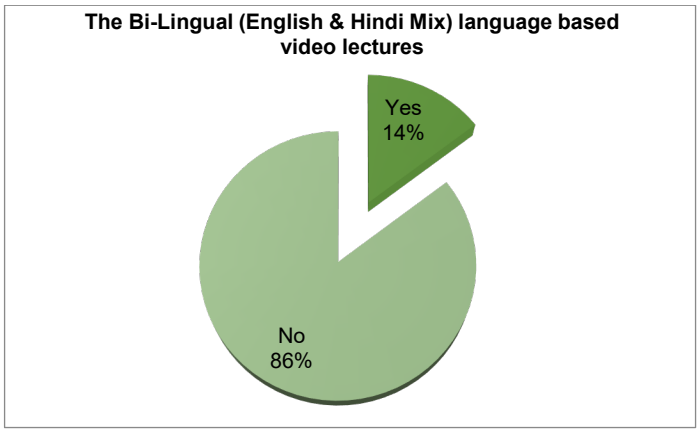

Figure-14

On the item of Bi-Lingual language-based video lectures,15% of students were agreed and said 'yes' it is effective (fig. 14). But 85 % of students opined that such videos arenoteffectivefor open distance e-learning.

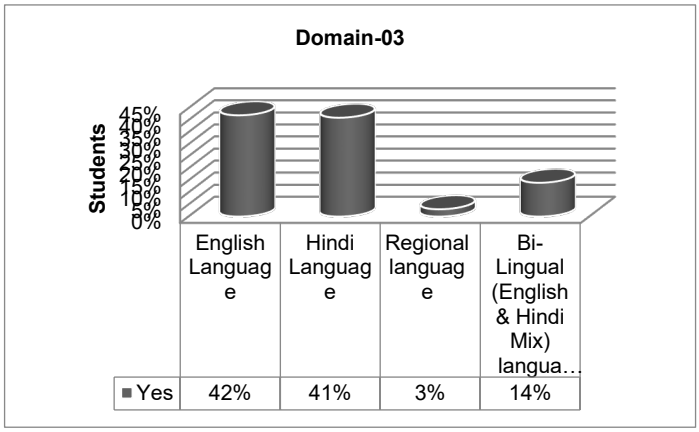

Figure-15

In Figure 15, 42 % of students liked English language-based video lectures. 41% of students agreed that the Hindi language-based video lectures are effective in ODL.Only3%of students supported to Regional Language-based VL. The rest of 14 students accepted Bilingual language-based video lectures.

Domain-04 Mode of Delivery of Video Lectures

13. The Mode of delivery of video lecture should be Online and Web-based

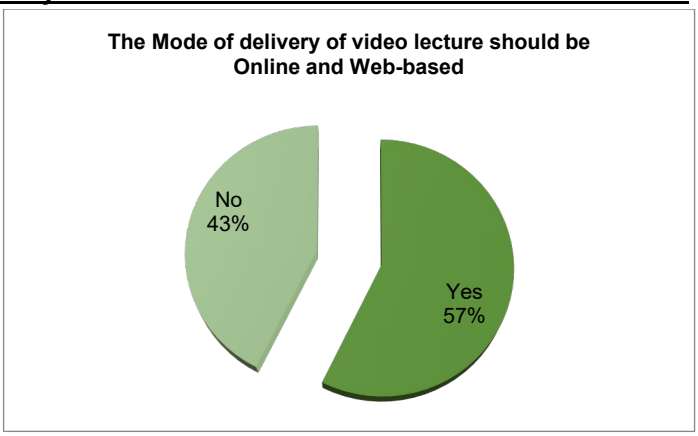

Figure-16

The mode of delivery of video lectures plays an important role in distance education learning. 57% of students liked and preferred to learn from web-based or online-based video delivery,andthey agreed that the mode of video lectures delivery should be online or web-based. 43% of students did not agree with this (fig. 13).

14. The Mode of delivery of video lecture should be Offline CD/DVD or Storage Device based

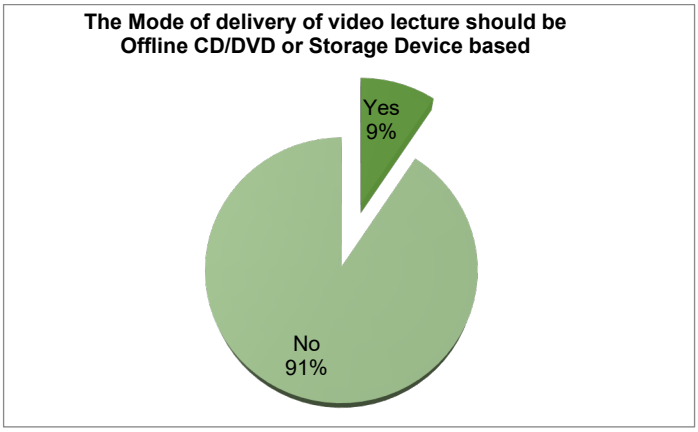

Figure-17

91% of students did not prefer the CD/ DVD or storage based like Pen-drive or memory card, based video lectures delivery mode for distance learning on the other hand9% of students were agreed that this format could be useful as shown in below the fig. 17.

15. The Mode of delivery of video lecture should be TV Broadcasting based

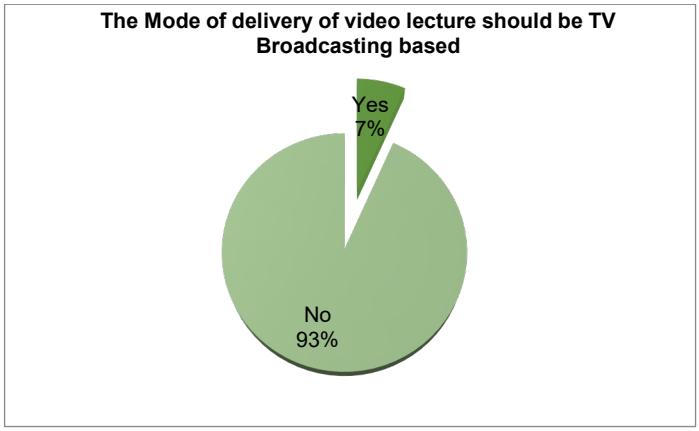

Figure-18

Pie-chart 18 indicates that 93% of students majority rejected the TV broadcasting mode for Video lectures study in Open-distance education. Only 7 % of the students showed their interest in this format.

16. The Mode of delivery of video lecture should be Mobile or Android App-based

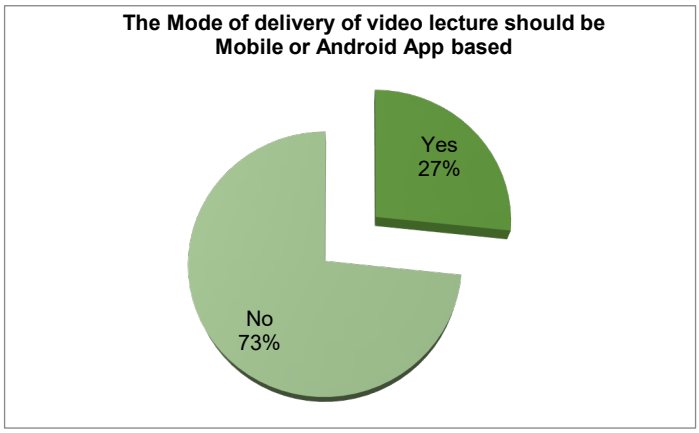

Figure-19

Mobile app technology is growing fast in New Media technology and spreading worldwide. But many people are not aware of app-based video lectures available in the New Media.As depicted in the fig.19, 27% of students of open distance education liked to watch video lectures on the mobile app,but73% of students said No for this.

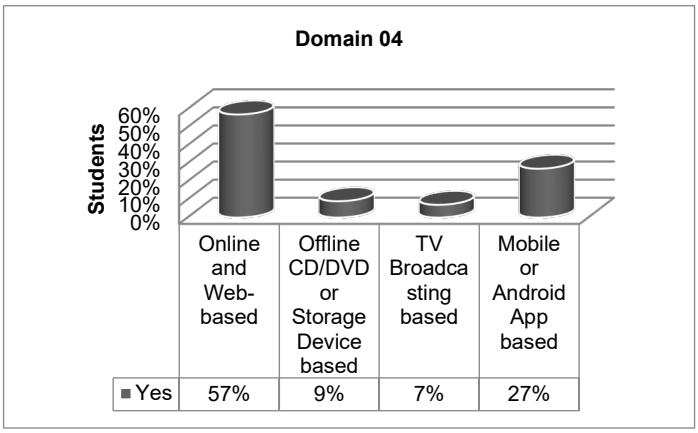

Figure-20

Figure 20 is showing that 57% of students liked Online and Web-based video lecture delivery format. 9% of students showed interest in Offline CD/DVD or Storage device based delivery format. Only 7% of learners liked to watch video lectures through TV Broadcasting based delivery format. 27 % of students agreed that the mobile app-based video lecture delivery format is effective for E-learning.

Findings and Discussions

The results of this study reveal that more than 90% of students agreed that New Media based Video Lectures are easy to be accessed at any time and everywhere. While more than 80 % of the students said that Video lectures are effective for Open Distance Learning.

The research is focused on Fourdomains of New Media based teaching video lectures, viz., Duration of VL (Video Lecture), Format of VL Presentation, Language of VL, and Mode of delivery of VL, hence we will discuss the results obtained on these domains.

Domain 01

Duration of Video Lecture-The The result on this domain shows that more than 60 % of students like to watch video lectures which are of less than 15-minute and they agreed that the duration of this period is effective in Open distance education. Some students (29%) also like the video lectures of 15 to 30-minute. However, very few students(10%)opined that more than 30-minute video lecture could be useful for open distance learning. There has conducted some researches that learners have shorter attention spans than previous generations. However, there is little evidence to support this claim. Bligh's What's the Use of Lectures? (2000), McKeachie's Teaching Tips (2002), and Sousa's How the Brain Learns (2006), all suggested that students' attention spans decrease after a short time and recommend breaking up lectures into 10-to-15- minute duration sections.This study concluded that the Video lectures of less than 15 minutes duration are more effective in Distance Learning Education.

Domain 02

Video Lecture Presentation Format-The result obtained on this domain reflects that 73% of the students likethe format of 'Presenter+ PPT+ Animation+ Graphics' based video lectures while 16% of the respondents agreed with 'Voice Over+ PPT'based and only 11% of the respondent like 'Presenter' based video lecture format. According to some researchers in studies that adhering to basic principles of graphic design and visual literacy can be helpful to an effective video lecture. There are some indications that the visual design of multimedia learning materials directly impacts student learning

(Kumi, Conway, Limayem, & Goyal, 2013; Plass, Heidig, Hayward, Homer, & Um, 2014).Any PPT or slide presentation created for a video lecture should incorporate Graphics and Animations to in it. In the PPT or slide presentation should be a background and font color that have high-value contrast increases readability. The Present study also found that the students liked most Animations and Graphics with bundle of Presenter and PPT based video lectures.

Domain 03

Language of Video Lectures- The participants are found to be more positive with the English and Hindi language-based video lectures. More than 82% of students gave their positive verdict in favor of English and the Hindi Language-based video lectures. The 17% Learners did not take much interest in regional language and Bilingual (Hindi and English mixed) language-based video lectures. The Learners agreed that either Hindior English language-based video lectures could also be effective for distance education-based learning.

Domain 04

Mode of Delivery of Video Lectures-The major difference between the newer digital learning platform (i.e., New Media based) and the traditional video learning platform (i.e., TV Broadcasting) is learners' involvement. Now the days the Learners have shifted to New Media based Platform, and the results of the study also show the same things. More than 57% of learnersopinedthat the 'Online and Web-basedvideo lectures delivery Mode' is more effective for the opened distance education students. Mobile-based technology is flying on a technological cloud; per day, it has a new chapter with new add- on services. More than 27 % of students want to use a mobile app-based platform for video lectures. Now the learners have moved from TV broadcasting based learning platform to New Media platforms. Only 7% of students want to learn from TV broadcasting video lectures. 9% of students want to DVD or storage device based delivery of video lectures.The research concluded that newmedia-based video lectures are effective in ODL (Open Distance Learning) system but need to be focused on some criteriarelated to new media video production. Along with that, need to be spread to new media technology awareness.

Conclusion and Suggestions

Data revealed that video lectures of less than 15 minutes duration were more popular and liked more by students. Further, the format containing the presenter with powerpoint presentation, integrated with Animations and Graphics format was more popular among students. As far as language was concerned, both Hindi and English based video lectures were liked equally by respondents.The mode of delivery of video lectures which was preferred was online and web-based. TV broadcasting was least preferred by respondents. The above findings indicated that an effective video lecture with duration of less than 15 minutes including Presenter with Powerpoint presentation integrated with Animations and Graphics format either in Hindi or English were more effective delivered through web-based platform. Indian Open Universities Students gave their verdict in favor of short duration video lecture integrated with format of Presenter including PowerPoint, Animations, and Graphics either in Hindi or English were effectively delivered via New Media (Web) based (YouTube) Platform.

Indian Open Universities need to create a model for New media-based video lectures in terms of Duration of video lectures, Presentation Format, Language, and Mode of delivery of video lectures.They also need to require knowing the path of maximum utilization of produced video learning material.New Media based technology is offering a pedagogical path to all students who want to gain knowledge through distance learning. To the way conclusively, it can be interpreted that the use of New Media based technologies at open Indian universities have a wide scope but a long way to go.

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New Media Interventions at Open Universities in India

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Abstract:

New Media has bridged the gap between teachers and learners in distance education. Distance education has shifted to new way of instructional delivery through new media technologies. In this study researcher examined the status of utilization of New Media Technologies in Indian Open Universities. Fifteen Indian Open Universities (IOUs) were studied including 14 State Open Universities and one National Open University. Researcher investigated New Media technologies of IOUs which consist of E-SLM, Audio Channel, Web Radio Channel, TV Broadcasting Channel, Web Based Video Channel, Social Media and Mobile Apps. It was found that 80% of IOUs are providing E-SLM, 33% of IOUs are telecasting learning support materials via Radio Channels. 53% of IOUs have own web Radio Channels. 27% of IOUs are broadcasting of study materials via TV Channels. 73% of Indian Open Universities have web based Video Channels (YouTube). 60% of IOUs are using Social Media platform for student learning support. 33% of IOUs have developed own Mobile Apps. Further it was observed that although more than 50% IOUs are using New Media technology but in order to make it more effective, IOs need to develop a strong system of distance education equipped with new media. This research provides a platform to find out the status of New Media adopting by IOUs.

Key words: Indian Open Universities (IOUs), New Media, E-Learning, Open Distance Learning (ODL).

INTRODUCTION

New Media is an internet based medium which provides e-learning material through various digital channels. The New Media is used to define in all content related to the internet and the interplay between technology, images and sound. In fact, the definition of new media is dynamic, thus frequently changes occurs in definitions. In a broader sense New Media include internet such as websites, online newspapers, blogs, or wikis, video games, CD-DVDs, mobile app, social media, electronic digitised materials like, e-books, e-slm (Self Learning Material) etc.

New Media has been viewed as "new media" which are digital, often having characteristics of being manipulated, networkable, dense, compressible, and interactive (Flew 2008).

New media refers to "those digital media that are interactive, incorporate two-way communication and involve some form of computing" (Logan, 2010). However New Media does not include television programs (only analog broadcast), feature films, magazines, books, or paper-based publications unless they contain technologies that enable digital generative or interactive processes (Manovich 2003).

Social Media is a part of New Media which consists of YouTube, Facebook, Twitter, LinkedIn, Google+ or similar other web based services, facilitating group interaction. In present era New Media has penetrated in all geographical regions. New Media has been playing pivotal role in the area of Education. It provides interactive e-learning platform for learners, facilitating instruction and strengthening teaching and learning process. Presently, many educational institutions are extensively using New Media platform for teaching and learning. As a result of development of New Media creative changes took place in non-formal education system in 21st century and contributed in developments in e-Learning system. E-Learning has gained popularity worldwide (Sharma and

Mishra 2007). ODL system provides students an easy access of education at their doorstep. It bridges the gap between formal education and drop out learners. At present many Educational Institutes, Universities are widely using e-video learning through New Media. New Media technology became a newest pedagogical path for Open Distance Learning. The capacity to provide education using multisensory approach makes New Media based learning system is equally beneficial to normal as well as exceptional learners (Blind, deaf, dumb, gifted, and creative) etc. New media promotes involvement and participation in learning.

ODL has established its roots in the as a form of instructions at least 150 years ago as correspondence study. The University of London was the first university to offer distance learning degrees, establishing its external programme in 1828. The background to this innovation lay in the fact that the institution (later known as University College London) was non-denominational and, given the intense religious rivalries at the time, there was an outcry against the "godless" university. The issue soon boiled down to which institutions had degree- granting powers and which institutions did not (Rothblatt, et al., 1988).

Otto Peters observed that open and distance learning methods have had a major impact on teaching and learning. He emphasised on "Lifelong Learning" through the spectacular use of New Media. He summarized *"The concept of open learning offers interesting opportunities for the further development of distance education, which can only be exhausted if teacher and students work out a new conception of themselves, and if learning and teaching in distance education is structured, arranged and organized differently so that it can be adapted flexibly to the difference learning requirements of a very heterogeneous clientele"* (Peters, 2001).

The digital information and communication development have created a new trend of Teaching and Learning. The

further development of Personal Computer (PC) and Multimedia have enhanced the facility to store the information and reproduce it as and when needed in a minimum time period. It also provides interactive learning programmes by means of various softwares. It creates a channel for larger and more extensive databases and their connection to international global digital information networks. The improvement in telecommunication through the audio video technology is not just a technological development, but it is a new pedagogical innovation. Otto Peters has found general structural advantage of development of technology for ODL. The distance between teacher and students which is constitutive for distance education, turns into virtual proximity, diversions presented in writing are replaced, where necessary, by the oral form , dead letters give way to the live voice of teachers or participants, and the rigid, time delayed sequence in the articulation of learning and teaching process makes way through the audio-video conferences. Distance education has always been a very flexible form of learning and teaching (Peters, 2001).

Further Otto Peters (2001) has suggested a virtual-distance-education model, the flexibility of which can be enhanced by Internet-based learning. He puts forward "One important factor is the increased speed of communication, which reduces the turnaround time of assignments to be assessed, improves the cooperation of all members of the learning projects and the universities, and strengthens the ties to students, especially to those living far away in all parts of the world." As a result of advancements of telecommunications technologies, distance learning programs have become more easy and effective. Distance education can be now defined as "the acquisition of knowledge and skills through mediated information and instruction, encompassing all technologies and other forms of learning at a distance" (Peters, 2001). The distance education offers flexible learning through online new media based materials. Distance education courses are

designed for these students who are unable to attend classes on regular basis in campus or who are not getting education due to other reasons. New Media provides more than one of the study options to students through ODL.

Despite of wide use of new media in whole teaching and learning process, very less number of research studies have been conducted, it's considering pedagogical aspects. As Mendels (1999) found that *"researchers have so far overlooked the thorny details of what is involved with online pedagogy, while extolling the educational potential of technology"*.

Brown (2000) describes the important feature of web-based learning as a new powerful fabric for learning cross-pollination of ideas cross-linked interest groups, both real and virtual, form a rich ecology of learning". As he observed the web-based learning process is constantly developing, largely self-organizing and forming a creative way, which has a feature of cross-pollination of learning.

Zhang, Zhao, & Zhou (2004) in this extensive study on "Can e-learning replace classroom learning?" concluded that traditional classroom education or training does not complete the need of the present world's lifelong learning. Learning is shifting from instructor-centeredness to learner-centeredness, and is moved from classrooms to homes and offices. E-Learning, referring to learning through the Internet provides people with a flexible and own respectively way to learn. It is provides opportunities learning-on-demand and reduces learning cost. E-Learning now a days has created a far-reaching impact on learning in the new millennium.

Pathak & Chaudhari (2005) proposed collaboration between students and teachers to produce more effective e-lectures. The investigation was set up involving five lecturers for five hundred students in a technological university in Singapore. Teachers recorded their lectures through customized software. Teachers seemed to be more preoccupied with their body language, facial expressions and trite organization.

Students seemed to focus on voice and the matter on the slides and did not mind a rather repetitious delivery. As researchers concluded The effectiveness of e-lectures in Asian education would largely depend on the extent to which the teachers are able to address the students concerns. To achieve this, the teachers would also need to enhance their awareness of the new medium.

The study by Kumar and Sharma (2006) was focused on accessibility to various media; media use profile, views on usefulness of media, impact of media on their learning activities, problem faced in the use of media and suggestions for improving the utilization of media in distance education. Investigators found that computer and internet were preferred by students in distance education. Researchers explored the problems faced in the use of electronic media like audio video cassettes/ CDs of different courses are generally not available. Timing of teleconferencing did not suit to learners, Non-receipt of schedules of radio counseling and programs, access of internet at the study centers is mostly not available and non-availability of trained manpower to operate various media etc. They concluded that "*distance education has been accepted by nearly all segments of society; ranging from eighteen-year-old student to a service man, who is nearing his retirement, 10th class pass learners to Ph.D. holders. Open universities have been successful in their endeavor of making learning a lifelong activity". The* study found that the trend in media use by the learners were not very encouraging state of affair, none of the media were used by more than half the learner's population.

Murthy & Naraharisetty (2011) investigated the effectiveness of video-based lectures and voice-based presentations in terms of e-Learning content, retention of learning, Ease of use, Satisfaction, Video quality and Audio quality. The study followed the video-based lectures to make learning more interesting, fun, and effective in task accomplishments. Researchers conducted the survey with the

Master of Science in Information Technology (MSIT) program's students. The knowledge component of the course was delivered to the learners as video-based lectures and presentations with voice-overlay. These become learning support materials to the learners in accomplishment of their tasks. They observed that length of video lectures may be limited to a maximum of 20 minutes. Video lectures can be effective with voice over and also consist with text-based concepts along with animated diagrams and graphics supplemented with connected hyperlinks for more examples, illustrations.

Open and Distance Learning (ODL) system wherein teachers and learners need not necessarily be present either at same place or same time and do not require classroom (face to face) teaching and is flexible enough in regard to modalities and timing of teaching and learning. The admission criteria are also flexible without compromising necessary quality considerations. ODL system in India consists of one national university, Indira Gandhi National Open University (IGNOU) and 14 State Open Universities (SOUs) including Odisha State Open University. (The name Odisha State Open University has not mentioned yet in MHRD and DEB websites).

New Media has multiple approaches for distance learning. It is cost effective and easy to access for every student. It has international and multisensory approach. It provides many facilities for e-learning like live online sessions which give immediate feedback with results. New media technology is offers an intensive platform to students of ODL system. Given below the benefits of New Media based Audio Video Lectures.

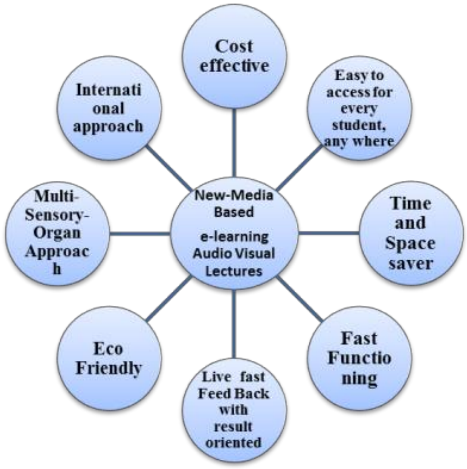

Figure 1: Benefits of New-Media based e-learning Audio Visual Lectures

METHODOLOGY

The present study was focused on finding out present status of use of New Media based technologies at different Open Universities of India. The study involved mainly internet based New Media Technologies. Although most of the Open Universities in India have embraced New Media technologies, in various ways a uniform New Media-based platform is not introduced as yet.

The research was intended to find out answer to the following research questions:

Q.1. What is the status of E-SLM in Indian Open Universities?

Q.2. What is the status of Audio Channel being used by Indian Open Universities?

Q.3. What is the status of Web Radio Channel webcasting by IOUs?

Q.4. What is the status of Educational Programme's TV Channel broadcasting by IOUs?

Q.5. What is the status about You Tube channels being used by IOUs.

Q.6. How many IOUs are using broadcasting Channel and YouTube Channel both?

Q.7. To what extent Social Media is utilised by IOUs?

Q.8. How many IOUs are using Mobile apps?

In present study researcher used website based New Media information of all 15 Open Universities of India. New Media Technologies which were considered for present study are as below:

1. E-SLM : Any digitized text content
2. Audio Channel: refers to any radio transmission.
3. Web Radio: website based audio channel.
4. TV Broadcasting channel: refers to TV Channels.
5. YouTube channel: Universities having own YouTube based Video Channel.
6. Social Media: Universities having Facebook, Twitter, Google+ etc. page.
7. Mobile Apps: Universities having own mobile app.

DATA COLLECTION

14 State Indian Open University and One National Open University (IGNOU) were selected for data collection for this Research.

URL of Indian Open Universities considered in present research.

www.braou.ac.in
www.vmou.ac.in
www.nalandaopenuniversity.com
www.ycmou.digitaluniversity.ac
www.bhojvirtualuniversity.com
www.baou.edu.in
www.ksoumysore.edu.in
www.wbnsou.ac.in
www.uprtou.ac.in
www.tnou.ac.in
www.pssou.ac.in

www.uou.ac.in
www.kkhsou.in
www.osou.ac.in
www.ignou.ac.in

The major finding of the research as per the pre-defined criteria has been presented below in the given table:

SN	Indian Open University	E-SLM	Audio Channel	Web Radio	Video Channel	Web Video Channel YouTube	Social Media	Mobile App
1	Dr B R Ambedkar Open University, Hyderabad (1982)	No	No	No	Yes* *DD Saptagiri & Gyandarshan Channel	Yes* *BRAOU- But only one video uploaded	No	Yes* * i-vidya
2	Vardhman Mahaveer Open University, Kota (1987)	Yes	No	Yes	No	Yes* *vmouonline	Yes* * Facebook Twitter Linkedin, Google+	Yes* *vmou online
3	Nalanda Open University, Patna (1987)	No	No	No	No	No	No	No
4	Yashwant Rao Chavan Maharashtra Open University,Nasik , Maharastra (1989)	Yes**e-books	No	Yes* Yashvaani YCMOU	No	Yes* *YCMOU	Yes* *Facebook *Google+	No*
5	Madhya Pradesh Bhoj (Open) University, Bhopal (1991)	Yes	No	Yes* Bhojvaani	Yes* *Video Lectures Telecast via Edusat	Yes* *Bhoj Darshan	No	No
SN	**Indian Open University**	**E-SLM**	**Audio Channel**	**Web Radio**	**Video Channel**	**Web Video Channel YouTube**	**Social Media**	**Mobile App**
6	Dr. BABA SAHEB AMBEDKAR Open University, Ahmadabad (1994)	Yes**Jyotirgamya	No	Yes* *Swadhyay	No	Yes* *Swadhyay web-TV	Yes* * Facebook Twitter	Yes* 4 types 1.info@baou 2.courses@baou 3.studycentre@baou 4.iwanttostudy@baou
7	Karnataka State Open University,Mysore (1996)	Yes**e-books	Yes* *Gyanvaani FM-105.6MHZ	No	No	No	No	No
8	Netaji Subhash Open University, Kolkata (1997)	Yes	Yes* * Gyanvani Programme	No	No	Yes* *NSOU-Audio-Visual Resources	No	No
9	Rajarshi Tandon Open University,Allahabad, UP (1998)	Yes	Yes* but not working	No	No	Yes* *UPRTOU Allahabad But only Cultural Videos Available	Yes* *Facebook Twitter	Yes* *UPRTOU
10	Tamil Nadu Open University, Chennai (2002)	No	No	Yes* *TNOU	No	No	No	No
SN	**Indian Open University**	**E-SLM**	**Audio Channel**	**Web Radio**	**Video Channel**	**Web Video Channel YouTube**	**Social Media**	**Mobile App**
11	Pt. Sunderlal Sharma Open University, Bilaspur (2005)	Yes	No	No	No	Web broadcast icon available but not working	Yes* *Twitter	No
12	Uttarakhand Open University, Haldwani (2005)	Yes	Yes* *91.2FM	Yes* *Hello Haldwani	Yes* *Gyandarshan	Yes* *uouonline	Yes* *Facebook Twitter Linkedin Google+	No
13	Krishna Kanta Handique Open University, Guwahati (2005)	Yes**E-BIDA	Yes* *AIR-Ekalvya Programme	Yes* *JANAN TARANGA community	No	Yes* KKHSOU	Yes* *Facebook, Google+	Yes* *SMART KKHSOU

				Radio				
14	Odisha State Open University, Sambalpur	Yes	No	Yes* *Prayanvani web radio	No	Yes* *Info OSOU	Yes* *FacebookTwetter	No
15	IGNOU, New Delhi	Yes	Yes**Gyanvani	No	Yes* Gyandarshan	Yes* *E Gyankosh	Yes* *Facebook,Twitter	No

DATA ANALYSIS

Use of New Media in Open Universities in India

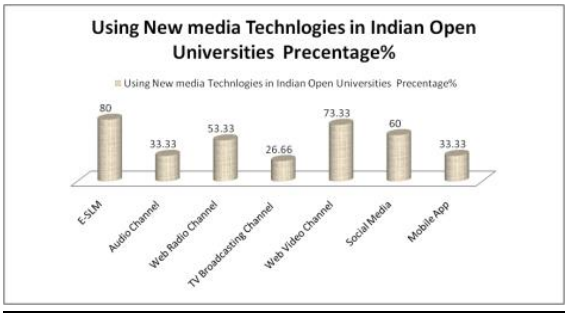

Figure-02

Analysis of the data obtained indicates that majority of IOUs (80%) are providing E-SLM only 20% IOUs have not developed any such mechanism. Around 33% of IOUs are using audio channels like FM or Community Radio. 53% of IOUs are using Web Radio while 27% of IOUs are broadcasting videos for distance learning purpose. YouTube Channel was found very popular medium for video webcasting. 73% of IOUs are having own YouTube channels. 29% IOUs are using both broadcasting and webcasting. 60% of IOUs are active on social media, having their social media web page. 33% of IOUs have developed their own mobile apps.

E-Self Learning Materials

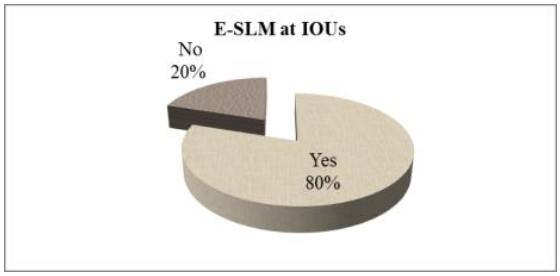

Figure-03

As above figure 03 indicates to 80% of IOUs are providing E-SLM to students. Only 20% of IOUs have no such E-SLM on their websites. E-SLM refers digitized study materials like e-books, e-papers, question banks etc.

Audio Channel

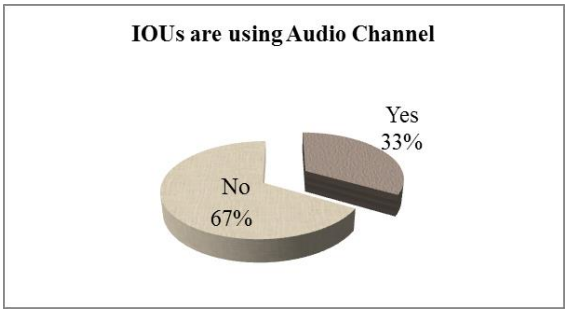

Figure-04

As the above figure shows Indian Open Universities are using only Gyanvani FM and AIR FM or Community Radio to facilitate the students. As indicated in above figure-04, 33% of Indian Open Universities are using Digital Audio Channels. 67% of IOUs have no such facility.

Web Radio Channel

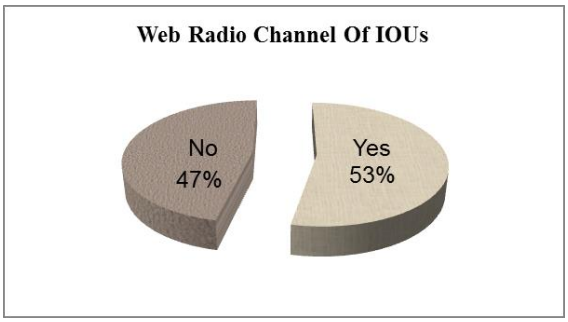

Figure-05

Web Radio is a new intervention in radio field. Web radio is an internet based platform to educate the students. 47% of Indian Open Universities are using web-radio but 53% of IOUs have no such facility.

Video Broadcasting

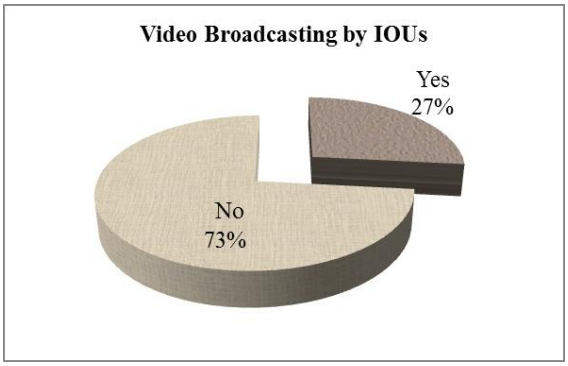

Figure-06

As above figure 06 shows that 29% of IOUs have Video Broadcasting technology for distance learners where as 71% of IOUs have not such facility to cater the need of learners.

Web Video Channel

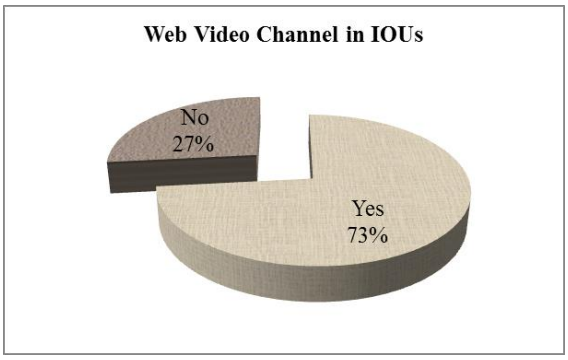

Figure-07

Data obtained indicates that 79% of Indian open universities have created their own YouTube Channel which is being used for distance learning.

Social Media in IOUs

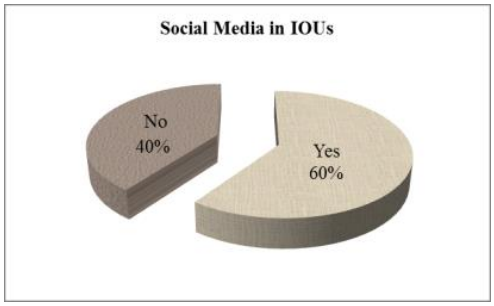

Figure-08

Figure 08 indicates use of Social Media by IOU. Social Media is emerging part of New Media. 64% of IOUs have created social media web pages which help the students for learning. 34% of IOUs have not adopted Social Media yet for academic or administrative purposes.

Mobile App

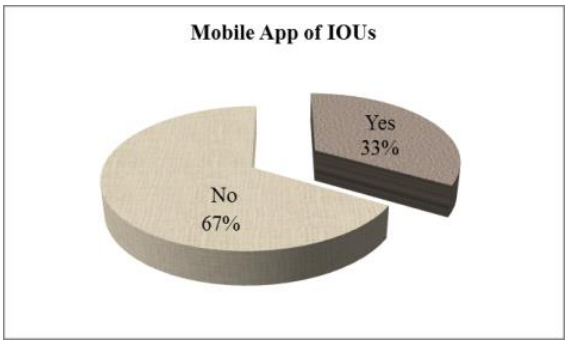

Figure-09

Mobile Apps are important channel of New Media. 36% of IOUs have developed own university mobile apps like i-vidya, vmouonline, iwanttostudy@baou, uprtou, smartkkhsou. 64% of IOUs are using this technology.

RESULT & DISCUSSION

In this present study was investigated the status of New Media technologies being used by IOUs. Research was conducted on certain new media like E-SLM, web channels, mobile apps etc. It was observed that IOUs have started to adopt New Media Technology for Distance Education. After exploring to all 15 IOUs websites, study concluded that 80% of IOUs are providing E-SLM and 33% of IOUs are using audio channels like FM or community Radio. 53% of IOUs have own web based radio for distance learning. 27% of IOUs are using video broadcasting technology for distance learning purpose. YouTube Channel has become a popular medium for video webcasting and 73% of IOUs are having own YouTube channels. 60% of IOUs are active on social media and they have social media web pages.

33% of IOUs are developed own mobile apps which are using for distance education. It was observed that IOUs are shifting traditional study support technologies to New Media based technologies but requires to develop a more structured Learning Model. It will be create a horizon for students to distance learning. Indian Open Universities need to create a model to providing all learning facilities to the students which are developed by New Media technologies. They also need to require knowing the path of maximum utilization of produced video learning material. New Media based technology is offering a pedagogical path to all students who wants to gain knowledge through distance learning. To the way conclusively it can be interpreted that use of New Media based technologies at Indian open universities have a wide scope but a long way to go.

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Department of Research

Certificate of Participation

It is certified that ***Mr. Mayank Gaur,*** *Department of Management, has participated in* ***Three Days Workshop*** *on* ***"Developing and Delivering e-content using Moodle"*** organized by Department of Research, Vardhman Mahaveer Open University, Kota during 21st to 23rd August, 2014 at Mahatma Gandhi Bhawan, VMOU, Kota.

(Dr. R. R. Singh)

Date: 23-8-2014

Additional Director (Research)

VARDHMAN MAHAVEER OPEN UNIVERSITY
KOTA (RAJASTHAN)

DEPARTMENT OF JOURNALISM & MASS COMMUNICATION

QUESTION BANK DEVELOPMENT WORKSHOP

8-10 February, 2015

CERTIFICATE OF PARTICIPATION

Dr./Mr./Km./Smt. Mayank Gaur of VMOU, Kota has participated in three days Workshop on "Development of Question Bank" organised by the SCHOOL OF CONTINUING EDUCATION, Department of Journalism & Mass Communication, VARDHMAN MAHAVEER OPEN UNIVERSITY, KOTA.

Prof. H.B. Nandwana
Director, SOCE

Dr. Subodh Kumar
Organising Secretary/ Convener

Vardhman Mahaveer Open University, Kota
Rawatbhata Road, Kota-324010, Rajasthan

Certificate of Participation

This is to certify that Dr. /Mr. /Ms. Mayank Gaur has actively participated in the workshop on ***"Health of Higher Education in India"*** organized by Vardhman Mahaveer Open University, Kota, Rajasthan on 5th of September, 2014.

Happy Teacher's Day

Dr. Keerti Singh
Organizing Secretary

Dr. R. R. Singh
Convener (Education)

Prof. (Dr.) Vinay Kumar Pathak
Vice-Chancellor, VMOU, Kota