

Video Conferencing Technology: A Boon to Teaching-Learning Process

Ms. Rashmi Dongre¹

Assistant Professor, Tilak Maharashtra Vidyapeeth, Pune

rashmibichkar15@gmail.com

Mr. Dheeraj Singh²

Assistant Professor, Tilak Maharashtra Vidyapeeth, Pune

dspune@gmail.com

Abstract

The term videoconferencing has a vague definition. The fact is that videoconferencing is a function which can be hosted on a variety of technologies and has been for some years. It is not a technology in itself. It may be defined as any use of television to join people in some live interaction. However, the term is actually applied to a wide range of situations from live video lecturing to large audiences, to a point-to-point, individual-to-individual desktop PC chats.

Video conferencing has great potential for learning in Higher Education. The potential lies in creating greater opportunity for dialogue which facilitates more effective learning than working in isolation. The technology ranges from microwave, satellites, optical fiber to ISDN. The communications from person to person informal discussions, formal group meetings to large lectures. It is only recently that technology has reached a level of stability, usability and affordability which permits its use in real teaching scenarios rather than research projects. The research paper helps in understanding the pros and cons of usage of video conferencing in teaching learning process. The research methodology implemented is secondary data collection that includes reference of previous published papers.

Keywords: Interactive Television, Broadcasting, Open Learning, Dialogue

1 Introduction

Video conferencing is a technology that allows users in different locations to hold face-to-face meetings without having to move to a single location together. However, the term is actually applied to a wide range of situations from live video lecturing to large audiences, to a point-to-point, individual-to-individual desktop PC chats. Video conferencing has great potential for learning in Higher Education. The potential lies in creating greater opportunity for dialogue which facilitates more effective learning than working in isolation.

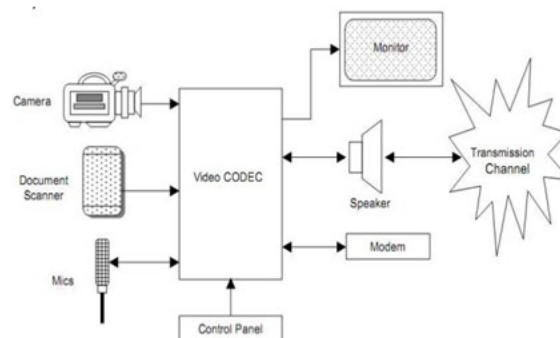


Fig.1 Video Conferencing Diagram

Video conferencing involves various devices as shown in the Fig.1. It allows people at two or more locations to see and hear each other at the same time, using computer and communications technology. They exchange visual information with Webcams (digital video cameras) and streaming video. Audio content may be distributed via computer or the telephone system [1].

The technology ranges from microwave, satellites, optical fibre to ISDN. The communications from person to person informal discussions, formal group meetings to large lectures. It is only recently that technology has reached a level of stability, usability and affordability which permits its use in real teaching scenarios rather than research projects. Exploring the technology in a real setting highlights any problems of use; however it fails to provide enlightenment as to the underlying reasons for the success or failure of any project. The aim of this research paper is to put Video Conferencing into a Learning Framework and to take a learner-centered rather than technology-centered view of the problem.

Learning is a social process involving the active construction of new knowledge and understanding through individual learning and group and peer interaction [4]. This means that a key learning skill is that of communication. Clear communication, effective communication tools and channels are necessary prerequisites for effective collaborative learning. One form of communication is dialogue. Dialogue, refers not only to the interactions between the learner and teacher(s) but also interactions between learners. The extent to which this occurs depends on the content of the subject matter, the overall educational philosophy in which the interaction occurs, the personalities of both teachers and learners, and the nature and variety of the communication media. Technology is blurring the boundaries between distance, open and tradition education. It is important to consider which of these contexts learning is occurring and the video conference is being applied to.

2 Literature Review

2.1 Traditional Learning and Distance Learning

Learning is a social process involving the active construction of new knowledge and understanding through individual learning and group and peer interaction. This means that a key learning skill is that of communication. Clear communication, effective communication tools and channels are necessary prerequisites for effective collaborative learning. One form of communication is dialogue [5]. Dialogue, refers not only to the interactions between the learner and teacher(s) but also interactions between learners. The extent to which this occurs depends on the content of the subject matter, the overall educational philosophy in which the interaction occurs, the personalities of both teachers and learners, and the nature and variety of the communication media. Technology is blurring the boundaries between distance, open and tradition education. It is important to consider which of these contexts learning is occurring and the video conference is being applied to.

Distance learning is when students are separated from teachers and peers [3]. This means that students learn remotely and do not have face-to-face learning with instructors or other students. Distant learners have less opportunity for interaction with peers or tutors. They are keen to achieve a sense of belonging with a peer community. Thus the introduction of communication technology increases the opportunity for interaction.

2.2 Need of Online Learning

Online learning, or virtual classes offered over the internet, is contrasted with traditional courses taken in a brick-and-mortar school building. It is the newest development in distance education that began in the mid-1990s with the spread of the internet and the World Wide Web. Learner experience is typically asynchronous, but may also incorporate synchronous elements. The vast majority of institutions utilize a Learning Management System for the administration of online courses. As theories of distance education evolve, digital technologies to support learning and pedagogy continue to transform as well. Online platforms can also offer more diverse representations of student populations as learners prepare for working [2]. The diversity comes from interacting with students outside of one's geographical location, possibly offering a variety of perspectives on course content.

2.3 Evolution of Video Conferencing Technology

Historically, video conferencing systems relied on a complicated network of telecommunication systems and perplexing audiovisual equipment. Fortunately, technology has evolved significantly in just the past few years, but legacy video conferencing costs remain sky high. The need for continuous IT support of legacy conferencing technology also poses an ongoing challenge for business video conferencing. It isn't uncommon for the old video conference platforms to require extensive technical support from dedicated IT teams, which represents a significant expense in manpower alone. New video conferencing system, such as High five, strives to address the pain points felt by users of legacy video conferencing [7]. In particular, the high cost and technical complexity of older conferencing tools have been targeted. Video conferencing technology has long played a role in the development of countless multinational companies, startups, and nonprofit organizations, but the legacy models are undoubtedly broken, and are quickly being replaced by cutting-edge, innovative products.

3. Findings & Discussions

3.1 Use of Video Conferencing Technology in Education System

With use of Video conferencing, the best of distance and conventional teaching is possible. Distance learning is normally associated with more class materials and better preparation of teaching materials. It provides a means to get both students and tutors to a central location, all be it virtually.

When the role of a technology within learning is assessed, there are two separate criteria to consider, those or effectiveness and efficiency. Effectiveness refers to the opportunity the technology offers to improve on what is obtainable with traditional methods. Video conferencing is particularly promising for the support of dialogue. It is an intimate method of communication on an individual or small group basis. It does not replace the use of print or other methods used in the conceptualization process. It can be used to encourage construction, its true use lies in encouraging dialogue and increasing the scope for dialogue. Minimum system requirements for video conferencing are a webcam capable of producing high-quality video. WebEx supports most webcams of this type, a computer with at least 1 GB of RAM and a dual-core processor, a fast network connection.

3.2 Effective Learning through Video Conferencing

The best way to capture students' attention is through interactive teaching. The more interactive a lesson, the better it is for everyone. Technology holds the key to a truly interactive teaching/learning experience and allows teachers to create a more engaged, collaborative environment in the process. Video conferencing saves educational institutions both time and money. It means students can get the benefits of multiple field trips without having to spend anything or go anywhere. It draws people together from all walks of life and from all countries. It takes classroom study to places far beyond the confines of its four walls. Video conferencing takes the concept of enrichment to new levels. The experience it brings to lessons enhances the standard curriculum, giving students a more complete understanding of the world around them. Video conferencing in education enables curricula enhancements without straining resources. For staff development meetings or classroom lectures, video sessions can be recorded for students to watch later, whether they missed the class due to absence or just want to go over the content during study time. Video streaming and recording enables the delivery of education in HD from the classroom to the laptop or to mobile devices while on the go.

4 Conclusions

Anything is possible with video conferencing if enough money is available. However, Institutes must have a clear plan about how they want to teach and where they want teaching to be delivered before committing to a particular delivery technology if cost effective systems are to be established.

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