# ROLE OF MULTIMEDIA TECHNOLOGY IN ONLINE LEARNING DURING COVID-19.

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**Abstract:** The COVID-19 pandemic has affected educational institutes worldwide to recourse an online multimedia instructional learning as a mode of teaching and learning. Therefore, throughout the globe there has been an increasing inclination among the students to use different modes of multimedia instructional technology for learning through online mode. The last two decades have witnessed a revolution due to onset of technology. It has changed the dynamics of educational institutes and influenced the educational system and the way people interact and work in the society. This rapid rising and development of information technology has offered a better pattern to explore the new teaching learning model. Using multimedia to create a context to teach communication skill has its unique advantages. As a result, Multimedia technology plays a very crucial role in teaching and learning. This paper aims to analyze the necessity and role of multimedia technology in online learning and the challenges faced by teachers and students in using this technology during the pandemic of Covid-19.

*Keywords* **– Multimedia Technology, Learning, Covid-19**

## I. INTRODUCTION

The world in which we live is changing rapidly and the field of education is experiencing these changes in particular as it applies to Media Services. The development in use of multimedia within the education sector has expedited in recent years, and looks for continued expansion in the future. Teachers primarily require access to learning resources, which can support concept development by learners in a variety of ways to meet individual learning needs [1]. The development of multimedia technologies for learning offers new ways in which learning can take place in schools and the home. Enabling teachers to have access to Multimedia learning resources, which support constructive concept development, allows the teacher to focus more on being a facilitator of learning while working with students. Extending the use of multimedia learning resources to the home represents an educational opportunity with the potential to improve student learning.

The alarming and severe impact of COVID-19 has shaken the world to its core. Furthermore, this pandemic has affected educational systems all over the world, leading to the total closure of schools, universities and colleges. This nationwide closure is impacting over 91% of the worlds' population [2]. Several other countries have implemented localized closure and UNESCO supported these countries and their efforts to mitigate the immediate impact of school closures, particularly for more disadvantaged communities, and to facilitate the continuity of education for all through remote learning [3]. School closures impact not only students, teachers, and families but have far-reaching economic and societal consequences. School closures in response to the pandemic have shed light on various social and economic issues, including digital learning, student debt, food insecurity, and homelessness as well as access to childcare, housing, health care, disability services and internet. In response to this pandemic UNESCO recommended to the use of distance learning programmes and open educational applications and platforms that schools and teachers can use to reach learners remotely and limits the disruption of education. It has been seen that the Covid-19 pandemic has disrupted the normal lifestyle of the people across the globe. Many educational institutions have shifted their base to virtual platforms to conduct online classes. Consequently, catering to the needs of all stages of education from pre-primary to university level, online education has

emerged as an alternative to ordinary face to face classes. Various stakeholders such as government and private organization are trying their best to assist each other by sprucing up their existing online platforms, apps and platforms to their optimum level.

Making a continuous effort to provide customized teaching-learning material suitable for online classes is another way of facilitating the school going children. Moreover, the central government has recently launched the PM e- VIDYA platform, with 12 new DTH channels, one for each class to reach out to all strata of society. These efforts are proved beneficial for school going population. However, this alternative medium has also brought some stark persistent realities of Indian society which is characterized by social inequalities in terms of availability of resources, essential to access these online classes or platforms. As envisioned in the constitution of caste, class, gender and religion. Article 29 (1) provides for equal access to educational institutions maintained by the state without discrimination on grounds only of religion, race, caste, language or any of them. Similarly, the Right to Education Act 2009, mandates to provide equitable quality education to all children from six to 14 years of age. In order to bring reforms and overcome all the disparities in education system during this pandemic the use of multimedia technology and online learning is a central.

## 1.1 MULTIMEDIA

Multimedia technology includes interactive, computer-based applications that allows people to communicate their ideas and information with digital and print elements. It is a form of communication that combines different contents forms such as text, audio, images, animation or videos into single presentations in addition to traditional context.

## 1.1 IMPORTANCE OF MULTIMEDIA TECHNOLOGY IN ONLINE LEARNING DURING COVID-19

1- Due to outbreak of the pandemic, digital platform played a very crucial role in the teaching and learning process because it created the real learning environment, the work from home culture which is now is booming in India during this pandemic. As we know that Multimedia technology provides the various digital plate forms for learning during COVID-19 such as video conferencing which includes zoom, Webex, Google meet etc. and develops the ability.

1) To connect synchronously with students over video (if bandwidth allows), audio, screen sharing, poll, and text chat.

2) The ability for students to work in groups, either when you enable breakout rooms for them, or when they use their personal meeting rooms to meet with peers.

3) The ability to create a simple "screen-cast" (for example, recording voice-over presentations) and share it with your students.

4) The ability to use written annotations on a whiteboard or directly onto documents on your screen when sharing. Using a tablet [with a stylus or writing implement] to annotate will allow for advanced annotation, such as writing out mathematical formulas.

2- Multimedia learning helps the students and as well as teachers in creation of valuable contents, dissemination of contents and evaluation of contents.

3- **Deeper Understanding** One of the great benefits of Multimedia technology in learning is deep understanding of the things because it takes the advantage of the brain's ability to make connection between verbal and visual presentation of the content, which in turn supports the transfer of learning to other situations.

4- **Develop the problem-solving ability: -** Problem solving has been an effective teaching strategy to enhance the student learning process and inculcate students with skills to adapt to real-life situations.[4] With the using of videos, images and animations it stimulates the brain. It helps the students in increasing their retention and attention power of their brain and also help in develop their meta-cognitive abilities and also increased development of cognitive and intellectual skills, knowledge and understanding [5].

5- **Access to a vast variety of information: -** Multimedia in e-learning offers significant potential in enhancing the learning environment, through helping to widen access to education. Its helps in developing intellectual curiosity and sense of responsibility among the children and increase their motivation for learning.

6- **Increased positive emotions.** According to different psychologists, positive emotions makes people to see more possibilities in their lives and also help the learners to learn better and tend to be more proactive. Using Multimedia technology during online learning develops certain things among the learners like, self- efficacy mindset, empower the

learner, learner know about the real value of e -learning courses, set clear goal and objectives, eliminates negative thinking , stress and fear, foster intrinsic motivation and develop and offer positive and constructive feedback.

7- **World exploration**: - With the help of Multimedia technology and learning children can explore the whole world in one frame without actually visited to those places.

8- **Collaborative learning**: - Collaborative learning includes the mutual engagement of learners in a joint effort to construct knowledge and solve problems together. the learners work together to achieve a common goal, exchange views, clarify the meaning of concepts, or solve problems together. it creates opportunities for cooperation in skills development. the socio-emotional aspect of interaction is essential in successful collaborative learning. the emphasis is placed on interactions in which common understandings are subject to discussion and are developed precisely through exploring the differences in the participants' levels of knowledge, skills, and positions. the use of multimedia approach is associated with an active process of the collective construction of knowledge using the group as a source of information, a means of mutual support and a motivational agent. successful collaborative learning requires both task and group-related interaction. students need time and space for the planning and coordination of group activities, and such discussions need to be supported by a teacher. student-centered instruction the lecture, which is a classic teaching format, often makes students more passive as the focus is on the content. Hence, the term collaborative Multimedia learning helps the users or groups of users how to interact with the system and with each other collaboratively and through the use of different mode of technology in effective manner.

9- Multimedia can stimulate more than one sense at a time, and in doing so, may be more attention-getting and attention-holding. Its helps in developing various domains of the learners such as Cognitive, Psycho-motor and Affective. In the cognitive tools approach, multimedia is not a form of instruction to learn from, but rather a tool for constructing and learning with. Learners may create their own multimedia knowledge representations that reflect their own perspectives on or understanding of ideas. Educational technology such as multimedia plays a fundamental and crucial role in teaching learning process at various level. It makes teaching learning process more effective and successful at different level from elementary to university.

Hence it can be concluded that Multimedia technology offers a great variety of possibilities and can be used for diverse purposes such as entertainment or learning. The technology offers the possibility of mixing modes (e.g., images, video, sound etc.) in creative ways. Multimedia has the potential to create high quality learning environments. The key elements of multiple media, user control over the delivery of information, and interactivity can be used to enhance the learning process through creating integrated learning environments. Explanation can be combined with illustrative examples, online assessment with feedback and the user can be provided with opportunities to practice and experiment.

## 2- IMPACT OF MULTIMEDIA TECHNOLOGY ON DIFFERENT ASPECTS OF LEARNING

**Social Aspect**: The idea of social learning is not a contemporary new one, having been a crucial part of early developments of science of psychology [6]. Currently, with the growing favor of Vygotsky's socio-cultural theory and Piaget's socio-cognitive conflict theory, as well as Lave and Wenger's situated learning theory, the concept of social learning has steadily been in the spotlight, which, of course, cannot ignore the aid of political slogans like 'learning society', 'knowledge society', etc. Generally, social learning considers our understanding as something constructed through 'conversations and 'interaction' with 'others', focusing on how we are learning instead of what we are learning [7]. Here 'others' should include not only the people but also the surrounding learning environments. Theory of social learning in practical contexts, claims that multimedia has the potential to positively promote people social learning process.

Due to the outbreak of pandemic, it has been observed that it has positively affects the different areas of relationships like parent- teachers, parents-children and student- teacher relationships because now both are more conscious related to their students and childrens' studies and helps them to overcome the loss of their regular education which is occurred during this amid pandemic of COVID-19. Now, the parents serve their children like an invaluable resource for learning from home and suggests clear strategies in order to facilitate their children continued progress. They should not require sophisticated content knowledge or teaching know-how that it is teacher job, but they can stick their nose in from time to time just to make sure that their child is staying up to speed.

Getting parents involved in their child's education in this way, without ever expecting too much from them – can have benefits that far outlast the distance teaching. Now they'll become more active partners in facilitating their children learning, and it's a relationship that you can draw on, time and time again, as new challenges arise. On the other hand, it has been seen that distance online multimedia learning helps to overcome the various social problems like sexual exploitation, physical assaults, eve- teasing etc. which occur in schools, colleges and universities.

**Economical Aspect:** - It is without a doubt that the cost associated with going to colleges and universities that offer online learning degree programs typically will be cheaper than going to traditional and mortar universities for a variety of reason. There is no doubt to say that online learning is a more affordable option, as you will get a high-quality education at a much lower cost.

**Psychological Aspect**: - The feeling of being physically disconnected is one of the biggest psychological strains on all ages during the pandemic. But now, digital platforms will help us to overcome this psychological strain and helps the learners to connect and engage with content and with each other. Moreover, it provides the real and creative learning environment to the learners and also develops the skills of critical thinking to solve the problems.

## 3. CHALLENGES FACED IN THE USE OF MULTIMEDIA TECHNOLOGY

It has been noticed that there are various challenges faced by the students during COVID-19 while using the internet and multimedia technology during online learning. Such as, students were unaware about the various use of electronic gadgets like computer, laptops, cell phones etc., lack of efficiency to use electronic resources available in their homes. There were various other problems related to Multimedia technology such as poor connectivity of the server, improper time management, ineffective communication channel and language barriers [8]. Furthermore, lack of proper guidance, inability to use Internet and technology, long distance to access internet services are some other critical problems need to be addressed. Due to this, students were lagging behind in developing the searching skills [9]. It has also been seen that due to financial constraints, students were not able to access the internet and devoid of electronic gadgets.

In our society, there are also many social barriers such as discrimination against girls as they are expected to do household chores instead of attending online classes in the morning. Most of the time they were not allowed to watch educational programs.

There are various other negative effects of using Internet and Multimedia technology in online learning such as: The internet affect students by depriving them of face-to-face communication. Students are exposed to various offensive sites such as pornography, adult sites etc. As everything is found on the internet. Students don't have to make more efforts because whatever they need to know is only a click away. It decreases their creativity. They spent more time on internet instead of studying. There's what is called non-essential internet use, when students aimlessly surf the internet for information for what they cannot even retain or remember after hours in a session. Excessive internet usage steals away time for family and they end up their developing close relationships with a lot of individuals and they also often isolating them from their families and peers.

## 4-CONCLUSION

It can be concluded that the Covid-19 has disrupted the normal lifestyle of people across the world. The virtual world has come to rescue. Many institutions and schools have also shifted their base to virtual platforms to conduct classes online. The multimedia course material definitely helped the students/learners for better understanding in the easiest way. It catered the needs of all stages of education from pre-primary to university level. Moreover, it played an important role in encouraging the teachers and students to use multimedia in teaching and learning process to make the teaching learning process more effective and creative.

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