PREFERENCE BASED E-LEARNING DURING COVID-19 LOCKDOWN: AN EXPLORATION

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ABSTRACT
Before 2020, In India online education was considered as secondary source of education. Due to COVID-19 lockdown there is drastic change in education system. There are more than 1.2 billion students are out of the classroom all over the world. Digital platform plays a significant role in e-learning to undertake teaching and learning process remotely. During pandemic period there is significant growth in usage of e-learning software's, video conferencing tools, language applications, social media and electronic devices. Many e-learning applications are freely available and accessible for online education. Initially it was difficult to accept online education in rural area and for primary education. Due to the pandemic situation most of the teachers as well as students accepted online platform for education. Selection and access of right e-learning technology leads to more effective e-learning outcome. This research paper focus on identifying students' preference for using e-learning resources and applications in higher education.
Keywords: E-learning, Virtual Classroom, Learning Management System, Flipped Classroom, e-learning Resources, Moodle, Google Classroom

1. INTRODUCTION

Due to technology revolution, the field of education has experienced enormous changes in the process of teaching and learning methodologies. The internet has a valuable contribution to transform the entire process of teaching, learning and development to the virtual world. The young generation has motivated this educational revolution, and e-learning clearly has a bright future ahead (Anjut Rajput, 2019). Learning management system provide scientific approach in education to keep track of students learning process in higher education. It helps in documentation, reporting as well as administration of various teaching learning activities online. In online education large number of learners can get the knowledge virtually in their own pace. Today's generation is well familiar in the use of technologies, smartphones, and text messaging and using the internet. With the availability of smart devices and internet users can access online resources at any place and any time as per their requirements.

Flipped classroom is one of the blended learning approach where students can learn through pre-recorded lectures and during the class time students discuss with teacher about actual implementation, project work, workshops interactively that leads to active learning (Thanthawi Ishak et.al.,2020).

According to literature review, students retain 25-60% more material in online education than traditional classroom learning. Whereas students learning speed can be improved in online learning because they can learn from their own pace like reading, memorizing, revising, leave out some contents, accelerating through the concepts as per their learning style and interest[1]. There will be huge demand for personalized learning, automotive learning, catboats, gamification, and smart classrooms in coming days (www.talentlms.com, 2020).

As per ongoing research it is found that there is need to understand the students' preferences and attitude towards e-learning technologies for getting required outcome from the online education system. It is observed that most of the online education system fails due to lack of understanding or analysis of students technical resources availability, comfortless and flexibility.

To bridge this research gap, preference based e-learning system helps to make positive change in education system and that leads to students as well as teachers satisfaction in revolutionized teaching learning process.

1.1. COMPONENTS OF E-LEARNING

Learner's e-learning preferences are identified by evaluating various components like learning methods, e-material, discussion forum, online submissions tools, choice of video conferencing application for live lectures, selection of electronic devices, speed and availability of internet connection, time and duration for online classes, flexibility of learning management system and online assessments methods components. Fig 1. Shows components of e-leaning preferences.

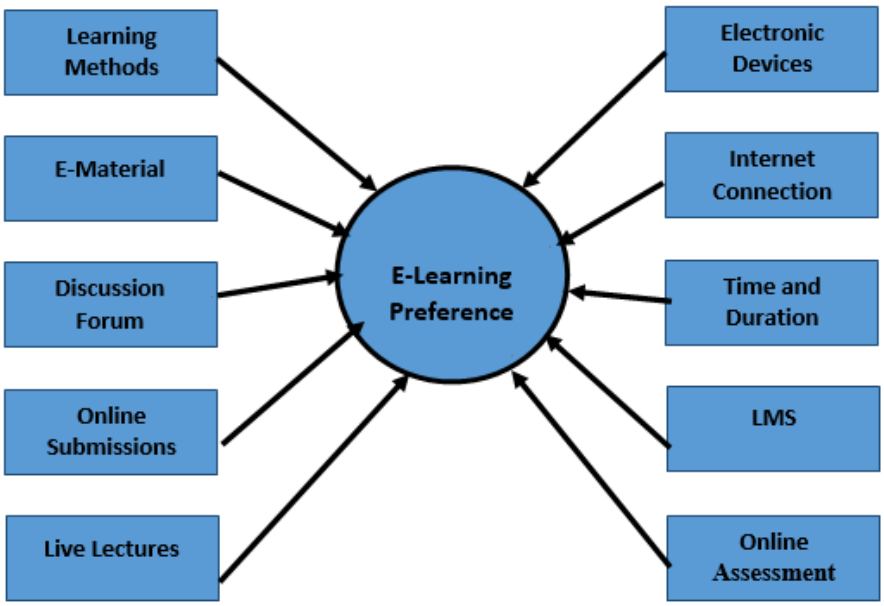

Fig.1 Components of E-learning Preferences

The choice of e-learning components is different from learner to learner. To identify availability and flexibility of e-learning components for teaching and learning is significant for outcome based e-learning that leads to better e-learning experience.

2. RESEARCH DESIGN

2.1 Type of the research

In the backdrop of above discussion the present research is an attempt to explore certain key aspects. Hence the type of the research adopted in this present endeavor is exploratory research.

2.2 Objectives of Study

1. To examine students e-learning preferences in higher education.
2. Comparative study of e-learning resources in higher education

2.3 Scope of the study

The research work is focuses on study of e-learning resources, technology used and students' preferences for e-learning platform during lockdown period in higher education. Learners and teachers preferences about e-learning resources, methods and technologies are collected from one of the leading management institute in the western Maharashtra.

2.4 Sample Design

Structured questionnaire designed using Google form and link were send to the 510 students. Out of these 458 respondents submitted response. Here census method is used for sample selection.

3. RESULT AND DISSCUSSION

Here research work is carried out by component wise data analysis of e-learning tools and techniques that described are as follows.

3.1 METHODS OF E-LEARNING

There are mainly two types of e-learning as synchronous and asynchronous e-learning. In synchronous e-learning teachers can use video conferencing application for live lecturing method. Where teachers can allow the students to attend lectures on stipulated time only. Here teacher can control and monitor students online by asking questions, sharing data, live chatting etc. This is one of the fruitful method of teaching and learning where teachers can get satisfaction of their teaching content. Students can clear their doubts in the live lectures interactively.

In asynchronous e-learning teachers may post study material online whereas students can download it or refer it online as per their time and convenience (www.educations.com, 2020). Common methods are used in asynchronous e-learning are prerecorded video lectures, lecture notes, PowerPoint presentations, virtual library, online discussion board, social media platforms etc. Discussion forums, assignments and online tests are useful to understand students' knowledge and interest in specific subject in asynchronous learning. As per our survey 28% students recommend for synchronous e-learning, 20% students recommend for asynchronous learning where as 52% students recommend for combination of both synchronous and asynchronous teaching learning methods.

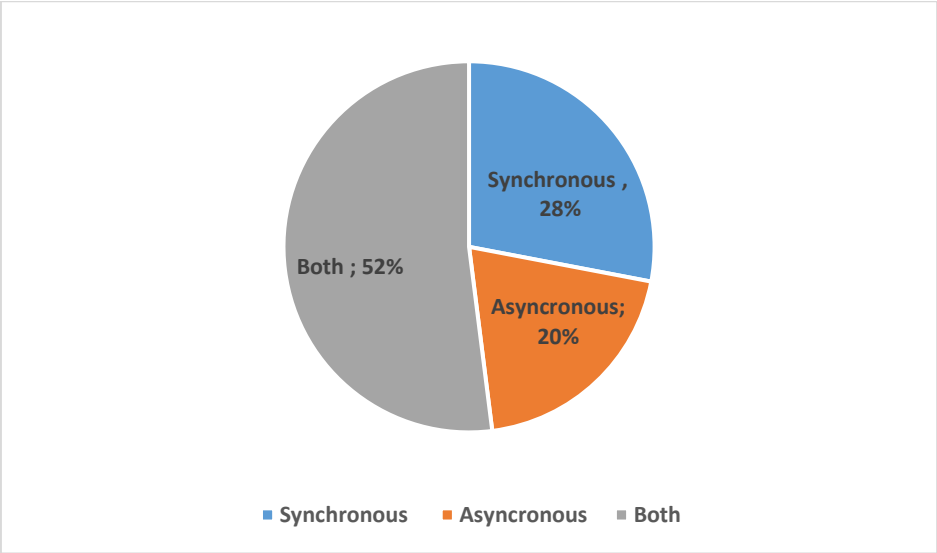

Fig.2 E-learning Methods

3.2. ELECTRONIC DEVICES FOR E-LEARNING

During lockdown to continue with teaching and learning process usage of smart electronic devices is the primary need for teacher as well as students. For online teaching and learning different devices can be used like desktop computer, laptop, smart phone, tablet PC etc. As survey reveals that among 25 teachers 10(40%) teachers using desktop computers, 7(28%) teachers using laptops, 2(8%) teachers using tablet PC and 6(24%) teachers are using smart phone for delivering online lectures as well as distributing e-contents.

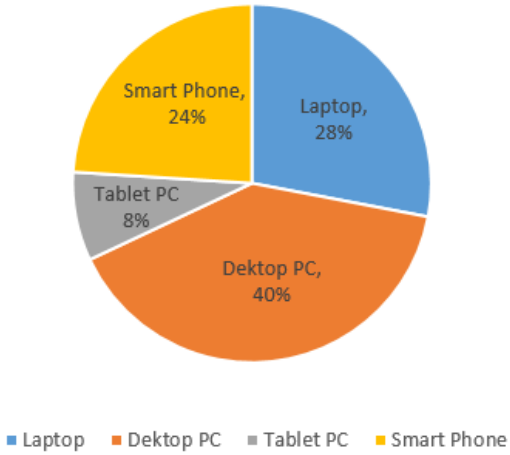

Fig.3 Teachers Using Electronic Devices for e-learning

The survey indicates that among 458 students, (283) 62% students using smart phone, (109)24% using laptops and (42) 9% students using Desktop PC, (14) 3% using tablet PC and (10) 2% don't have any electronic device for online education.

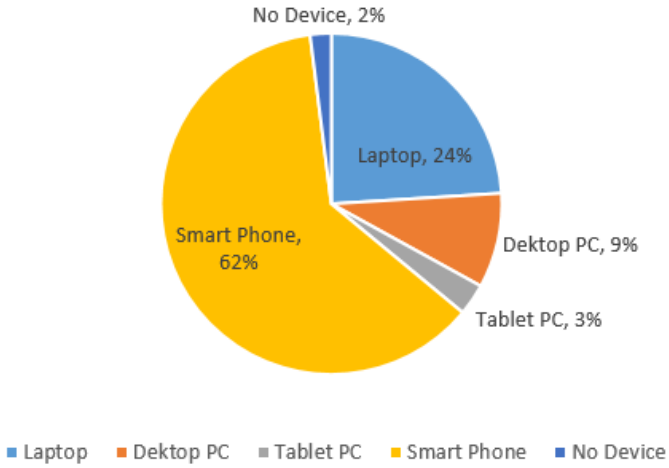

Fig.4 Students- Use of Electronic Devices for e-learning

3.3 INTERNET CONNECTION

To connect students and teachers virtually proper internet connection, good bandwidth, and sufficient internet data pack is necessary. Number of internet users are increasing day by day which consumes large bandwidth. During lockdown most of the schools and colleges are going online in overall globe (www.weforum.org, 2010). As per survey 48% teachers and 36% students using broadband where as 52% teachers and 64% students using Wi-Fi internet connection for online education. Whereas Internet bandwidth stability is more in fiber-optic broadband connection than wi-fi which helps for better audio video quality. It provides network speed consistency. This type of connections are less vulnerable during peak usage period.

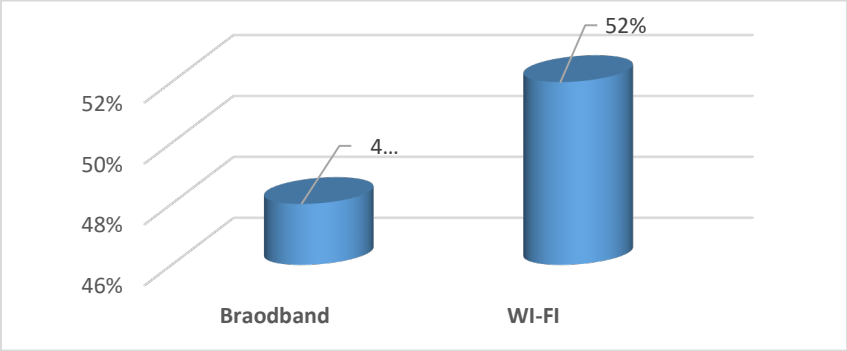

Fig.5 Teachers using Type of Internet Connection

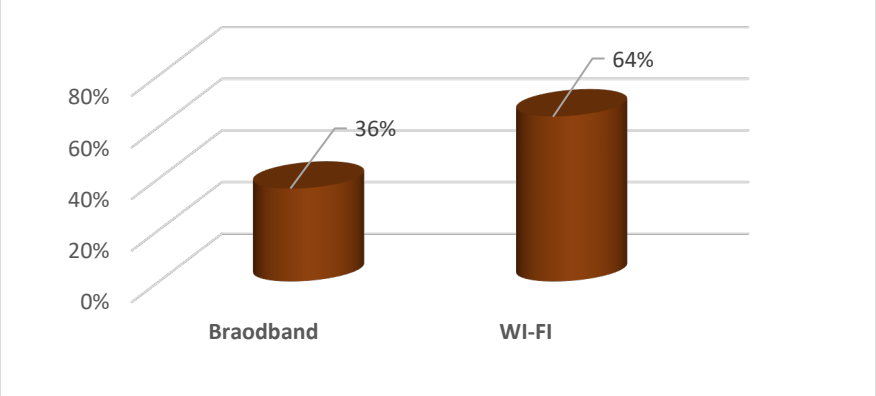

Fig.6. Students Using Type of Internet Connection

3.4 DURATION AND LENGTH OF ONLINE CLASSES

During online classes teachers should share content in concise complete and simple languages so individual learner actively attend the classes. As per MHRD duration of online classes should be 30 to 45 min for school students (timesofindia.indiatimes.com, 2020).As per education experts online class duration for UG and PG students ranges between 30 to 90 minutes and maximum 3 to 4 hours for 5 days in a week (timesofindia.indiatimes.com, July 2020). Student engagement is very important for outcome of online education (odishabytes.com, 2020). Proper timetable should be important and share students through Whatsup group or email. It indicate from the survey that 65% students recommend for 40 min, 30% students recommend 60 min and 5% students recommend more than 60 min as a suitable duration for online lectures.

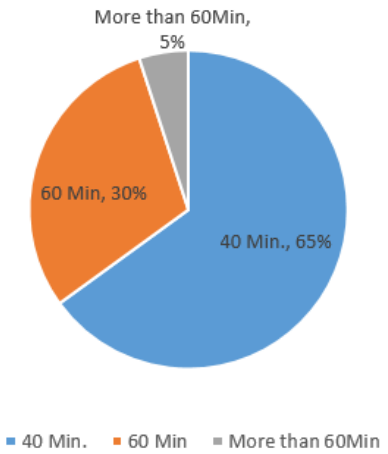

Fig.7 Students Recommendations for Duration of Online Classes

3.5 LEARNING MANAGEMENT SYSTEM:

Online learning management systems are web based applications are used to provide study material, online quizzes, e-assessments for students tracking, reporting, training and development. Selection of right LMS is the challenge for all institution for efficient teaching and learning during in COVID-19 lockdown situation.

Cloud based LMS does not require any installation and maintenance. Such LMS interface are responsive on mobile and user friendly with 24*7 client support. Google classroom is a popular cloud based LMS mostly preferred by various engineering and management institutions. The institute with G-suit account under educational domain provide unlimited storage space for Google classroom where institute can restrict to join the students from specific domain that help to control virtual classroom activities.

Open source LMS require installation and maintenance from institution. Moodle is the one of the widely known LMS. Moodle community guide for how to setup LMS, provides tips for how to provide e-content and teach using Moodle. It provides various tools for teacher and student administration, student progress tracking as well as mobile application guidelines. The survey highlights that 68% management students recommend Moodle LMS where as 42% management students are recommend for Google classroom. UG students are more comfortable with Moodle than any other LMS.

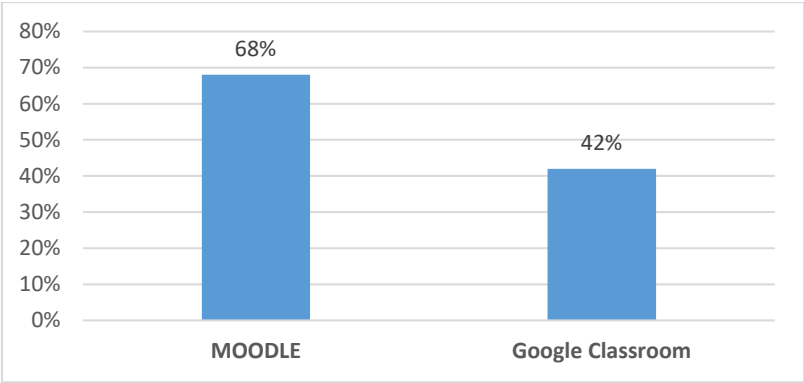

Fig.8 Students Recommendations for LMS

3.6 ONLINE ASSESSMENT

Due to technological advancement online assessment is one of the effective technique for student progress evaluation. During lockdown situation most of the government and private institutions promote for online assessment. As per guidelines from e-learning industry online assessment include variety of questions like MCQ, short answer, long answer, match the pair etc. Test should help to grab the interest of learner as well as covers the required course outcomes. It is found that students face stress and anxiety after examination and need to wait for a long time for declaration of results. Through Online exam it is easy to declare result immediately which help to reduce stress of student during this pandemic situation. Online exams helps increase learning interest of students by assessing the learners as per their learning styles e.g. auditory and visual learners are more focus on multimedia content rather than text or long sentences. The survey depicts that management students recommend MCQ test based online examination to save students time as well as it is possible to attempt exam with average internet bandwidth (elearningindustry.com, 2020).

3.7 ONLINE LECTURES

Due to COVID-19 pandemic situation most of the educational institutions continue education process through the online mode. It is real time platform where students and instructors have an opportunity for the face to face interaction virtually. It also helps to feel like classroom environment where instructor and students are online on same platform at the same time. Different video conferencing apps like Zoom, WebEx, Google Meet, and Go to Meeting etc. provide various facilities for interactive teaching, learning and online discussions. It provides raise hand (to flag or ask any question), live chatting, content sharing, reactions (to express emotions), and recording features for communication. During online lectures chat box can be used to ask questions to the students, record students' attendance, assign tasks and keep students' active as well as engaged during teaching learning process. It helps to increase teacher satisfaction as well as improve students learning level. Zoom application allowed to replicate to the traditional classroom with screen sharing, video streaming and braking classroom into different groups of interaction and discussion. Google Meet allowing for instance messaging and video calling features. These video conferencing platforms maintain log record of all participants/ students to monitor and control online activities. Today these applications enhance their security features to protect your data from unauthorized access (tophat.com, 2020). According to the survey 68% students recommend Zoom App, 24% students' recommend Google Meet app and 8% students recommend other apps for virtual lectures.

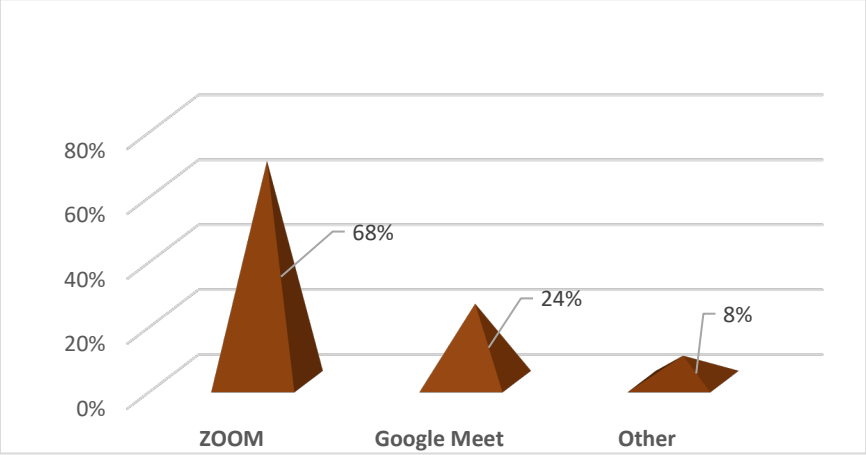

Fig.9 Students Recommendation for Video Conferencing Applications

3.8 ONLINE SUBMISSIONS

Due to COVID-19 pandemic situation it is challenge for education system to accept an assessment of students' assignments, practical work, and case study submission. As per UGC norms last year examination and their submission is important part to complete their academic process for partial fulfillment for providing degree. Google classroom, Google forms, Moodle LMS etc. are the different standard techniques used for collecting student's submissions online. There is challenge for storage size and security of document send over the network. Educational G-suit provide unlimited storage size, which can helps most of institute to accept large number of student's submission online in secured manner. Students has submitted their internal work through pdf, doc or image file to the respective teacher where teacher can online assess and evaluate as well as provide comments to these documents in the systematic way using LMS.

3.9 DISCUSSION FORUM

Discussion forum is a web based synchronous technique to engage the user in online communication. It is one of the effective social media technique in e-learning. Discussions are frequently controlled into forums, which are distinct folders each committed to specific broad discussion topics. It helps for healthy knowledge sharing activity where different problems can be discuss on one platform. Expert's opinion and problem solving technique helps for further research and development in particular domain. In the domain based discussion forum students can post their queries as well as opinion, this activity encourage for critical thinking on specific topic. It also helps for memorization of concept that they learn through study material. This activity is the useful resource for the teacher to create interest in subject and student approach toward specific topic. Google groups is one of the popular web-based discussion forum where thousands of users posting USENET on daily basis. It is possible to create different types of discussion forums using a Web Crossing, Moodle, WebCT, Blackboard etc. web portals. This technique motivate for student centric teaching learning process where with the minimum guidance students can engage in online communication on specific topic. Each students can contribute and respond to the question which helps to enlighten students' knowledge and analytical ability.

3.10 E-MATERIAL

Effective and good quality study-material is very important part in online education to engage learners in the right way. It helps to create interest of learner and learn as per their own pace. Learning material categorization as per as per learners learning behavior leads to outcome based learning. Government provide valuable contribution in online education by publishing the good quality of study material on various platforms like MOOCS, e-PG-Pathshala and Swayam etc websites. E-study material is available in the form of PowerPoint presentations, notes, eBooks etc. As per survey 72% students recommend notes pdf, 23% students recommend PowerPoint presentations and 5% students recommend eBooks for study.

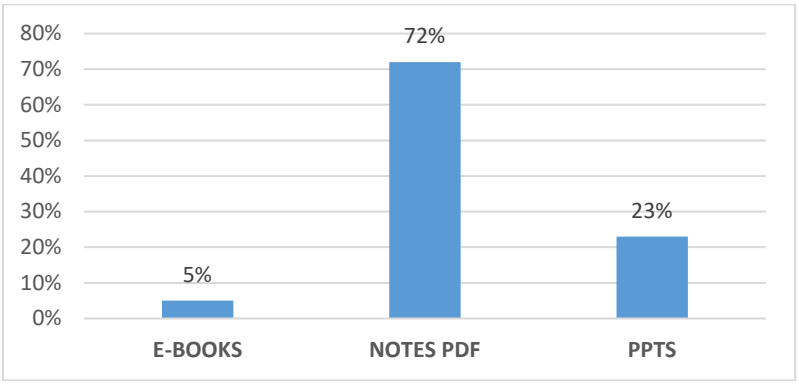

Fig.10 Students Recommendations for E-Material

CONCLUSION

It is observed that, lack of internet range in rural area, awareness of e-learning technologies, learners attitude, lack of availability of electronic gadgets, nature of ICT tools, selection of standard tools and scientific method for online education are the important challenges in online education.

During lockdown situation to continue the teaching and learning process e-learning technologies, resources act as very significant contribution to the higher education system. It is found that Moodle, Google Classroom are the most acceptable and recommended LMS for online education. Zoom is the most recommended video conferencing application used during the lockdown situation for synchronous learning. For online lectures 40 to 60 minutes is the most recommended time duration for better teaching and learning process. During lockdown students learn asynchronously through teacher's recorded video lectures, PowerPoint presentations and e-notes etc.

E-learning will continue to persist post-pandemic and highly impact on education system. Personalized learning, Blended learning, flipped classroom, gamification, artificial intelligence technologies, are the future of education system.

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