



INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

ONLINE EDUCATION DURING COVID-19 PANDEMIC - TEACHER AND STUDENT PERSPECTIVE – A STUDY

Dr. V. Madhukar

Assistant Professor,

Department of Computer Science, Chaitanya (Deemed to be University)
Kishanpura, Hanamkonda, Warangal – 506001, Telangana State

ABSTRACT

This paper is an attempt to investigate the Teachers and Students perception on the usage of Online Educational resources during the pandemic situation. Covid-19 virus affected almost all the countries and caused chaos among the people. Social distancing and wearing a mask has become a necessity. Teaching and learning can't be halted, especially for those who are looking for acquiring jobs or getting admission in best universities. In Traditional system, Face to Face interaction between Teachers can understand the expression of a student and analyze student's level of understanding. Covid-19 has entirely changed the existing system and forced teachers and students to switch on to Online Education. Usage of Information Communication Technology (ICT) tools has been there since many years, tools such as Computers, Audio System, Smart Boards, Over Head Projectors, LCD Projectors etc., are in place which helped the teacher to explain a lesson or topic in a effective manner. It is said "Picture Speaks Louder than Words", i.e., manual based teaching methodology has its own limitations, it is difficult to estimate whether student has gained exact knowledge or not, due to this reason, handmade charts were used which played its role to some extent. In the due course of time, we have been viewing advancement in technology and everyone started using various types of electronic devices and are getting connected with the network. Usage of Mobiles, Tablets, Laptops, etc., has become a necessity. Today teachers are utilizing virtual class rooms, taking classes from home. In this paper we try to identify various resources, techniques and methods which can help online learning activity more interactive and effective. We try to analyze the merits and demerits of online teaching and learning.

Keywords: Covid-19, Online Education, Devices, Teachers and Students Perspective.

INTRODUCTION:

The Covid-19 pandemic outbreak forced many educational institutions to remain closed temporarily (since November 2019). There are several arguments which are associated with E-Learning, such as accessibility, availability, flexibility, and learning ability. It is considered to be a relatively cheaper mode of education in terms of the cheaper cost of transportation, accommodation, and the overall cost of institution-based learning. Flexibility is another interesting aspect of online learning; a learner and facilitator can schedule or plan their time for completion of courses. Combining face-to-face lectures with technology gives rise to blended learning and flipped classrooms; this type of learning environment can increase the learning potential of the students. Students can learn anytime and from anywhere, thereby allowing a student to develop new skills in the process, leading to life-long learning. The government also recognizes the increasing importance of online learning in this dynamic world. The severe explosion of Corona disease can make us add one more argument in terms of online learning, that is, online learning serves as a panacea in the time of crisis. Corona virus has lead to an unexpected rise at present time, school closures and containment measures has made families across the world to stay at home, which has lead to the usage of technology and digital environment to keep the children's to stay connected with the education system. Today learning can be transferred virtually using different types of media. Online learning environment depends on Internet which is also termed as E-Learning. A teacher in online class can fill the gap of physical classroom using the virtual class room. It is transforming our lives from traditional to digital world. Online class has a flexibility of scheduling the class time and a student can watch a video many times.

Students in rural areas were missing many advantages which a urban students used to get, but today technology is in the reach of everyone and are utilizing its services extensively. E-Learning has helped such deprived students to have an access to the online resources and clarify their doubts with experts from their home. Videoconferencing is synchronous replica for interactive voice, video and data transfer between two or more participants. Using apps such as Zoom, Google Meet etc., are the applications available on internet and mobile which has become a bridge between students and teachers. Many organizations have developed platforms for E-learning, which is cost effective and easy to use and also has improved performance. Following are the reasons for which online learning is important.

1. Knowledge can be acquired by staying at home, creating a physical distance.
2. High quality teaching & learning environment.
3. Allows to have flexible timing for the class
4. Can be accessed from anywhere and anytime.
5. Monitoring of students and real time reports.
6. Create a brand of the institution among students and parents.

LITERATURE REVIEW

Need for Online Learning

Covid-19 a virus which has halted the human kind from doing its day to day activities, to an extent such that individual around the world are not in a position to come out from their home. According to many research articles, all types of activities were been forced to be shut down immediately. Education on the other hand had seen transformation from traditional system to online education. Academic progress of a students cannot be compromised but still educational institutes were also been forced to shut down for the safety of students community.

At this point of time immediate and important decision have been taken to overcome the present scenario of pandemic crisis by adopting the smart solutions which can bridge the gap the between teachers and students. Central Government and State Government in India, has been fighting with Covid-19 from the past 14 months. Schools, Colleges and Universities have adopted various modes of online education platform to reach their students and help them in achieving their academic progress.

Many State Governments in India are also exploring online learning platform for accessing online educational resources, during the ongoing lockdown. They are looking to design ways to help students continue with their learning during the nationwide lockdown due to Covid-19. The aim is to effectively continue with the academic cycles of the students and not let the lockdown affect their learning. They are planning for students to provide audio and video based content along with self assessment exercises. Special doubt- clearing sessions on important topics may be held for students. People of India need to continue with coordinated and collective efforts to fight Covid-19 and also make productive use of their time during the current situation by adopting Information and Communication Technology (ICT) for teaching learning process and contribute towards the intellectual wealth of the nation. Online classes have been promoted across the different universities by the University Grants Commission (UGC) during the lockdown phase in order to make sure that the students do not miss out on the classes during the time. While speaking to the media on 13.04.2020 (DD news), UGC Chairman declared that the UGC has constituted two committees to promote online learning during Covid-19 lockdown. One of the committees has been formed for the examinations and academic calendar, while the second committee will work on students, teachers and the education system. Based on the suggestions of the committee and in consultation with the Ministry of Human Resource Development (MHRD) the guidelines for the universities may be issued by the UGC very soon. UGC has advised all higher educational institutes in the nonfiction dated 11th April 2020 to take preventive and precautionary measures for maintaining social distancing, staying in the confines homes / hostels and utilise the time productively by engaging in on-line learning during the lockdown period for Covid-19. The resources, which are in the form of digital platforms, can be accessed by the teachers, students and researchers in Universities and Colleges for expansion of their knowledge. To ensure that there is no break in the education and students get full-access to classes, like before, MHRD advises students to carry on with their studies using the online learning platforms. The online learning platforms help the students not only get full access to the study material but also allow them to engage in online classes and interact with the teachers like the physical classroom setting. Following is the list of some of the digital initiatives of MHRD & UGC along with their access links for school students as well as UG and PG level education:

1. **SWAYAM online courses:** provides access to best teaching learning resources which were earlier delivered on the SWAYAM Platform may be now viewed by any learner free of cost without any registration. Students/learners who registered on SWAYAM (swayam.gov.in) in the January 2020 semester can continue their learning as usual. Link- <https://storage.googleapis.com/uniquecourses/online.html>
2. **UG/PG MOOCs:** hosts learning material of the SWAYAM UG and PG (Non-Technology) archived courses. Link- https://ugcmoocs.inflibnet.ac.in/ugcmoocs/moocs_courses.php.
3. **e-PG Pathshala:** hosts high quality, curriculum-based, interactive e-content containing 23,000 modules (e-text and video) in 70 Post Graduate disciplines of social sciences, arts, fine arts and humanities, natural & mathematical sciences. Link- egpp.inflibnet.ac.in
4. **e-Content courseware in UG subjects:** e-content courseware in 87 Undergraduate courses with about 24,110 e-content modules is available on the CEC website at <http://cec.nic.in/>.
5. **SWAYAMPARBHA:** is a group of 32 DTH channels providing high quality educational curriculum based course contents covering diverse disciplines such as arts, science, commerce, performing arts, social sciences and humanities subjects, engineering, technology, law, medicine, agriculture etc to all teachers, students and citizens across the country interested in lifelong learning. These channels are free to air and can also be accessed through your cable operator. The telecasted videos/lectures are also as archived videos on the Swayamprabha portal. Link- <https://www.swayamprabha.gov.in/>
6. **CEC-UGC YouTube channel:** provides access to unlimited educational curriculum based lectures absolutely free. Link <http://www.youtube.com/user/cecedusat>
7. **National Digital Library:** is a digital repository of a vast amount of academic content in different formats and provides interface support for leading Indian languages for all academic levels including researchers and life-long learners, all disciplines, all popular form of access devices and differently-abled learners. Link- <https://ndl.iitkgp.ac.in/>

8. **Shodhganga**: is a digital repository platform of 2,60,000 Indian Electronic Theses and Dissertations for research students to deposit their Ph.D. theses and make it available to the entire scholarly community in open access. Link- <https://shodhganaa.inflibnet.ac.in>
9. **e-Shodh Sindhu**: provides current as well as archival access to more than 15,000 core and peer-reviewed journals and a number of bibliographic, citation and factual databases in different disciplines from a large number of publishers and aggregators to its member institutions including centrally-funded technical institutions, universities and colleges that are covered under I2(B) and 2(f) Sections of the UGC Act. Link- <https://ess.inflibnet.ac.in/>
10. **Vidwan**: is a database of experts which provides information about experts to peers, prospective collaborators, funding agencies policy makers and research scholar in the country. "It is hoped, that these ICT initiatives, which cover a broad range of subjects and courses and have been prepared by experts, will provide an excellent learning experience to all. Link- <https://vidwan.inflibnet.ac.in/>

Emerging approaches of Govt. of India for online learning

In a press release put out by the MHRD on March 21, 2020, the Union HRD Minister shared various free digital Online Learning platforms for students to continue their learning during Covid-19 based school closures. The World Bank is also sorting emerging approaches undertaken by different countries, and storing all related information which may be useful to others. The emerging approaches of India shared by World Bank are as listed below.

- **The DIKSHA** portal contains online learning content for students, teachers, and parents aligned to the curriculum, including video lessons, worksheets, textbooks and assessments. Under the guidance of its national board of education (CBSE) and NCERT, the content has been created by more than 250 teachers who teach in multiple languages. QR codes in textbooks encourage students to go beyond the book. The app is available to use offline.
- **e-Pathshala** is an online learning app by NCERT for classes 1 to 12 in multiple languages. The app houses books, videos, audio, etc. aimed at students, educators and parents in multiple languages including Hindi, Urdu, and English.
- **The National Repository of Open Educational Resources (NROER)** portal provides a host of resources for students and teachers in multiple languages including books, interactive modules and videos including a host of STEM-based games. Content is mapped to the curriculum for classes 1 – 12, including aligned resources for teachers.
- **Swayam** hosts 1900 complete courses, including teaching videos, weekly assignments, exams and credit transfers, aimed both at school (class 9 to 12) and higher education (undergraduate and postgraduate) levels. Subjects are aligned to the curriculum and include engineering, humanities, social sciences, law and management courses including robotics.
- **Swayam Prabha** is a group of 32 Direct To Home (DTH) channels devoted to telecasting of educational programs round the clock and accessible all across the country. The channels air courses for school education (class 9-12), higher education (undergraduate, postgraduate) as well as for out-of-school children, vocational education and teacher training. Subjects include arts, science, commerce, performing arts, social sciences, humanities, engineering, technology, law, medicine, and agriculture. Schedules for the television broadcast as well as archived programs are available on the website.

Some free external repositories of distance learning solutions

- UNESCO has suggested the list of educational applications, platforms and resources below with an aim to help parents, teachers, schools and school administrators facilitate student learning and provide social care and interaction during closure of educational institutions. Most of the solutions are free with multiple language option. They are categorized based on distance learning needs, but most of them offer functionalities across multiple categories.
- **Brookings** – A catalogue of nearly 3,000 learning innovations. Not all of them are distance learning solutions, but many of them offer digital education content.
- **Common Sense Education** – Tips and tools to support school closures and transitions to online and at-home learning.
- **Commonwealth of Learning** – List of resources for policymakers, school and college administrators, teachers, parents and learners that will assist with student learning during the closure of educational institutions.
- **Education Nation** – Nordic countries have opened up their learning solutions for the world for free, supporting teachers and learners during the school closures.
- **EdSurge** – Community-driven list of edtech products, including many distance learning resources for students, teachers and schools, covering primary to postsecondary education levels.
- **Global Business Coalition for Education** – List of online learning platforms, information sharing platform and communication platforms.
- **Keep Learning Going** – Extensive collection free tools, strategies, tips and best practices for teaching online from a coalition of USA-based education organizations. Includes descriptions of over 600+ digital learning solutions.
- **UNHCR** – An extensive list of over 600 distance learning solutions from the United Nations agency for refugees.

Online Learning or E-Learning

“Most of the terms (online learning, open learning, web-based learning, blended learning, m-learning, for ex.) have a common aspect i.e., the ability to use a computer connected to a network, that offers the possibility to learn from anywhere, anytime, in any rhythm, with any means”. Online learning can be termed as a tool that can make the teaching–learning process more student-centered, innovative. Online learning is defined as “learning experiences in synchronous or asynchronous environments using different devices (e.g., mobile phones, laptops, etc.) with internet access. In these environments, students can be anywhere (independent) to learn and interact with facilitators or teachers and other students.

Online Teaching is a Necessity Today

Online teaching and online learning can be termed as the panacea for the crisis. The quality enhancement of online teaching–learning education in Chinese universities has increased exponentially after the Covid-19 outbreak. The changing situations of online teaching–learning methods can provide quality education, it is rather how academic institutions will be able to adopt online learning in such a massive situation. Resistance to change will not help any educational unit across the world. The shift from face-to-face

lectures to online classes is the only possible solution available today. Personalized teaching and learning are the biggest challenges for online teaching. There are many technologies available for online education but sometimes they create a lot of difficulties. These difficulties and problems associated with modern technology range from Website errors, issues with installation, login problems, problems with audio and video, and so on. Sometimes student finds online teaching to be boring and un-engaging. Online learning has so much of time and flexibility that students never find time to do it. Personal attention is also a huge issue facing online learning. Students want two-way interaction which sometimes gets difficult to implement. The learning process cannot reach its full potential until students practice what they learn. Sometimes, online content is all theoretical and does not let students practice and learn effectively. Mediocre course content is also a major issue. Students feel that lack of community, technical problems, and difficulties in understanding instructional goals are the major barriers for online learning (Song et al., 2004). In a study, students were found to be not sufficiently prepared for balancing their work, family, and social lives with their study lives in an online learning environment. Students were also found to be poorly prepared for several e-learning competencies and academic-type competencies. Also, there is a low-level preparedness among the students concerning the usage of Learning Management Systems.

As per the World Economic Forum, the Covid-19 pandemic also has changed the way how several people receive and impart education. To find new solutions for our problems, we might bring in some much-needed innovations and change. Teachers have become habitual to traditional methods of teaching in the form of face-to-face lectures, and therefore, they hesitate in accepting any change. It will be beneficial for the education sector and could bring a lot of surprising innovations. We cannot ignore and forget the students who do not have access to all online technology. Students who cannot afford resources for online classes, can be at loss. They may lose out because of the heavy costs associated with digital devices and internet data plans. This digital divide may widen the gaps of inequality. This terrible time of fate has taught us that everything is unpredictable and we need to be ready to face challenges.

Although this outbreak did not give us much time to plan we should take a lesson from this that planning is the key. We should plan everything, no matter if plan A fails, we should have plan B ready. This can only be done if we do scenario planning. There is a need to prioritize all the critical and challenging situations which may occur and plan accordingly. This pandemic has also taught us that students must possess certain skills such as skills of problem-solving, critical thinking, and most importantly adaptability to survive the crisis. Educational institutions must build resilience in their systems to ensure and prioritize the presence of these skills in their students. "The key lesson for others may be to embrace e-learning technology before disaster strikes!" For instance, this e-application called ZOOM is making a lot of news because of its viable features. It allows conducting live online classes, web-conferencing, webinars, video chats, and live meetings. As most of the schools, colleges, universities, companies are closed due to lockdowns/curfews and most of the people are working from home, this app helped in keeping people connected via video conferencing. This application is trending on Google play store amidst the ongoing crisis. People are practicing social distancing so this application gave them a sigh of relief. Google Meet can also be considered, which provides online streaming of class without a break. In such panicky situations, where the lives of so many people are at stake, teaching and learning should be made interesting. This will also reduce the stress, fear, and anxiety levels of people. For this, proper technique and learning support should be provided to teachers and students and government support is also crucial at such stage. To make e-learning effective in such difficult times, we need to focus on the use of technology more efficiently, that is, the usage of that technology which has minimum procurement and maintenance costs but can effectively facilitate educational processes. Before bringing in and adopting any e-learning tool or technology, its pros and cons need to be weighed. Institutions should conduct plenty of research when bringing the right technology for different educational initiatives. There should be proper clarity on the purpose and context of technology adoption. As several factors affect the choice of a particular technology such as security features, availability and condition of laboratories, internet speed, internet access, and digital literacy levels of the beneficiaries, and so on.

Possible Solutions for Problems

A lot of issues are attached to online education but we cannot ignore the perks of it in times of such crisis. We can always have solutions to fix these difficulties. Technical difficulties can be solved through prerecording video lectures, testing the content, and always keeping Plan B ready so that the teaching-learning process cannot be hampered. Online courses should be made dynamic, interesting, and interactive. Teachers should set time limits and reminders for students to make them alert and attentive. Efforts should be made to humanize the learning process to the best extent possible. Personal attention should be provided to students so that they can easily adapt to this learning environment. Social media and various group forums can be used to communicate with students. Communication is the key when it gets difficult to try reaching out to students via texts, various messaging apps, video calls, and so on—content should be such that enable students for practice and improve their skills. The quality of the courses should be improved continuously and teachers must try to give their best. Online programs should be designed in such a way that they are creative, interactive, relevant, student-centered, and group-based.

Educators must spend a lot of time in making effective strategies for giving online instructions. Effective online instructions facilitate feedback from learners, make learners ask questions, and broaden the learner horizon for the course content. Institutions must focus on pedagogical issues and emphasize collaborative learning, case learning, and project-based learning through online instructions. The challenge to educational institutions is not only finding new technology and using it but also reimagining its education, thereby helping students and academic staff who are seeking guidance for digital literacy.

Free online platforms that support live-video communication

There are many live-video communication platforms available in web, but some of the free online platforms are as listed below which can be used by learners of all categories:

- **Zoom** – Cloud platform for video and audio conferencing, collaboration, chat and webinars.
- **Google Meet** – Video calls integrated with other Google's G-Suite tools. Video meeting recordings, Screen sharing, Join calls using Google Calendar
- **Skype** – Video and audio calls with talk, chat and collaboration features.
- **Facebook Live**- is a great fit for businesses, influencers, or individuals who are looking to broadcast demos, videos, or showcase their company culture while streaming live, followers on Facebook can comment and chat live, schedule videos ahead of time to gain excitement.
- **YouTube Live**-is a platform for demonstrating a product with live interaction, hosting an educational session to teach audience with screen sharing or using a whiteboard, having features with Location tags and advanced scheduling.
- **UberConference**- Unlimited Video and audio calls with talk, chat and collaboration features
- **FreeConference** is ideal for smaller teams or meetings, feature include Screen sharing, Document sharing, Text sharing etc.
- **Dingtalk** – Communication platform that supports video conferencing, task and calendar management, attendance tracking and instant messaging.
- **Lark** – Collaboration suite of interconnected tools, including chat, calendar, creation and cloud storage, in Japanese, Korean, Italian and English.
- **Teams** – Chat, meet, call and collaboration features integrated with Microsoft Office software.
- **TrueConf Online**-HD video with Collaboration tools (screen sharing, remote desktop control, recorded calls, file transfer and shared virtual whiteboard).
- **Slack Video Calls**- is good for teams looking for a supplementary video calling solution for small teams, features include individual calls and messenger services.
- **Lifesize Go**- No restrictions on meeting length, preferred for small group conversations.

Merits of online learning during lockdown

- Online Learning encourages more productive use of time which keep individuals safe from pandemic situation like spread of Covid-19.
- It has greater access to experts/specialists (nationally and internationally) and learners can access 24/7 at their own pace and time. It allows geographical reach even to rural or remote locations.
- It is a cost-effective technology which is quite affordable and enhances communication between educators and students. One educator can teach various virtual classes simultaneously which reduces travelling to various places. It can accommodate more learners at a particular time.
- Online class/conference session can be saved in website for future reference e.g. class notes can be saved and distributed via network for references by students. The digital recordings of the classes/meetings can be uploaded in website to review later.
- In order to conduct exams, institutions may consider using online examination software which may help for conducting online examinations. This will prevent institutions in facing delays in its annual academic calendar for lockdown.
- Very useful to some emergency service personnel like police, doctor and nurses etc. who are unable to spare a specific time to learn during lockdown can use the online recordings and pursue their education.
- Useful to women and physically handicapped learners who can learn at home.

Demerits of online learning during lockdown

- Not all children have the necessary knowledge, skills and resources to keep themselves safe online. Spending more time on virtual platforms can leave children vulnerable to online sexual exploitation.
- Learners from low-income families and disadvantaged groups are the more likely to suffer during online learning as they may not afford high-speed internet connection and required technical gadgets. It widens gap between privileged and unprivileged learners.
- It may lead to laziness with some students being at their home and may lack self discipline.
- The atmosphere of a face-to-face meeting is lost. Interpersonal relationship between students and teachers or between students may hamper.
- The security of personal data may be compromise as one can hack the digital devices without latest software updates and antivirus programs.

Perception of learners on online learning during lockdown

- Felt happy due to utilisation of time in attending online classes during the lockdown period. Initially, faced some difficulty in joining online classes but got acquainted later on.
- Feeling lonely and unable to share feelings with peers. Observed poor audio/video quality in some locality due to poor network.
- Some emergency service personnel like police, doctor and nurses etc. who do not get much time to interact in online classes make use the recordings of online classes to pursue their study during the lockdown have shown their satisfaction.
- Requesting to facilitate practical based classes through virtual laboratories.

- Requesting to upload all recordings of online classes in website for further reference of the learners as well as educators as per their requirements. Using the online recordings of classes/meetings learners are able to revise the concepts again and again to clarify their doubts for better understanding the subject.
- Online teaching should be delivered in local/regional languages so that everybody could interact comfortably.
- Improved required technical skills due to Online Learning program and requesting for provision of online examination during lockdown period.
- Online learning is felt to be less effective, less systematic and less organized than the conventional system of education. So, face to face classes for the same courses may conducted again after the end of lockdown
- Very effective for women and physically handicapped learners who can learn at home.
- Do not receive prior information on online class or induction meeting schedule and cannot attend.
- Feeling unhappy for not having required technical knowledge to join online learning and unable to afford required technical gadgets with high speed internet for online learning.

Perception of educators for online learning during lockdown

- Felt happy due to utilisation of time in conducting online classes during the lockdown period. Initially, faced some difficulty in conducting online classes but got acquainted later on and conducted the classes smoothly.
- Ensuring prior information on online class or induction meeting schedule would help the educators in better preparation of subject matter for efficient delivery of online classes/induction meetings.
- All recordings of online classes should be uploaded in website for further reference of the learners as well as educators as per their requirements.
- As the lockdown was declared unexpectedly, most of the institutions could not decide the rates of remuneration of educators for online classes. So, the financial issue relating to remuneration and expenditure towards internet data package should be clarified by the host institutions.
- As the learners are present at scattered places during online classes, it becomes difficult for an educator to monitor their activities in real time. It is also difficult to draw their attention towards the subject matter during the online classes.
- Very poor attendance and less interaction of learners are observed in online classes. Sometimes poor video and audio quality obstruct in smooth functioning of online classes.

Suggestions

Some useful steps for smooth functioning of Online Learning are as suggested below:

1. Online platforms with enhanced safety and safeguarding measures, especially for virtual learning tools should be ensured. The devices must have the latest software updates and antivirus programs otherwise the security of personal data may be compromised as one can hack the digital devices.
2. High speed internet connectivity should be ensured in order to improve smooth access for all including learners of disadvantaged groups and low-income families.
3. All should follow the new guidelines released by UNICEF and partners to keep kids safe during online classes.
4. Schools should monitor good online behaviours of children while conducting online classes.
5. Parents should ensure that children's devices have the latest software updates and antivirus programs. They should work with children to establish rules for how, when, and where the internet can be used. They should also speak to their children on how and with whom they are communicating online.
6. Social networking platforms should enhance online platforms with more safety measures, especially while using virtual learning tools.
7. Government should take necessary steps to train all stakeholders of education on online learning platform to tackle such crisis of lockdown during any pandemics. Government should create awareness on online education with safety measures for children and take measures to create awareness on cyber security.
8. Online learning is not affordable for all including the poor and disadvantaged groups of the society. So necessary steps should be taken by Government/educational institutions to minimize this gap between privileged and unprivileged learners.
9. Learners and educators must be familiar with Web-based interactions such as email, discussion boards and chat rooms before joining online classes.
10. Government/educational institutions should adopt the policy to provide free internet and free digital gadgets to all learners in order to encourage online learning as a result of which people would get engaged themselves during lockdown and remain safe from pandemics.

Conclusions:

E-learning can help in providing inclusive education even at the time of crisis. Such systems need to be developed in educational institutions that make sure that no student is getting deprived of education due to their location, social class, ethnicity, and so on. Online methods of teaching support and facilitate learning-teaching activities, but there is a need to measure the pros and cons of technology and harness its potentials. Disasters and pandemic such as Covid-19 can create a lot of chaos and tensions; therefore, there is an important need to study the technology deeply and with due diligence to balance these fears and tensions amidst such crisis. Based on current situation there is a possibility for coming across with much more advanced and cheaper system which will help learners to have access and teachers can also contribute their efforts to develop more interactive material which may stay for long period of time. Online Learning is the most common method of distance learning today. During the lockdown period for Covid-19, online learning is the best platform to keep learners/educators engaged and safe by maintaining social distancing. Govt. of India has initiated different online learning platforms to continue educational activities during lockdown period which are also been recognized by UNESCO and World Bank. Online Learning method utilizes various applications of the internet to distribute classroom materials and help learners and educators interact with one another. Using the various technologies available for Online Learning, educators can provide a more interactive distance learning experience by delivering real-time, synchronous video conferencing. Online learning is

considered as future learning process and this platform has a potential of overall change in pedagogy of teaching learning in the modern world. However, necessary steps must be taken to train all stakeholders of education on online learning platform. Government/educational institutions should adopt the policy to provide free internet and free digital gadgets to all learners in order to encourage online learning as a result of which people would get engaged during lockdown and remain safe from pandemics. Online Learning is the best method of learning at this time of lockdown due to the outbreak of Covid-19 and further in-depth statistical study may be undertaken on impact of online learning during lockdown period

References

1. Ayebi-Arthur, K. (2017). E-learning, resilience, and change in higher education: Helping a university cope after a natural disaster. *E-Learning and Digital Media*, 14(5), 259–274. <https://doi.org/10.1177/2042753017751712>
2. Affouneh, S., Salha, S., N., & Khlaif, Z. (2020). Designing quality e-learning environments for emergency remote teaching in coronavirus crisis. *Interdisciplinary Journal of Virtual Learning in Medical Sciences*, 11(2), 1–3.
3. Barboni, L. (2019). From shifting earth to shifting paradigms: How webex helped our university overcome an earthquake. CISCO, Upshot ByInfluitive.
4. Basilaia, G., Dgebuadze, M., Kantaria, M., & Chokhanelidze, G. (2020). Replacing the classic learning form at universities as an immediate response to the COVID-19 virus infection in Georgia. *International Journal for Research in Applied Science & Engineering Technology*, 8(III).
5. Baytiyeh, H. (2018). Online learning during post-earthquake school closures”, *Disaster Prevention and Management. An International Journal*, 27(2), 215–227. <https://doi.org/10.1108/DPM-07-2017-0173>
6. Brianna, D., Derrian, R., Hunter, H., Kerra, B., & Nancy, C. (2019). Using EdTech to enhance learning. *International Journal of the Whole Child*, 4(2), 57–63. Briggs, B. (2018). Education under attack and battered by natural disasters in 2018. *TheirWorld*. <https://theirworld.org/>
7. Carey, K. (2020). Is everybody ready for the big migration to online college? Actually, no. *The New York Times*. <https://www.nytimes.com> Chang-Richards,
8. Di Pietro, G. (2017). The academic impact of natural disasters: Evidence from the L’Aquila earthquake. *Education Economics*, 26(1), 62–77. <https://doi.org/10.1080/09645292.2017.1394984>
9. Favale, T., Soro, F., Trevisan, M., Drago, I., & Mellia, M. (2020). Campus traffic and e-Learning during COVID-19 pandemic. *Computer Networks*, 176, 107290.
10. Huang, R. H., Liu, D. J., Tlili, A., Yang, J. F., Wang, H. H., Zhang, M., Lu, H., Gao, B., Cai, Z., Liu, M., Cheng, W., Cheng, Q., Yin, X., Zhuang, R., Berrada, K., Burgos, D., Chan, C., Chen, N. S., Cui, W., Hu, X. et al. (2020). Handbook on facilitating flexible learning during educational disruption: The Chinese experience in maintaining undisrupted learning in COVID-19 outbreak. Smart Learning Institute of Beijing Normal University.
11. Kebritchi, M., Lipschuetz, A., & Santiago, L. (2017). Issues and challenges for teaching successful online courses in higher education. *Journal of Educational Technology Systems*, 46(1), 4–2
12. V. Madhukar, (2021) Recommendation System in E-Commerce, *IJMER*, ISSN: 2277-7881
13. Liguori, E. W., & Winkler, C. (2020). From offline to online: Challenges and opportunities for entrepreneurship education following the COVID-19 pandemic. *Entrepreneurship Education and Pedagogy*. <https://doi.org/10.1177/2515127420916738>
14. Littlefield, J. (2018). The difference between synchronous and asynchronous distance learning. <https://www.thoughtco.com/synchronous-distance-learning-asynchronous-distance-learning-1097959>
15. V. Madhukar (2021) Role of Recommendation system in E-Business, ISSN 2582-3930
16. Partlow, K. M., & Gibbs, W. J. (2003). Indicators of constructivist principles in internetbased courses. *Journal of Computing in Higher Education*, 14(2), 68–97.
17. Parkes, M., Stein, S., & Reading, C. (2014). Student preparedness for university e-learning environments. *The Internet and Higher Education*, 25, 1–10. <https://doi.org/10.1016/j.iheduc.2014.10.002>
18. Rieley, J. B. (2020). Corona Virus and its impact on higher education. Research Gate. Save the Children. (2014). No child left behind, Education in crisis in the Asia-Pacific Region Victoria. Save the Children. (2015). “Half of all school attacks in Syria.” www.savethechildren.org./2015-09/half-all-school-attacks-Syria-0
19. Singh, V., & Thurman, A. (2019). How many ways can we define online learning? A systematic literature review of definitions of online learning (1988-2018). *American Journal of Distance Education*, 33(4), 289–06.
20. Tull, S. P. C., Dabner, N., & Ayebi-Arthur, K. (2017). Social media and e-learning in response to seismic events: Resilient practices. *Journal of Open, Flexible and Distance Learning*, 21(1),
21. Allen, I. E., & Seaman, J. (2013). *Changing course: Ten years of tracing online education in the United States*. San Francisco, CA: Babson Survey Research Group and Quahog Research Group
22. Bell, B. S., & Fedeman, J. E. (2013). E-learning in postsecondary education. *The Future of Children*, 23(1), 165-185.
23. Bryant, J., & Bates, A. J. (2015). Creating a constructivist online instructional environment. *TechTrends*, 59(2), 17-22.
24. Coppola, N. W., Hiltz, S. R., & Rotter, N. G. (2002). Becoming a virtual professor: Pedagogical roles and asynchronous learning networks. *Journal of Management Information Systems*, 18(4), 169-189.
25. Coursera. (2012). Retrieved from <https://www.coursera.org>
26. DD news. *UGC forms committee to encourage online learning amid lockdown*. Retrieved on April 16, 2020 from <http://ddnews.gov.in/national/ugc-formscommittee-encourage-online-learning-amid-lockdown>
27. Google search. *Best Free Video Conferencing Tools*. Retrieved on April 15, 2020 from <https://www.owllabs.com/blog/video-conferencing-tools>
28. Joshua Stern. *Introduction to Online Teaching and Learning*. Retrieved on April 17, 2020 from <http://www.wlac.edu/online/documents/otl.pdf>
29. UGC notice. *An Appeal for Inviting ideas/ suggestions for “Bharat Padhe Online campaign”*. Retrieved on April 16, 2020 from <https://www.ugc.ac.in>.
30. UGC notice. *LET COVID 19 not stop you from learning- ICT initiatives of MHRD & UGC*. Retrieved on April 16, 2020 from <https://www.ugc.ac.in>.

31. UNESCO. COVID-19 *Educational Disruption and Response*. Retrieved on April 14, 2020 from <https://en.unesco.org/covid19/educationresponse>
32. UNESCO. *Distance learning solutions*. Retrieved on April 14, 2020 from <https://en.unesco.org/covid19/educationresponse>

