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## ONLINE LEARNING TRENDS DURING THE PANDEMIC PERIOD 2020

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### Abstract

With the hard hitting of the pandemic in the world, the whole of the educational world changed its orientation from face-to-face classroom teaching to online mode. Online education was already booming in pre-covid times. While many educational institutions were adapting to technology usage in teaching learning process, the pandemic compelled everyone concerned to work entirely through online mode. Although the online platforms acted as a saviour as for the continuation of academic session during the sudden shutdown of schools, colleges and universities due to COVID-19, yet it posed many problems alongside. One of the major problems was a sense of loneliness among the learners while working remotely through online mode. This article intends to propose Online Collaborative Learning (OCL) as a genuine solution to overcome this challenge. Besides the recent developments in online learning, the authors have discussed: firstly, the use and relevance of OCL, especially during the COVID times; secondly, OCL activities and strategies used by institutions and researchers to study its effect; thirdly, the challenges being faced using OCL during pandemic; lastly, suggestions for future usage of OCL. This paper is a sincere effort to provide to the point, specific and detailed explanation of technical aspects of OCL approach and methodologies as tested and validated by various researchers during the COVID-19 times. It also recommends to explore this area of research in India too, where very less research is found with this regard.

**Keywords:** Online Learning, Hybrid Learning, Pandemic, COVID-19, Online Collaborative Learning.

### 1. INTRODUCTION

The pandemic of Covid-19 has accelerated the adaptation of online learning in the education system, which was earlier making its supplementary position in the traditional classrooms, comparatively, at a gradual pace. With the outbreak of the pandemic, the students and teachers were left with no option other than taking virtual classes, to avoid the deadly infection of corona virus. Suddenly, who were not much friendly with the online mode of teaching and learning, started talking about virtual learning platforms like a pro. Zoom, google classrooms, you tube, face book etc. emerged altogether and took a forefront in the educational scenario. Whereas, online learning platforms appeared to be a saviour of education in pandemic times, it created a lot many problems, which acted also as an eye opener with regards to some ground realities about providing education through online mode. Before talking about the challenges that online learning faced during the school closures, let us take up the benefits and the newest trends in education in the virtual classrooms.

### 2.RECENT DEVELOPMENTS IN ONLINE LEARNING- A SUDDEN SHIFT FROM TRADITIONAL CLASSROOM LEARNING

Online learning was already making its inevitable space in the classrooms during the pre-Covid times. But with the outbreak of the pandemic, a complete shift to the virtual classrooms replacing the traditional ones, with the teachers, students and parents totally unprepared, created a feeling of uncertainty and nervousness among all. The teachers were forced to change and implement the lesson plans in the virtual classrooms, which were originally planned for the traditional classroom teaching, with almost no time for preparation. Although, technology usage is common in the classrooms nowadays, but not all the teachers or students feel comfortable with it. They were still in the learning phase when the pandemic happened. Despite of all the challenges, online mode of education acted as a saviour for the continuation of education during the closure of schools, colleges and universities.

According a report published in World Economic Forum by Li and Lalani (April, 2020), there was already high growth and adoption in education technology, even before Covid-19, with global edtech investments reaching new heights due to pandemic. There has been a significant surge in usage since Covid-19, whether it is virtual tutoring, video conferencing tools, language apps, or online learning software. As mentioned in the report, research has suggested an increase retention of information by taking less time through the online learning, meaning the changes coronavirus has caused might be here to stay.

According to Gaba, Bhushan and Rao (2021), "most of the educational institutions in India adopted different approaches at their respective educational institutions during the lockdown. They were encouraged to adopt national and global digital resources to continue studying learners during this unprecedented situation. The Ministry of Education (formerly known as the MHRD),



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Government of India, and University Grants Commission (UGC) also put a strong focus on various schemes for the use of ICT for online learning in the country during COVID 19, like 'Study Webs of Active Learning for Young Aspiring Minds (SWAYAM)' for online Courses, UG/PG MOOCs, E-PG Pathshala, e-Content courseware in UG subjects, Swaymprabha, CEC-UGC YouTube channel, National Digital Library, e-ShodhSindhu, and Vidwan (UGC, 2020). National Programme on Technology Enhanced Learning (NPTEL) initiated by seven Indian Institutes of Technology (IITs) along with the Indian Institute of Science (IISc), Bangalore, to provide quality education to anyone. The primary goal of this project was to create web and video courses in engineering and physical sciences at undergraduate (UG) and postgraduate (PG) levels and management courses at the postgraduate level. Under this project, the Ministry of Education appointed nine National Coordinators for different programs, IGNOU being one among them for certificate and diploma level programs."

Thus, a collective effort was made to minimize the loss of education. But the students and teachers missed the traditional classroom in terms of one-to-one connectivity, the regular conversations and a sense of community. Many institutes adopted virtual collaborative learning activities to fill the gap. Researches have also been done recently, to explore the usage of OCL in online classes and in attempt to make virtual classroom as close as to the traditional ones. The next section is set to discuss the use of CL in online classes during pandemic.

### 3. ONLINE COLLABORATIVE LEARNING

As mentioned in the previous section OCL approach is adopted to avoid the feeling of loneliness while studying on virtual platforms. "The distinction between online collaborative learning and online learning is that the former uses collaborative learning techniques such as group work while the later may not. The communication among the participants may occur in two ways: asynchronous and synchronous. "Asynchronous refers to the ability of people to communicate at times and places of their choosing, such with the use of electronic mail. Asynchronous communication is delayed time communication (email, voice mail, computer conferencing, forums). It is usually contrasted to real time, synchronous, communication which refers to the use of a communication medium by people at the same time. Telephoning, instant messaging and chat rooms are synchronous. The asynchronicity of computer conferencing offers one of the most significant educational advantages: the capability of learners to use it at their own convenience", (Hiltz, 1994).

#### 3.1 USE AND RELEVANCE OF ONLINE COLLABORATIVE LEARNING IN EDUCATION DURING COVID-19

To make online learning a success, student to student and teacher to student communication is critical. Remotely studying at your place through a virtual classroom, doing your assignments individually, with no peer interaction or interaction with the teacher, can be truly frustrating. Ramasubramanian and Wolfe (2020) stated, "At its best, dialogue promises to bring together people with different worldviews, life experiences, stakes, interests, and goals and provide opportunities for perspective-taking, learning, open-mindedness, and turn-taking." Dialogue is an important tool for promoting inclusivity in the classroom (Sousa, 2021).

According to Cobb (2021), the most frustrating factor about remote learning during covid-19 time, was the loss of community. The regular classroom atmosphere, the conversations and interactions were being missed by the students. Blankenstein, Frederick, and Wolff-Eisenberg (2020), in a survey of over 15,000 students during spring 2020, found that students lacked "a sense of belonging and connection to others at their institution. While they felt somewhat connected to their instructors, few reported feeling very connected to other students."

Subramanian (2021) explained the significance of collaborative learning even in the digital age. To quote his stance, "peer-to-peer learning is fun and engaging for students, especially when it comes in the form of digital game-based learning. Increased engagement means that students are actively participating and involved. Collaboration also helps develop a social support for learners and establishes a positive atmosphere, which leads to higher productivity. Furthermore, utilizing collaborative learning can also lead to better retention of knowledge. Many cite competitive learning as the antithesis of collaborative or cooperative learning, as it allows only one student to emerge at the top. This inevitably leaves other learners discouraged or unengaged. The pressures associated with competition can also lead to mental health issues that can be detrimental to overall well-being. Additionally, when competitive learning is encouraged, earning high grades and teacher approval may seem more important than actual learning."

Thus, the inclusion of collaborative learning becomes crucial in the online education system. Even of more importance is to understand the tools and techniques and to achieve the mastery to use them, so as to expect productive OCL experiences. In the succeeding section recent OCL activities being applied by institutions and research studies have been discussed.



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### 3.2 ONLINE COLLABORATIVE ACTIVITIES DURING COVID TIMES

To understand the latest online collaborative activities tested and implemented in the online classes, during the pandemic, a study of recent work done in the field, was conducted. The tools and techniques of OCL being used in these research studies has been summarized in the following sub sections:

#### 3.2.1. GOOGLE APPLICATIONS

To refer first, Cobb (2021) in his study formed small teams of three to four students wherein 2 to 3 students from each learning team acted as a representative and uploaded their notes through Google document which is a shared space with all the team mates. The members who do not participate during the class session, were responsible for editing, annotating and reading the notes in the next session as taking their turn to be the next team representative. The exams were taken at the end, individually as well as team wise. Zoom sessions were held to facilitate collaborative completion of the exam activity. The final result for this assignment was an average of individual and team-based score. Students, in their feedback, responded that although being hesitant earlier to working in teams, they gradually found it beneficial. They developed the skills of listening to their team mates, improved their writing skills. They were immensely gained by listening to diversified opinions and perspectives of their learning partners, on a single issue. Being accountable for collective learning served as a motivating factor; and finally, it created a sense of belonging and a sense a community with their teammates. Thus, google docs and Zoom sessions were used for collaboration. For evaluation, the average of individual and collective performance was taken to consideration.

Parichat (2021) also explored the use of Google Applications for Education in an English Language learning classroom for creating collaborative learning groups. The results of the qualitative study to know the students' opinion, about the use of Google Classroom, Google Docs, Google Meet, and Google Forms, in an English online course during the Covid-19, showed a positive attitude of the students towards the usage of these applications. Using these applications, they were able to enhance their English language skills, grammatical and lexical knowledge.

#### 3.2.2. PROBLEM BASED LEARNIGN (PBL)

PBL (problem-based learning) method was used by Hira and Anderson (2021), who conducted a qualitative survey on 11 problem-based learning teachers from 4 schools to know about the use of problem-based learning in online classrooms during pandemic. They reported that:

- i. PBL had personal meaning and relevance to their students' lives. When the students had to learn remotely the teachers designed the lessons relevant to them and also feasible to perform. Thus, the students planned their own projects, the material required and what they already have.
- ii. The students during PBL were autonomously working, directing their own work, at their own pace. The teachers reported that the students were the most creative during their project work, even the ones who struggled during traditional classroom work.
- iii. Social distancing was the major drawback during lockdown. Although the schools continued through online mode, there was a missing factor of connection with their classmates. The teachers reported during their interviews that the students did miss the energy and liveliness of the regular classroom teamwork. Thus, the students struggled and find it challenging while working in teams through online mode which was lacking in the regular sense of belonging and community.
- iv. PBL in the virtual classes helped in developing competencies such as planning and managing their own work, use of technology, typing skills, email writing etc.

#### 3.2.3. VIRTUAL REALITY TECHNOLOGY (VR)

Virtual Reality Technology was applied on the international students, who too had to bear a lot regarding their studies during the Covid times. According to Liu and Shirley (2021) the students studying abroad were greatly affected by the restrictions imposed on travel due to the pandemic. They conducted a case study in which they incorporated Collaborative Online International Learning (COIL) pedagogy approach and virtual reality (VR) technologies into the curriculum of an international course to be run through online mode. The countries involved were U.S., Germany, Brazil and India, which resulted in cultural exchange and intercultural competence development. An intercultural VR activity was created eg. Creating virtual tours about their countries, cities and institutions using Google tour creator (GTC) and present it to the class. Synchronous and asynchronous activities were created, the timetable was made to accommodate different time zones.

As students were satisfied with the redesigned online study-abroad course, Liu and Shirley (2021) suggested for redesigning traditional study-abroad courses into fully online COIL courses. VR cultural exchange, being a successful substitute during COVID-19 pandemic, cannot replace a full immersion in a different country. Additionally, students seek for more meaningful and subject-related web VR learning activities integrated into the course. The study further suggested that the future study-abroad courses should



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consider flipped online course design to include short lectures, with more time for student-teacher and student-student interactions. Online course schedule and student communication should accommodate different time zones. For facilitate the students' intercultural online collaboration, more training and scaffolding are needed.

### 3.2.4. COLLABORATIVE TECHNOLOGIES MODEL

Collaborative Technologies Model for supporting the hybrid format of distance learning was explored by Masalimova, et. al. (2021); It was not only helpful in traditional methods of teaching to implement the learning activities, but also in virtual format to create active learning environment. The study utilized the "e-mail, blogs, forums, chats, video and mobile services for the formation of sites based on collaboration platforms Moodle and Zoom carry out development and implementation of theoretical and practical foundations of this approach." The study authenticates the effectiveness of "platform models of distance learning's hybrid format for students in the conditions of a post-pandemic perspective."

Masalimova et. al. (2021) demonstrated that "the use of collaborative technologies in the implementation of a hybrid format of distance learning for students allows to eliminate the routine work of synchronizing workplaces from any supported devices – workstations, tablets, smartphones; eliminate duplicate artifacts; delete unnecessary emails in the mailbox by aggregating several notifications in one email; create competent collaborations; various types of convenient feedback; reuse of artifacts; automatic publication on the Internet."

The three levels of implementation of this model were established: "The first level is **informational**. It is characterized by a focus on assisting students in obtaining methodical support for collaborative interaction in the educational process. The second level is **instrumental**. It is represented by a variety of tools that are characterized by free of charge and the speed of their implementation in the hybrid format of distance learning. 1. Universal technologies: i) Microsoft Office 365 Education; ii) Google-G Suite for Education. 2. Specialized technologies for creating artifacts: development of software tools for beginners and for serious teamwork; creation of intelligence maps; writing scientific papers; work with bibliography and citation; support for project management. Third level. **Responsibility for collaboration** in the process of interaction between the teacher and students. The introduction of collaborative technologies radically changes the interaction between the teacher and students, initially changing their worldview." (Masalimova et. al., 2021)

### 3.2.5. SIGNIFICANT EFFECT OF OCL DEMONSTRATED BY THE FOLLOWING STUDIES

Stankovska et. al. (2021) studied the relationship between online learning, social presence and satisfaction with online courses among university students. A significant positive relationship was found among the three variables. A significant positive relationship between social presence, student autonomy, satisfaction, instructor support, interaction and collaboration and authentic learning was found. It was concluded that designing types of assignments, involving collaboration among students, and instituting authentic learning experiences that align with students' interest, would improve students' social presence, students' satisfaction and online learning in online courses.

**Tsang, So, Chong, Lam, Chu (2021)** recognizes the importance of understanding the predicting factors of learning effectiveness to bring improvement in CoOL (Collaborative Online Learning). The results displayed that student-student dialogue, instructor-student dialogue, course design is significant for learning effectiveness of CoOL.

**Batmang et. al. (2021)**, who took up the pre-service teachers as their sample and stated in their qualitative study that the pre-service teachers' enthusiasm in online learning is linked to student engagement which helped them to overcome laziness. The subjects showed their desire to communicate with others while working online.

Summarizing the above review, it can be said that there are several tools, strategies and approaches of OCL available, provided that the institutions select and apply them wisely. As per the application of OCL, the challenges faced by teachers and researchers are being discussed in the next section.

## 3.3 CHALLENGES

When the online learning was implemented during the pandemic certain ground realities came to the surface such as, unequal division of resources among the students belonging to different classes, regions and social status. Many students experienced deep stress due to inability to take benefit of virtual classes due to lack of resources. Teachers and parents were equally challenged with this sudden shift of education to virtual platforms.



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Purwadi et. al. (2021) stated that "students' perceptions of online learning aren't pleasant in the process. First, the main support for online learning is internet access or network, while not all regions have good **internet access or network or 4G**. The second is **parents' income** because they are depressed due to the COVID-19 pandemic, or parents of students who are fired, greatly affect student funding for studies or facilitating online learning." These two conditions have a major impact on research results on the perspective of online learning on cognitive and emotional aspects.

Critchley (2021) reported that "When it came to the **assessments** themselves, a number of issues were being encountered:

- a) For pre-recorded oral assessments, it proved not possible to submit video due to large file sizes. As a result all pre-recordings were audio only;
- b) Several students, but not as many as first feared, had connectivity problems. For those who were unable to upload, it was being managed to organise an alternative live assessment, usually via mobile video;
- c) A number of students clearly over-prepared, and on occasions read from scripts, contrary to the usual spontaneity desired from a speaking exam. In isolated cases, it was also suspected instances of self-plagiarism or impersonation, which proved difficult to confirm in every case; and
- d) There were a number of students who had fallen ill themselves with coronavirus, or had complex domestic circumstances, including caring for other family members who were unwell, and we had to re-schedule a higher than usual number of assessments."

Encapsulating, the major challenges faced in OCL and online learning as a whole were, network and connectivity, family income and resources, assessment of online assignments. To overcome these issues government must take necessary actions to provide basic facilities to the students, teachers and schools; so that learning at virtual platforms may become smooth in the future. Parents' involvement should also be sought. The parents with minimum or no education can be given a basic understanding of the online learning, so that they may assist or supervise their child's online class sessions. To make the maximum out of OCL in the coming times further suggestions have been given in the next section.

### 3.4 SUGGESTIONS FOR THE FUTURE USAGE OF OCL

Merritt (2020) suggested that "with access to 1:1 device and the internet, opportunities for collaboration abound." Four online collaborative tools were suggested:

- (i) **Breakout rooms:** When small groups meet, each student is engaged and has a voice. Videoconferencing platforms like Zoom allow small groups to meet at the same time under a teacher's control. Platforms like Google Meet allow for parallel meetings. Set protocols for using cameras and microphones, engaging through the chat-box and screen sharing safely;
- (ii) **Shareable documents** allow each student to complete their section and pass it on to the next person. Programs like Google Suite and Classkick give multiple students access to the same shareable document at the same time, allowing for real-time collaboration;
- (iii) **Discussion boards** can be used in real-time or asynchronous instruction, depending on the platforms and settings you choose. With Padlet, all students respond to the same prompt at once, then comment on each other's ideas. Learning management systems like Canvas and Blackboard allow students to post any time, with deadlines for discussions to close;
- (iv) **Interactive digital whiteboards** work best with touchscreen devices and a stylus, but might work, too. As with real whiteboards, digital whiteboards allow students to share their thinking with peers. They are great for quick formative assessments, as well." These tools must be tested and used for sometimes, so that everyone involved (students, teachers and parents) may get used to it, before moving to the new ones.

Sousa (2021) suggested a few tips to improve communication in a classroom, be it a traditional one or an online one, the following suggestions may help in creating an engaging environment:

- a) Establishing a genuine engagement with the learners is the key for successful beginning of an online course. Christopher (2015) recommended the following for online interactions: "(i) Greet each student, even virtually; (ii) Pay particular attention to how you, the educator, communicate. Be clear and excited to engage; (iii) extra attentive to feedback, including nonverbals (if possible) and chat boxes/discussion posts."
- b) Plan and use deliberately the purpose of the conversation. It must be real and spontaneous without making authoritativeness.
- c) Let the students to participate in forming the rules, questions and purpose of the communication.
- d) Certain rules can be reinforced for an effective communication.

Ramasubramaniam, Sousa, and Gonlin (2017) offered the following as a foundation for such communication:

- (i) Active listening—Listen to understand, not only to respond;



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- (ii) Balanced airtime - If you usually talk a lot, let other voices be heard. If you are typically quieter, try to get out of your comfort zone and share;
- iii. Confidentiality - Who says what, should stay in the room; opinions offered here should not have consequences for participants outside of this safe space. Discussing issues is OK; discussing names is not;
- (iii) Assume good intentions - Everyone has different levels of understanding about certain issues, so give others the benefit of the doubt;
- (iv) Make “I” statements— “I think that...” “My experience is...” Don’t say “Those people are...”; vi. Avoid vulgar language”;
- (v) Any discomfort in the communication must be addressed to;
- (vi) Allow students to prepare for a difficult dialogue. Give students the opportunity to be reflexive before communication begins. It will give them an opportunity to fully form their thoughts and aid in their comfortableness with sharing”;

A suggestion offered by Ramasubramanian and Wolfe (2017): "i. Make sure the conversation does not stop; give students other action steps to continue the learning process once the formal discussion is over; ii. Give students an opportunity to write down their thoughts after the discussion and make sure to follow up with students and/or the class if the conversation seems incomplete; iii. Example questions to ask: What in the readings was new information for you? What did you find confusing or surprising? How does this challenge your thinking or beliefs?" (Ramasubramaniam, Sousa, & Gonlin, 2017).

The institutions need to carry out small tryouts or action researches over the usage of these tools, strategies and the best suited to the curriculum requirements can be adopted. Apart from that, the Government must take the responsibility to provide the resources for successful implementation of virtual learning and OCL.

#### 4 CONCLUSION

In nutshell, the field of OCL requires a lot of tests and trails before the formulation of a final model to be applied on Indian virtual education system.

For that matter, the Government should take initiatives to conduct researches and to encourage researchers to work in the field of OCL. Furthermore, it should be understood that the key factor in the success of online learning is building a strong relationship with the learners and among the learners, for which collaborative learning should be made inclusive in the virtual learning system and should be analyzed to bring advancements in this learning methodology.

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