Comparison of online and offline teaching methodology: Role of students-teachers and their effect on them during COVID-19 pandemic scenario

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Abstract
The current requirement of online teaching methodology adopted by teachers, students and other educational institutes in COVID-19 pandemic situation has resulted in drastic change in imparting education. It has certain significant advantages and disadvantages over offline teaching and learning modes. Moreover, conduction of online webinars, orientation courses, PhD presentations of scholars and virtual conferences for the first time during this pandemic stage had made a requirement for its comparison with real and offline education scenario. Our present study deals with analyzing positive and negative impacts of these online-offline modes on teachers, learners and other education systems. Online mode has made approaching each other fast and easy, with no travelling time, no travelling allowances and comfortable access. However, it lacks the professional environment and its technical dependence makes it comparatively less interesting and interactive as compared to offline modes. Online mode has made accessible sharing of views, organizing invited talks, conducting PhD seminars and evaluations from distant areas speakers, examiners and invited talks through video-audio mode easily. But on account of virtual mode of interaction, appropriate eye to eye contact with each other, simultaneous management of sharing documents and presenting views becomes difficult. Our study is based on analysis of online classes, presentations, webinars and PhD defending done by Panjab University, Chandigarh staff and students during COVID-19 pandemic scenario. These experiences have been interviewed by Panjab University staff, teachers, research scholars and students. Their viewpoints have been taken regarding their varied responses towards online and offline teaching and presentation modes.

Keywords: Online-offline teaching, webinars, teaching methodology, Panjab University, students, teachers

Introduction
An unexpected prolonged COVID-19 scenario has affected each profession, community and individual in one way or the other [1, 2]. From March, 2020 onwards due to essential requirements of social distancing and avoiding social gatherings, schools, colleges, universities and other educational institutes have undergone drastic change in their teaching methodologies [3]. Moreover, with enhancement in utilizing technological skills, significant amendment in learning and teaching skills has been observed. A learner can choose to exploit the advantage and disadvantage of online and offline skills. However, in case of continuous professional development (CPD), there are pros and cons of both skills. Therefore, in order to decide the priority to be given to online or offline mode depending on specific situation and task, we need to understand important difference between them. The basic difference between online and offline teaching is location [3]. For offline teaching proper seminar room with facility of assembling appropriate gathering as per the requirement is maintained. Online mode education can be conducted from home, coffee shop or any other convenient place by simply logging from their computer, laptop or mobile. Therefore, the advantage of online over offline teaching mode is time management. This is because during offline teaching some time is wasted in reaching campus. Moreover, it has 24×7 access and time flexibility can be done as per the convenience of a learner and a teacher. Moreover, professional network can be easily expanded from people of distant areas, regions and countries. Therefore, we can get the benefits of all type of tutorials, seminars and other talks from people belonging to other countries as well. Ample channels for learning and teaching
are available in online mode, like online chat, video conferences and emails. This makes learning quicker and faster, as doubts can be immediately dropped through mail and replied in a similar manner. In online, a learner or a teacher has to simply log in and immediately join the class. In traditional teaching method, i.e. offline mode, a teacher represents a sender or source of information, message and education material and a student is referred as receiver of that information. Teaching methodology involves chalk and talk, utilizing projector for presentations and oral demonstrations. Students listen long lectures and prepare notes. Sometimes, it becomes difficult to manage listening and writing simultaneously. However, the biggest advantage of offline teaching is social interaction, ability to cope up with situations, have fun with friends and to undergo informative learning through interaction and discussions with friend in groups. Offline teaching tends to bring all students belonging to different community under a common platform which makes students get to know about each other customs, lifestyles and other habits easily. This may not be possible through online modes. One major drawback of online teaching is job insecurity. An offline teacher gets salary on monthly basis, but it a risk or an online teacher. Technical issues are another drawback for online mode of teaching, which does not allow class smooth functioning, even if a teacher is well prepared for the lecture. No such technical issue is there for offline teaching methodology. Online teaching can be only successful if students maintain alert and conscious due to teacher’s physical presence. On account of unpredictable COVID-19 pandemic situation, during lock down stage, many schools, college and educational institutes had started following online education system [4]. This was due to shut down of these educational institutes on account of maintaining social distancing norms and preventing children and students from this pandemic [4]. Initially, it was difficult for teachers and students to train themselves for this teaching methodology [5]. The unavailability of independent laptops, mobile phones to learners and teachers added another limiting factor. This is because, work from home was made mandatory for most of the people. Therefore, even other professional institutes also gave their employees work from home during this pandemic. The problem of time clashes of family members for using online services for their professional task made the requirement of personal and independent laptops or smart phones for each family member. Some senior teachers were not tech savvy and had to take training from their children for conducting online classes. This factor resulted in a mandatory amendment in technology skill of each individual belonging to any age or community [5, 6]. It can be considered as an advantage of modification in teaching skills of teachers, professors, children and other working staff. The present study deals with effect of pandemic and sudden initiation of online teaching methods by Panjab University and their affiliated college’s teachers. It also emphasizes the role of parents in training their children for online classes and utilizing it efficiently. Comparison has been made with the problems faced by parents lacking technology friendly modes. Both positive and negative impacts on research scholars of Panjab University of online webinars and discussions with PhD. supervisors are discussed. Response of students and teachers towards online teaching and learning methodologies are taken regarding their experiences in online learning mechanisms.

**Methodology**

On account of ought utilization of online mode for interviewing students, due to pandemic norms, most of the interview schedules of teachers, parents and students were done via video conferencing. As a Panjab University teacher, I have also included me, my student’s and other colleague’s experiences during online classes. As per the Panjab University guidelines, on account of sudden shut down of educational institutes, in order to complete the syllabus, teachers were instructed to take online classes from April, 2020 onwards [5, 6]. To organize group classes, appropriate software’s were required, which were easy and free to access. An online conference conducted by University Institute of Engineering and Technology Panjab University, Chandigarh in the month of May, 2020 through Cisco Webex software had significantly contributed in training teachers, students and scholars for this software. Moreover, it paved the way of managing talks from invited speakers from abroad through online mode. The experiences of organizers, participants and speakers were analyzed during this two days virtual conference. From this, came the idea of conducting defending of PhD. thesis of Panjab University research scholars. Therefore, many supervisors completed the pending PhD. viva of research scholars due to pandemic. This is because on account of pandemic norms and unavailability of inter-state transport, it was difficult for external examiners to personally come to Panjab University to evaluate PhD. students. PhD. defend program were conducted while sharing web link of meeting of PhD. candidate viva including supervisors, candidate and examiner with public (Panjab University). A public notice was also put up in the respective department inviting the public to join the web link. This was done so as to maintain the decorum and rules of conducting PhD. viva while simultaneous management of pandemic norms. Both positive and negative aspects of virtual mode of PhD. viva program were analyzed in detail and provided in results and discussions section. Conducting online exams, rules implemented by Panjab University and various challenges faced by teachers, students and other staff members during conducted of virtual examination have also been discussed. Positive and negative feedback inputs from teacher, learner and observer are solicited to have comparative study with offline teaching mode.

**Objectives**

Primary objective of this study is to analyze the positive and negative impacts of online and offline teaching methodologies. The main drawbacks of online and virtual teaching were internet issues, server errors, which might lead to interruption in between ongoing lectures. No such obstruction is possible for offline and real teaching modes. On comparing both real and virtual teaching modes, it becomes possible to realize the significance of each mode and its wise utilization at appropriate event. This is because in certain events, offline modes demonstrate better option over online modes and vice-versa for other situations. Therefore, it becomes vital to understand advantages and disadvantages of these modes over each other.
Results and Discussions
From the shared experiences with teachers, students and observers, we have analyzed the importance of online teaching mode for time and money saving purposes. Easy communication from people from distant areas, especially intra state and abroad community helps fruitful discussions without actual travelling which wastes time and money. This was found especially useful during PhD. defend of research scholars. As during offline mode of viva presentations, scholars and supervisors had to wait for longer durations for availability and feasibility of external examiner to come to take viva physically. This resulted in delaying of PhD. viva and degree of scholars. Moreover, the travelling allowances and travelling times were saved as was wasted during offline modes. However, there was certain negative feedback regarding online conduction of PhD. viva. For example, eye to eye contact with external evaluator was lacking, as simultaneous management of sharing content, presentation and replying to queries became difficult for scholars. In addition, technical error interrupted the ongoing discussions and presentation which obstructed the link and enthusiasm of defending PhD. thesis. The probability of asking question at each slide was less and examiner had to write down query and clear them at the end of presentation. This is unlike the case of offline presentation, where appropriate eye to eye contact and clear understanding and discussions can be easily made at proper time as required. Offline mode was more comfortable (as being responded by Panjab University research scholars) as it gave some time for social interaction with batch mates and other staff, which made self-confident. After completion of viva, a cheerful environment was created among colleagues, friends and supervisors. This social enthusiasm was lacking during online mode of presentation.
However, more pending PhD. viva’s could be completed through online mode during this pandemic stage. With regard to regular teaching classes of students through virtual mode, the response of providers and takers are analyzed through questionnaire and interview schedule. On account of unplanned and unpredictable lock down, it was difficult for teachers to cope up with virtual teaching mode initially. They had to take help of a technology friendly person to modify their virtual teaching skills. Students were also initially unaware of Cisco webex mode and requested teachers to take classed through social apps. However, as per Panjab University guidelines, social media apps would not be suitable platform for conducting online classes. This is because, for group classes and maintaining appropriate official platform, proper software should be well utilized. As per the response of the students, online classes conducted from home didn’t develop proper learning environment, inspite of efforts by the teachers. Especially for science students, practical classes were difficult to be conducted through online mode. In addition, using laptops and other electronic gadgets the whole day made students uncomfortable with mental stress (as interviewed by most of the students). Especially, research scholars belonging to experimental field were most suffered during this pandemic scenario. This is because experimental works could only be completed while working physically in the laboratory. In theory classes, most students simply logged in to show their attendance and while muting their audio and videos skipped the class (as per interview from both students and teachers). This made virtual mode of class losing interest for both teachers and learners. However, with passage of time and prolonged lock down teachers amended their teaching skills and tried to make virtual teaching mode interesting, interacting and informative for students. They utilized demonstration tools, interesting videos relevant to subject and tried to follow some interactive norms as was used in offline modes. In order to safe year gap of students in this pandemic, it was decided to conduct exams of Panjab University students through virtual method on September, 2020. Proper guidelines were framed by Panjab University and faculty members were assigned duties during this program. Web link and question papers were to be mailed and uploaded 20 minutes before the conduct of exam. Students were given 2 hours-time which constituted their writing, uploading and submitting answer book timings. However, it was difficult to conduct appropriate supervision to these online exam conduction programs. In the past and current Online competitive exams are conducted from time to time. But they were well planned and mostly multiple choices questions (MCQs) type and had appropriate supervision, exam centers and submission process. They have well equipped computer evaluation systems that reduce the burden on manual checking by teachers and examiners. However, in this pandemic scenario, conduction of examination was not fully planned due to its initial stage. Students responded that due to technical errors they could not download and upload question papers and answer books at appropriate time. These issues varied from student to student because each student was staying at different stations and accessing different technical facilities. This is unlike offline mode of conducting examinations where each student has alike facilities and hence fair evaluation system is conducted. Therefore, there was a negative feedback from majority of students and teachers regarding online mode of conducting examinations. However, Panjab University ought to conduct it in order to save the gap year of students. Similar was the case of school children during online teaching and examination programs. It was rather more difficult for school children. This is because they had to be accompanied by their parents in dealing with these online protocols, as it is difficult for toddlers to manage independently in this context. Children belonging to underprivileged and illiterate families faced the most difficult situation in this pandemic. As interviewed by maids and housekeepers of Panjab University campus, these families had contributed and hired a common teacher for helping their children for online classes. Therefore, this pandemic has drastically affected economically weaker sections (EWS) children of society.

Conclusions
The comparative study between online and offline mode indicated that although online mode saves money and time and allows ease access of communication over distant areas, most of the learners preferred offline teaching mode. This is because it enables more comfortable and pleasant interaction amongst each other. However, for part time learning, online lectures and demonstrations becomes useful for self-study. But for group discussions, appropriate physical group participation is better. For conduction of PhD. evaluation of research scholars, online mode had proved to be beneficial to some extent but online
examination conduct was not considered as efficient for fair evaluation of students.

References