

Transition from In-person Classes to Online Classes

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COVID-19 has forced the teaching community to switch to online classes in a short span of time. There are several challenges that a teacher faces when switching from traditional in-person classes to online classes. This paper presents the results of a survey on online classes that was conducted amongst the students, faculty and parents of Ahalia School of Engineering and Technology, Palakkad, Kerala, India. While the benefits of online classes are seen, majority of the participants of the survey prefer traditional offline classes. The paper also provides some specific pointers and suggestions for teachers to consider when transitioning from offline (or in-person) classes to online classes.

Keywords: online teaching, teaching techniques, pedagogy

1. Introduction

The only thing constant in life is change. In 2020, change was not something the world was prepared for. With the advent of the COVID-19, government bodies, international organizations, large and small business, families and individuals were forced to rethink their priorities and how they led their daily lives. In addition to the various sectors of the economy such as the healthcare, banking, transportation and tourism, the academic environment too was hit hard with the onset of the COVID-19 and the subsequent lockdowns [1] [2]. This is true in India as well as abroad. Some of the prominent matters that affected (and continue to affect) Universities, colleges, schools and other educational institutions include: loss of instructional time, mobility of students (particularly international students), digital learning and IT infrastructure, health and well-being of the students and staff members, examinations and re-opening of institutions.

The primary stakeholders – students, faculty members and parents – have been severely affected during this ongoing crisis. For students, the transition has meant listening to their teachers via an online medium in the comfort of their homes. The travel time back and forth from the institution is

eliminated, but so have their chances of meeting their classmates on a regular basis. The students also have to adapt to a new style of learning, where classes, discussions, tutorials, clearing doubts all happen online. As students, regardless of their background, community, economic and social status, spend more time at home their physical and mental health also needs to be given a priority. Parents too had to make significant changes in their daily routine to accommodate the fact that all their child's learning is now happening at home. The adverse consequences of school closures have also been identified by UNESCO [3].

The extended lockdown periods have forced many governments, small and large businesses to make changes in their daily operations; so did the teaching community. This fact is sometimes forgotten and under-appreciated. In India and Kerala in particular, when the lockdown was announced on March 2020 unexpectedly, all teachers had to immediately shift their classes to an online manner. For teachers in the higher education sector, this was quite a challenge as the lockdown was announced in the middle of the semester. While shifting classes online might sound easy, practically there are several challenges that need to be overcome by the teachers if online classes need to be effective. Some of these include: ensuring a reliable IT infrastructure at home, adequate knowledge and skills to use the relevant computer hardware and software and most importantly, modifying teaching styles to match the new learning styles of the students. At the heart of the problem, teachers must understand that by moving away from in-person classes and discussions, if not managed properly, the interactions between a student and a teacher will greatly reduce. To be effective, a teacher must carefully plan and implement an appropriate teaching-learning pedagogy [1] [4] [5] [6].

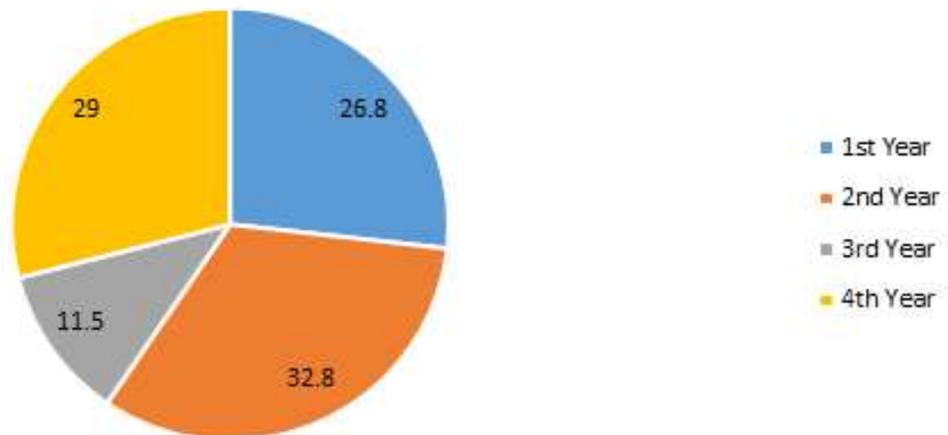
The goal of this article is to outline some important points and suggestions for teachers to consider when transitioning from in-person classes to online classes. In Section 2 of this paper, the results of a survey conducted amongst the stakeholders of Ahalia School of Engineering and Technology, Palakkad, Kerala, India is presented and discussed. In Section 3, a few suggestions to the faculty members to improve their online teaching approaches are mentioned. The conclusion of this work is summarized in Section 4.

2. Survey and Discussion on Online Classes

Ahalia School of Engineering and Technology (ASET) is located in Palakkad, Kerala, India. It is affiliated to the A. P. J. Abdul Kalam Technological University, Kerala and is approved by the All India Council for Technical Education (AICTE). Recently an anonymous survey was conducted amongst the students and their parents and the faculty members of the institution to review the conduct of online classes and its effectiveness. The results of this survey are presented in this section.

2.1 Response from Students

183 students, from all the five branches of engineering (Civil, Computer Science, Electronics and Communication, Electrical and Electronics and Mechanical) participated in the survey. The percentage of students from the various years of study is shown in Figure 1. Almost all the students reside in the Palakkad district of Kerala, in the same district where the Institution is located. The results of the survey are presented below.



- i. When asked whether the students have a reliable internet connection to attend to online classes, 70.5% of the students indicated that they have this facility.
- ii. Regarding the effectiveness of the online classes, only 16.4% of the students felt that the learning experience was better than offline (or in-person) classes.
- iii. The biggest advantage of online classes, when compared to offline (or in-person) classes, indicated by students (44.8%) is the ease of studying at home. The next major advantage, indicated by 37.7% of the students, is time savings. The other advantages mentioned by students include better explanation and understanding of subject material, avoiding travelling and the ability to revisit lectures via class recordings.
- iv. The biggest disadvantage of online classes, when compared to offline (or in-person) classes, indicated by students (59.6%) is not able to understand the subject properly. The next two disadvantages were missing the classroom environment and not meeting friends in the Institution, indicated by 19.7% and 12.6% of the students respectively. Other points mentioned were internet and related technical issues, increased strain due to continuously using a mobile phone or laptop, inability to concentrate or focus for the duration of the online classes, health concerns, lack of interpersonal relationships and interactions during classes.
- v. When asked about the type of subjects that they preferred to be taught online, 90.2% of the students preferred theoretical subjects to be taught online. For analytical and problem-based or numerical-based subjects, students preferred traditional offline (or in-person) classes.
- vi. When asked about the degree of interaction during online classes, when compared to offline (or in-person) classes, only 15.3% of the students found the classes to be very interactive. 45.4% of the students felt it ok/average while 39.3% of the students found the online classes not interactive.
- vii. Our Institution is using the Google for Education package and hence majority of the teaching-learning happens on the Google platform. Particularly, Google Meet and Google Classroom are used extensively. When asked about whether using Google Classroom was effective, 32.2% of the students indicated that it was very effective and 52.5% of the students found its use ok/average. The rest of the students (15.3%) indicated that it was not effective.
- viii. For circulating notes and study material, 74.3% of the students preferred Google Classroom and 20.2% of the students preferred WhatsApp. The other preferences indicated by the students include Telegram, both Google Classroom and WhatsApp and hardcopy of the notes.

- ix. Since the University to which our Institution is affiliated is conducting offline (or in-person) examinations, students were asked if they felt confident of passing the University examinations after the conduct of online classes. 66.7% of the students indicated that they are not confident of passing. This reinforces the need for offline (or in-person) classes before the University examinations and justifies the insistence of the University for Contact Classes (following COVID-19 norms) for all the batches prior to the examinations.

To summarize, though students in the Institution prefer online classes because of the convenience it provides and their benefits for certain types of subjects, in general offline (or in-person) classes are greatly preferred. This is particularly true from the point-of-view of University examinations and the fact that reliable network connection is not available to all students. Moreover, even though resources like the Google platform is used and is beneficial, the quality of the online classes need to be improved particularly when considering the level of interaction between faculty and students.

2.2 Response from Faculty

Twenty nine faculty members from various departments participated in the survey. The major results of the survey are presented below:

- i. When asked about their familiarity with conducting online classes, delivering talks or work shops or webinars via the online medium prior to the lockdowns, majority of the faculty members (55.2%) indicated that they were not involved in such activities.
- ii. The faculty members were also asked about how easy it was to transition from offline (or in-person) classes to online classes. Majority of them (86.2%) indicated the transition was ok/average and 10.3% of the faculty found it very difficult.
- iii. Regarding the difficulties that faculty members faced while handling online classes, majority of them (62.1%) indicated the lack of interaction with students and the lower satisfaction after covering a particular topic when compared to offline classes as the major factors. 27.6% indicated the need to modify their teaching style as another challenge they faced. 17.2% indicated the lack of reliable IT infrastructure at home as a difficulty. Only 3.4% indicated the lack of adequate knowledge and skills to use computer hardware and software as an area of concern.
- iv. In our Institution faculty members were involved in handling online classes for more than one semester. Based on this experience, they were asked whether they preferred online or offline classes for the upcoming semester. Majority of the faculty members (89.7%) indicated that they preferred offline classes.
- v. When asked whether the faculty made any changes to their notes, lecture material or related material for the purpose of online classes (when compared to the offline classes), 86.2% of the faculty indicated in the positive. 10.3% of them indicated that they had not made and changes and 3.4% indicated that they were teaching the subject for the first time.
- vi. Lastly, the faculty members were also asked if they had employed any new strategy (e.g. flipped classroom, pop-quizzes, etc.) when handling online classes. 65.5% indicated that they had while 34.5% indicated that they had not.
- vii. The faculty members were also asked to give their suggestions for improving the quality of online classes. The relevant suggestions are: improving connectivity and the need for a reliable network, the use of digital or interactive boards, ensuring participating and better communication with students during online classes.

To summarize, even though most of the faculty members are adept at using technologies and were

adaptive to the change from offline to online classes, majority of them prefer traditional offline (or in-person) classes. However, with the changing face of education and the well-documented reasons for digital or online education, it is very important that faculty members are equipped with the necessary techniques, skills and trainings to meet the changing needs and demands of the education system. In Section 3 of this paper, a few specific suggestions for faculty members are outlined.

2.3 Response from Parents

Nineteen parents participated in the survey. While this is not a large number to draw a reasonable conclusion, the results of the survey are listed below.

- i. When asked if they preferred their child to learn via online classes or offline (in-person) classes, majority (73.7%) indicated offline classes.
- ii. When asked whether the online classes conducted were effective for their ward, 52.6% indicated in the positive.
- iii. The parents were also asked if they faced any difficulty at home due to their ward's online classes. 68.4% indicated that they did not face any difficulty.

3. Discussion and Suggestions for Faculty

Based on the experiences from 2020 and looking ahead, digital teaching-learning and online education will play an important role in the academic environment. Many Universities have already permitted students to transfer credits earned from online courses such as SWAYAM [7] towards their degree. Faculty development programmes and teacher training and evaluation programs via the online medium has also seen a rise through platforms such as ATAL [8] and ARPIT [9].

While there is a great deal of focus on connectivity and related IT infrastructure, it is equally important to remember that learning outcomes are met only when a teacher uses appropriate strategies and pedagogies that is adaptive and matches the capacity of the students. As indicated earlier, there are many resources available to faculty members that cover the topic of teaching pedagogies and strategies, and this section presents a few specific suggestions for faculty members, particularly when dealing with online classes.

- With the advent of COVID-19, there is an increased use of software platforms such as MOODLE, Google Classroom, Microsoft Teams, WhatsApp etc., by the teachers to communicate with the students. This communication takes the form of providing study materials, conducting group discussions, conveying important announcements, etc. While the above mentioned tools serve as a good repository for study materials, it is especially important in the present situation, that the materials are published in an organized manner. This will help the students retrieve and easily access the materials posted. Some tips include using tags or topics to organize material into various categories, naming the files being uploaded appropriately and using proper titles for various posts.
- One of the main advantages of switching over to an online teaching-learning methodology is that teachers can easily share references and links of online materials such as articles and videos. In situations where difficult concepts are being taught, extremely good videos, already available on the internet, can supplement the teacher's classes. This is very useful from a student's perspective. Thus it is extremely important that a teacher knows how to include links of various online resources to software platforms such as Google Classroom.

- When shifting to online classes, an important resource is often the notes that a teacher provides. This is the primary resource for students, especially when access to textbooks and reference books from their homes is difficult. It is also hard and time consuming to verify whether the students are making class notes during online lectures. In addition to providing such study material, a faculty must also think about how to present the concepts in these study materials for a greater learning experience by the students. One example is including the learning objectives of the particular topic being covered in the notes at its beginning. Another example is including a summary or “do you know?” questions at the end of the notes. Another example is ensuring the ability to simultaneously draw diagrams and add annotations when explaining concepts given in the notes. These annotated notes can be shared with the students as well. The major benefits reported by students include: (i) it helps to quickly recollect the material during the time of revision, (ii) it gives a clear picture of what is going to be covered and (iii) it reduces the chances of skipping important points while learning.
- It is often stated that after approximately fifteen minutes, the attention span of an audience dwindles during a lecture or talk. Thus it is often encouraged to take a short break in some form (e.g. cracking a joke, an activity, etc.) during classes as it will recharge the audience. This concept is even more important when handling online classes on platforms such as Google Meet, Zoom, Cisco Webex or Microsoft Teams. It is also crucial to keep in mind that most students especially in the higher education, attend these classes on their mobile devices via their data connection. The situation is made more challenging as students often turn off their video to ensure adequate speeds and audio quality during the class. This often poses a difficult situation for the teachers as there is no visual feedback from the students, thereby making it hard to understand the involvement and attention of the students. One tip is for the teacher to engage in oral pop quizzes where the students are called out by name to answer questions in a random manner. This is one way of checking whether the students are alert and engaged in the online class. Another possible technique is to conduct written pop quizzes. For example, after fifteen or twenty minutes of class a multiple choice quiz (MCQ) on the material covered in the lecture can be conducted for another five or ten minutes. The MCQ can be conducted on a platform like Google Forms, where the students can immediately know the points scored, which questions they made a mistake, the correct answer to the questions and some feedback on the answers. The auto-grading facility is a great tool here, as the teachers can immediately know which questions posed a difficulty to the students. Thus the discussion thereafter can be focused on these questions. Some of the benefits reported by students include: (i) it serves as a reminder to listen to the class properly, (ii) it improves the confidence of the student in that topic, (iii) it helps to recollect material and (iv) it serves as a good revision on the topic discussed. Such quizzes have the added benefit of breaking the monotony of the online class, improve interaction with the students and they also provide an indirect way to measure their attendance in the class.

4. Conclusion

With the trend in education moving towards a greater appreciation for MOOCs, online certifications and online degrees, even with the release of the COVID-19 vaccine, the concept of online teaching and learning is here to stay for the foreseeable future. Thus it is up to the teacher to find creative ways of engaging the students. In future the effectiveness of a teacher will be partly measured by the expertise and experience in conducting online classes. This paper presents a survey on online classes that was conducted amongst the students, faculty and parents of Ahalia School of Engineering and Technology, Palakkad. The paper also provides some specific suggestions for faculty members to improve their on-

line classes. The points mentioned in this paper are not in any way exhaustive and are only ideas for teachers to consider while engaging online classes. In this context it is imperative to say that online teaching requires more effort from the teachers, if the classes are to be enjoyable and effective.

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