Pedagogical Implications of Online Classes and Assessments in the Context of the Pandemic Covid 19

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ABSTRACT

This paper provides a perspective of the pedagogical implications of online classes and assessments conducted during the pandemic, Covid 19. A course handled by one of the researchers, in this unprecedented scenario, is presented as a case study. The major differences between online classes and the traditional face to face classes have been highlighted and augmented with opinions gathered from the major stakeholders in the teaching learning process namely, the teachers and students. With the proliferation of online courses the entire concept of teaching and learning has changed along with the assessment patterns. But the onslaught of the pandemic has thrown all of us out of gear and the concept of online classes has changed drastically from what it was before the pandemic. Notwithstanding the ramifications of this situation, the level of commitment on the part of teachers has not diminished in the least which is evident from the survey which was undertaken. In fact there has been a veritable metamorphosis of the teachers with the changing times. Further there is also a perceptible shift from teacher centred pedagogy to learner centred pedagogy with the advent of online teaching and assessment.

Keywords

Online assessment, online pedagogy, formative assessment, summative assessment, teaching learning process, flipped videos, face to face learning.

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Introduction

This paper delineates the pedagogical implications of online classes administered by one of the researchers and the assessment strategies adopted during the pandemic, Covid 19. In this multi method case study we explore students' engagement during the online classes in the backdrop of a scenario which was unprecedented in the lives of the students and the teachers. The modules that were taught pertained to the English language components which are required for their placement tests, as well as, their core electronics and communication engineering subjects. The classes were spread over a month, in June 2020.

The major differences between online classes and the traditional face to face (F2F) classes have also been highlighted and augmented with opinions gathered from the major stakeholders in the teaching learning process, namely, the teachers and students. Though the entire concept of teaching and learning has changed along with the assessment patterns, it was found that the level of commitment on the part of the teachers had not diminished in the least. In fact there has been a veritable metamorphosis of the teachers with the changing times. There is also a definite shift from teacher centred pedagogy to learner centred pedagogy with the onset of online teaching and assessment.

Objectives of the research

- To understand the impact of online classes and assessments from a teacher's point of view
- To understand the impact of online classes and assessments from a student's point of view
- To differentiate between face to face and online classes and assessments
- To gauge the level of commitment evinced by teachers towards students and their learning process.

Literature Review

Many researchers have offered deep insights about the perceptible differences between the e learning that takes place online and the learning that happens in the F2F set up. (Fei Li, 2014) but she goes on to highlight the fact that there is no significant difference between students' behavioural engagement in traditional classroom when compared to the e-learning set up.

This paper depicts the usage of interactive features of e-learning which was found to be a source of motivation for the undergraduate students to participate whole heartedly in all the activities. It reiterates that the usage of technology would be a major influence on the delivery of online learning. El-Seoud et al (2014) proposed the usage of an open source e-learning platform, Moodle, for delivering the e-content. Sun (2016) has provided practical suggestions for the development of online courses which would have a more positive effect an also suggests steps to improve the quality of higher education, enhance the student enrollment and

ensure retention. It also states that MOOC courses will most probably be offered in many of the universities after a significant period of time. The paper also suggests that e-learning facilitates a higher level of learning and fosters innovative thinking as well as inculcating critical thinking skills in the learners.

Alsaaty (2016) has reflected deeply on the perceptions of students towards online teaching methods as opposed to face to face teaching methods. Ferriman (2013) has described an experimental study on a blended e-learning environment which focused on academic assignment writing in English. The experimental results obtained on the chosen group of 15 students produced similar results when compared with the group of students who underwent the face to face teaching process. Chou (2012) has made a study on the self-directed learning abilities of engineering students in an online environment. The results of his study showed that highly motivated engineering students showed positive responses towards online learning and the performance evaluation displayed a significant response. Salmon (2000) has listed out the staple competencies to be acquired by teachers who are using the online mode. She advocates promoting group work, pacing online discussions and experimenting with new ideas along with demonstrating a genuine excitement about online learning. Roddy et al (2019) have outlined the best practices for online instructors and students in their review paper. They also reiterate that most online teachers take the student centred approach as opposed to the traditional approach wherein the teacher played the central role. Tomas (2019) explored ways through which a flipped classroom supported the learning of students and also discusses the experiences of educators in implementing such active strategies .

Methodology

The descriptive research method was used for this study which sought to investigate the perceptions held by students and faculty regarding classes and assessments in the online mode when compared to the traditional mode of teaching. We followed a mixed method approach with our data collection and collected qualitative data and quantitative nput through a questionnaire. The instrument was administered as a Google survey to consenting students in the educational institutions of the researchers. We collated numeric data and coded qualitative data derived from questionnaires, semi structured interviews with teachers and students as well as data from virtual classrooms. Two instruments as two separate Google forms were designed and administered to teachers and students. The survey, initially piloted with a few faculty friends , contained demographic information apart from viewpoints on the salient aspects which have been analysed. The questions used were primarily dichotomous type of questions. The survey administered to students (n=172) and of the students who took the survey 62.7% were boys and 37.2% were girls. Along with demographic data input regarding gender was also collected in a bid to see whether gender played a role in the fascination for gadgets and online resources. It was found that this was not the case as 58.3% of girls (39 out of 64) did not favour online classes as opposed to 60.9 % boys (63 out of 108). Some questions were also open ended as we wished to find out which platform was most preferred by the students surveyed. The answers were mostly platforms used by teachers like MOODLE and Kaizala.

99% of the teachers who undertook the survey admitted that they accorded extra attention to slow learners regardless of the subjects taught. This enables one to understand the commitment evinced by teachers in the welfare of students and the learning process. This is evident in the online mode as well, as teachers are constantly in touch with the students. 69.8% of students asserted that the teacher checked to see if they have been understood and 71.5% of students said that they got their doubts clarified in online classes. But 33.1% of the students felt that they did not reach the target set by the teacher.

Proposed Framework Model

The proposed framework model represented in Fig 1 depicts e- learning to be the pivotal focal point of the teacher and the students. It also emphasises the interrelatedness of the teacher and the learner which can be said to be complementary and working in a two way direction. It also highlights the essential qualities required on the part of the teacher and the taught. The teacher has to necessarily be adept at technical skills, internet usage. This should culminate in an evaluation and assessment which proves the success of the course objectives and results in the outcomes expected from the learners. It cannot be denied that this tech savvy factor and internet usage holds good for the students as well. Further the learner on his part has to be able to manage his time well given the scope for distractions, go in for a lot of self learning and gain more self awareness as he not under the eagle eye of the teacher as is the norm in a physical classroom. His concentration levels and motivation should be enhanced to participate actively. These requirements can be facilitated through discussions with the teacher which would prove to be beneficial for both the taught and the teacher as there is instant feedback. This feedback makes remedial actions possible and the teacher can be sure that the outcomes of his objectives in teaching the modules are met effectively.

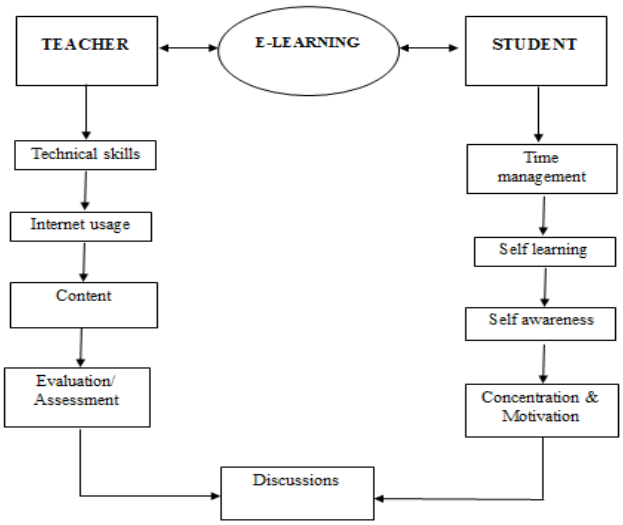


Figure 1
Proposed Model Framework

Note. Proposed framework based on the objectives chosen and the outcomes obtained

Change in the role of teacher

Goodyear et al (2001) have elaborated on the competences of online teachers from a humanistic and cognitive perspective. Barber et al (2015) have highlighted the fact that there is a perceptible change in the roles and responsibilities of the teacher and the learner with the advent of technology into the education field. There has been a metamorphic transformation in the teacher as well as the taught which has brought in the trend of blended learning. We find that there is a swerve towards an amalgamation of methods and so we find teachers incorporating methods generally used in the F2F, with reference to teaching and testing.

In the traditional classroom with F2F interaction, if one were to consider whether teaching alone was instrumental for the successful learning outcomes, one could categorically state that this is not so because other factors also have a part to play. Students are usually heterogeneous and have different levels of understanding and courses are delivered according to the need so how could a course be delivered the same way to the entire client base as is followed in online courses. In the class which is undertaken for this study the students were largely homogenous and were not very disparate culturally as all were from South India.

Change in the role of the taught

There is a tremendous change in the role of the learner as well and the concept of the teacher being the fountainhead of knowledge has changed with more of collaborative steps coming into play even in the traditional F2F classroom. In complete contrast to the traditional classroom and the blended classroom, the onus lies completely with the learner in the case of online learning. He registers for the online course of his own volition and mostly out of interest or curiosity. Thus self-motivation is a very important factor. There are pre-recorded lectures which can be viewed anytime and anywhere as per the convenience of the learner. To the query of whether they preferred online classes to face to face classes it was found that only 40.7% answered in the affirmative and 59.3% responded with a categorical 'no' for an answer.

Differences between online classes and F2F classes

Considering the current situation, online classes have started becoming increasingly popular and also flexible. But the delivery of the course between online and F2F has certain important differences that has to be taken into consideration. Since the educators do not get to meet the students, it might seemingly get difficult to find out how much the student has learnt. And the delivered lectures can be taken at any time which might delay the learning process of the student. But unlike F2F classes where the educator delivers knowledge, in online classes students are encouraged to participate in forums and discuss which in turn helps and motivates the student to think by themselves.

Selection criteria and source of data

Target audience for this study involved a diverse group of teachers belonging to schools, colleges and universities from around Tamil Nadu. The methodology proposed was to aid faculty and students for a better online teaching and learning environment. This study also concentrates on the roles and responsibilities to be followed by the instructors as well as the students.

We had sent questionnaires to 300 teachers of which 115 responded. Anonymity was guaranteed and we got their consent for the study at the outset. We were able to gather data from 115 respondents who are teachers from schools, colleges and universities in Tamil Nadu as well as other States. We had representatives from 25 cities across India and a few from abroad. With the aim of eliciting perspectives from diverse people we sought out both government run as well as private institutions. The teachers were from diverse disciplines namely Engineering, English, Education, Psychology, Mathematics, Sciences, Computer Science, Commerce, Law, Tamil as well as foreign languages like French and Spanish. Apart from collecting demographical data we also included a series of questions following the dichotomous pattern. As shown in Table 1, 65% of the teachers had more than 10 years of service in teaching. Of these 23.7% worked in Government Schools or Colleges, while the rest worked in private Universities or Schools.

Table 1
Demographic Characteristics of Faculty Respondents

		Represented as Percentage
Gender	Male	56%
	Female	44%
Years of experience	Less than 10 years	35%
	More than 10 years	65%
Designation	Professors/Associate Professors	35%
Designation	Assistant professors	46%
Designation	Lecturers/teachers/instructors	19%
Government run institutions		23.7%
Private institutions		76.3%

Note. Based on the survey responses received

As shown in Table 1, 44% of faculty respondents teaching online are female, 35% are Professors/associate professors, 46% are assistant professors, and 19% are lecturers/instructors. 65% have over five years of teaching experience and 75% have taught online courses for at least three years.

Online classes

Online classes have become popular recently. It has a number of advantages to the parents, teachers and as well as the students. Since the students need not meet the teachers in

person by physically travelling to the spot, students from even remote locations are benefitted. Online classes have also become a flexible choice during busy times. It cannot be denied that online classes have their demerits and merits but considering the current situation, making use of these facilities will help the students in continuing their education.
A number of blended learning platforms are available for free that help both the teachers and the students to learn. Most of the online platforms available are very user friendly which seems to be another advantage. Some of the freely available online platforms widely used include Google classroom, TalentLMS, iTunesU, Thinkific, Schoology to name a few. In our proposed blended teaching method we have chosen to use Google classroom.

Google classroom

In the bid to reach all students in the absence of face to face interaction because of the COVID 19 pandemic the researcher made use of the Google classroom which is a web service made freely available by Google for educational purposes. Google classrooms help in organising the materials necessary for online learning classroom. All the materials, video tutorials were uploaded and assignments as well as tests were conducted through Google classroom. All that was required was the Gmail address of the set of students to be enrolled in the classroom sample of the created Google classroom with videos and materials uploaded has been represented in Fig 2. On creating the Google classroom students joined the classroom through the invite that was sent to their email address or through the class code. Materials necessary for the conduct of the course were organised day wise which included video lectures, lecture notes, reference books and power point presentations.

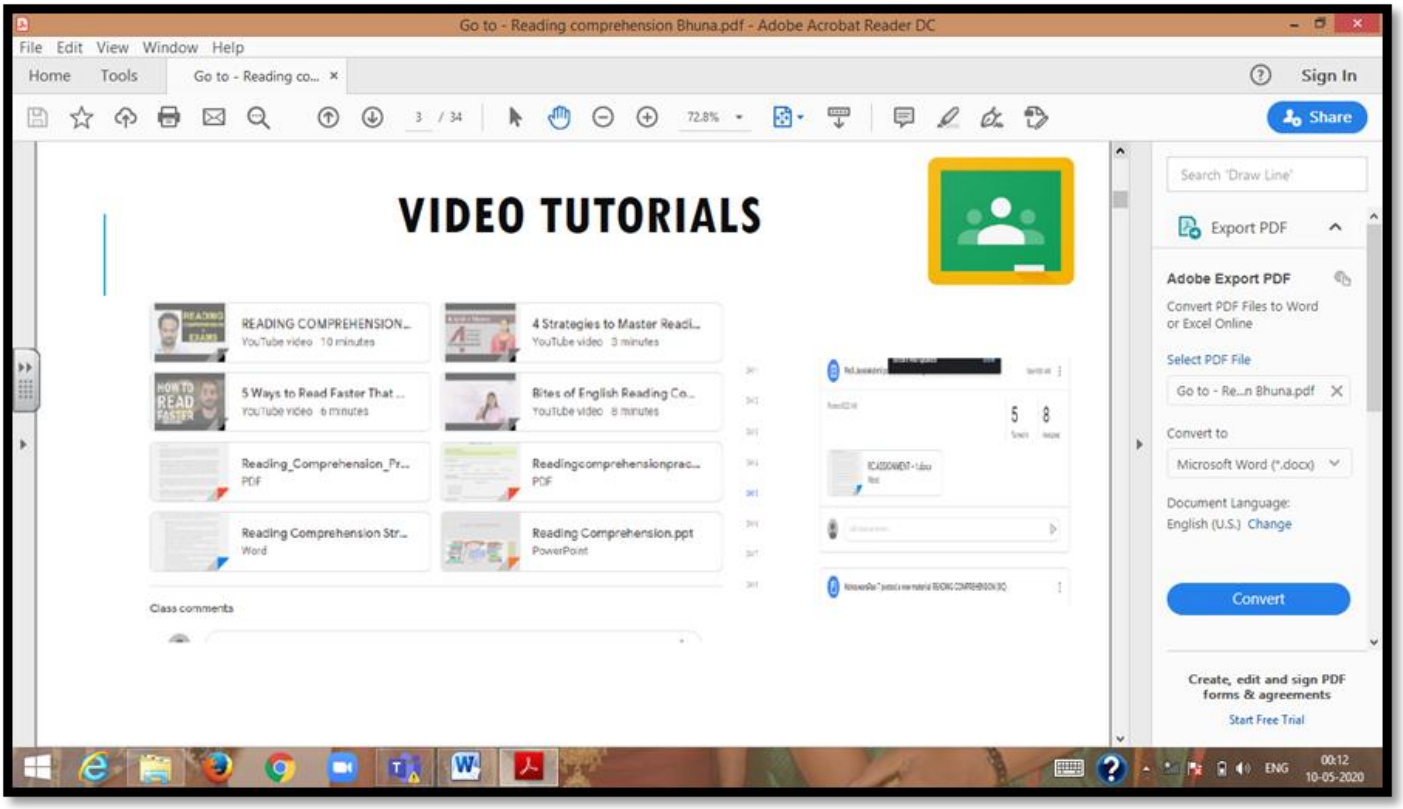


Figure 2 Screenshot of an online video class in a blended class

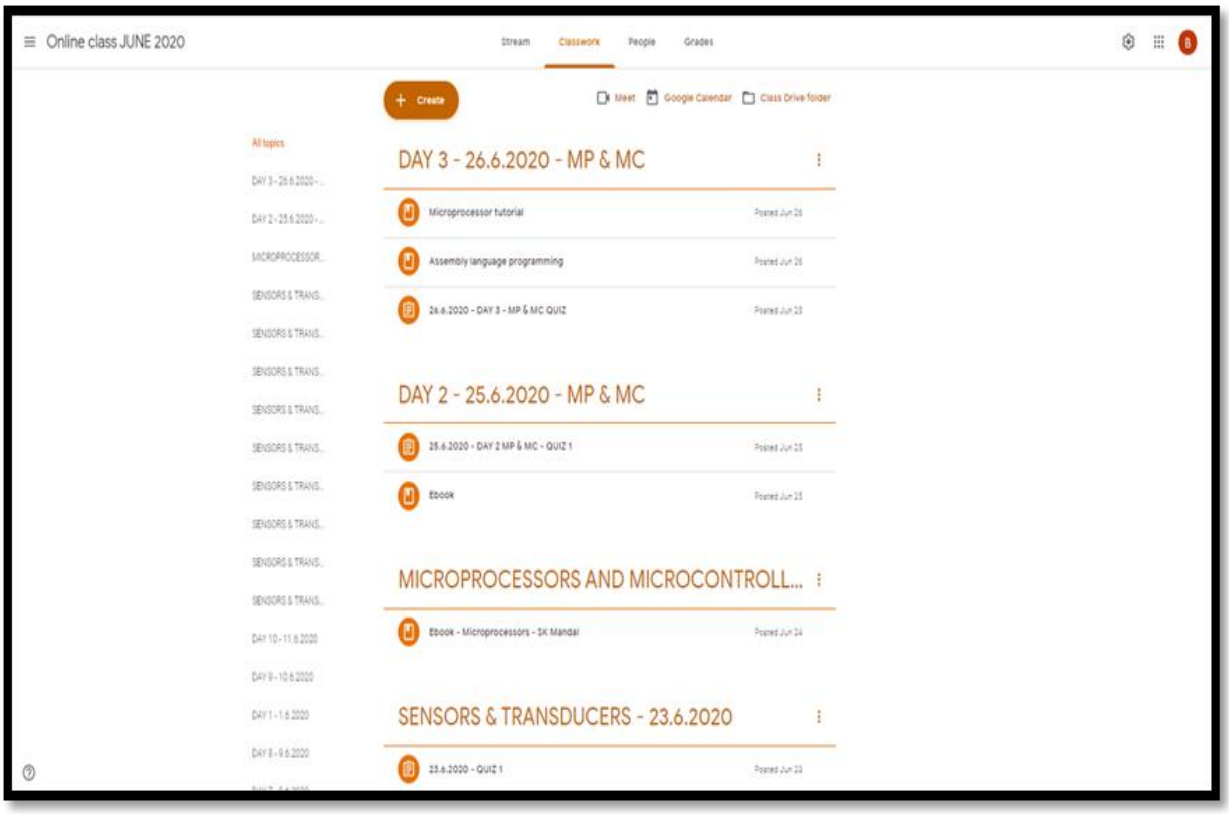


Figure 3 Sample of a Google classroom created

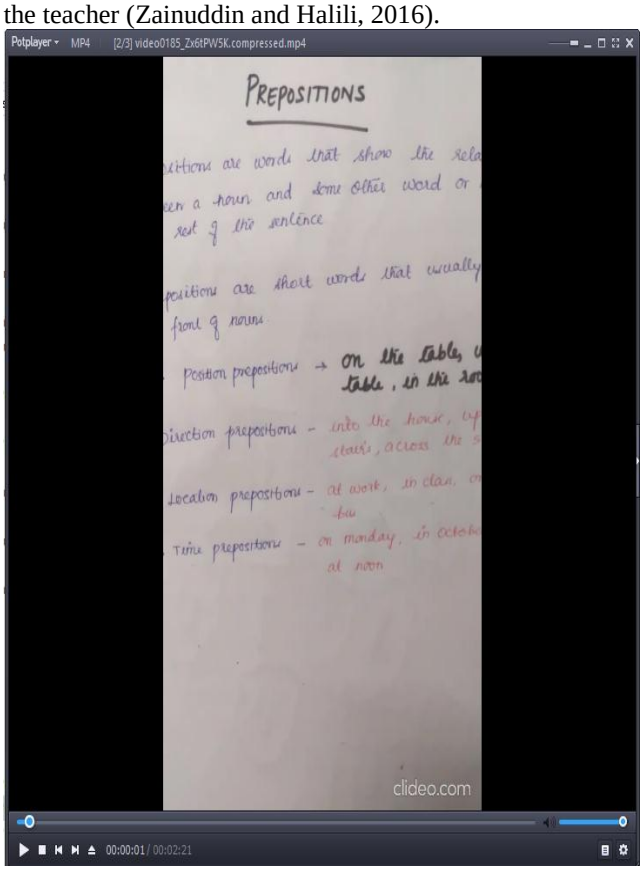
As stated earlier along with the materials, assessments were also made using the Google classroom. Fig 3 represents the view of the Google classroom that was created and the process involved in including an assignment, quiz or a question on a daily basis for the students involved in the study.

Instructional strategies used in the online classrooms

A wide variety of instructional strategies were used in the online classroom in a bid to keep the learners engaged and to make the learning lasting and effective. Apart from listening to the usual lectures they also watched videos and participated in activities like crossword puzzles and mind maps which catered to the multiple intelligences of the learners. Some of the activities are described in detail in the following paragraphs.

Flipped videos

Recently, the usage of flipped classroom have become increasingly popular and seems to be an emerging technology in the field of education which can also be a standard of teaching-learning practice to foster students' active learning in higher education. Students have a positive attitude towards the flipped learning method according to a number of researchers (Nouri J, 2016). In the Flipped classroom approach of teaching and learning, the students will be given a pre-recorded video on a topic to watch at home and then proceed with discussions or hands on activities during the class session. Flipped classroom approach have been considered to be a student based approach in which the student is more actively involved than the teacher (Zainuddin and Halili, 2016).



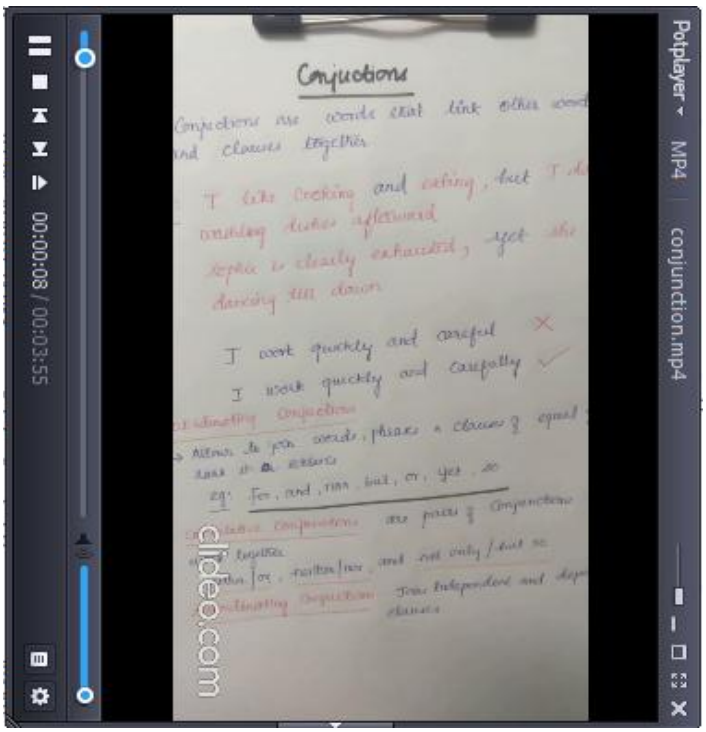


Figure 4 Sample flipped video screen shots of an English course in which the instructor discusses on Conjunctions (top), Prepositions (bottom)

So in the proposed online learning system flipped videos of less than 4 minutes on the topics were created ahead and were posted in the Google classroom organised in a similar pattern as discussed in the creation of Google classroom. Students registered in the classroom were able to watch the flipped videos posted in the Google classroom and learn the topic prior to the class timing and come well prepared for a discussion on the topic. Few samples of flipped videos posted in the Google classroom are shown in Fig 4, these are screenshots of the videos given to the students for the topics on conjunctions and prepositions which gave the students a brief description on the concepts.

Microsoft Kaizala

Microsoft Kaizala a web based management portal was also used between the students and the instructor. A private group was created using the application which served to work as a discussion forum between the students and the instructor. This application also has a number of built in features that enhanced teaching learning process. Some of the key features included polls, surveys, Q & A, quizzes and attendance. Students enrolled in the classes were asked to mark their attendance through the attendance request that was generated through the Kaizala application, which seemed to be much easier than the creating a Google form and tracking the attendance.

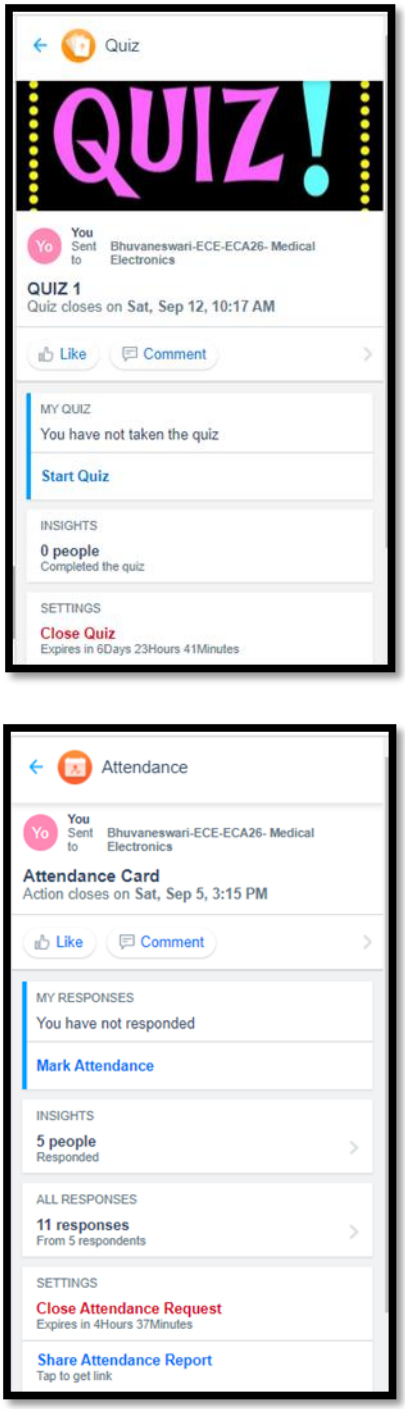


Figure 5 Sample Quiz created through Kaizala application and the attendance request sent to students

Sample screenshots of the quiz and the attendance requests that were used for this online teaching method has been shown in Fig 5. Students also responded to the questions that were asked in the Kaizala application that created a discussion forum and interaction between students of the same group as well as the instructors. The question and answer responses obtained through Kaizala has been represented in Fig 6.

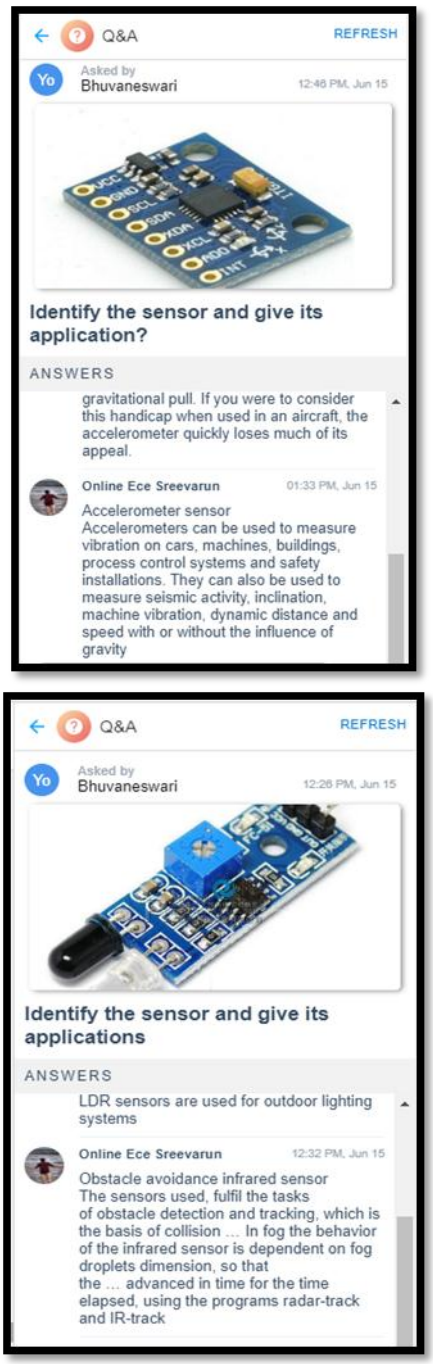
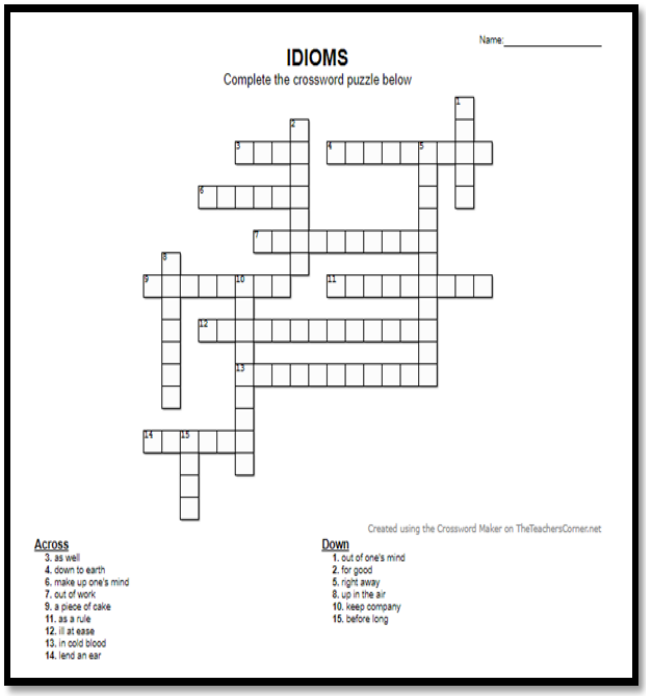


Figure 6 Sample question and answer responses from the students through the Kaizala application

Class Activities

A daily based session plan was followed by which students were made to watch the flipped video on the specific topic followed by working on an activity. This helped the students to stay more focussed and attentive. These game based learning methods formulated have helped the students stay more active and involved during the entire session, it also helped the students to manage their time. To create more interest for the students, game based activities like crossword puzzles, word search, picture quiz, word scramble, poster presentations, podcasts, mind maps were incorporated. They could even work as pairs or groups which helped in sustaining the interest factor. Based on the topics on discussed through the flipped videos, different activities were given to students and the submissions were collected through Google forms.



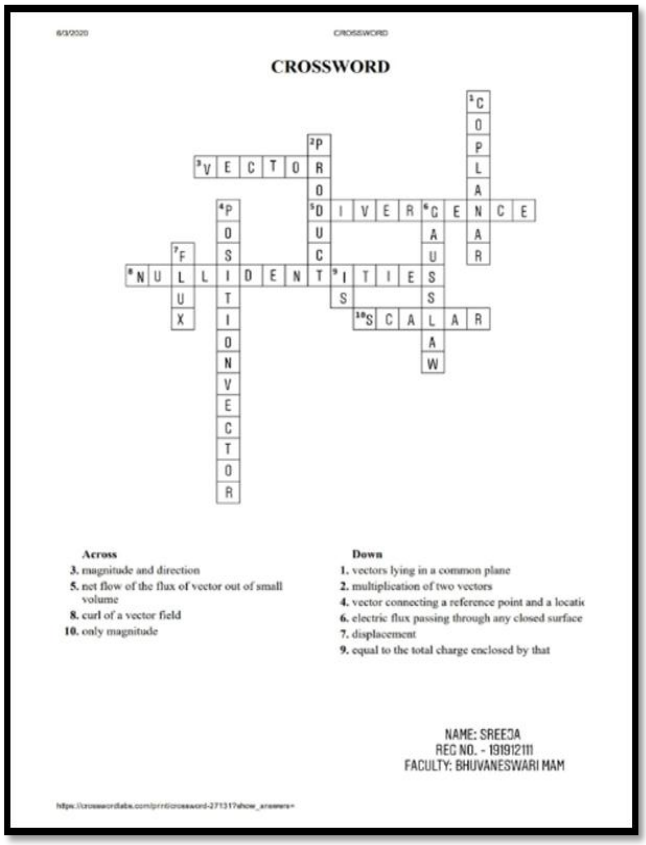
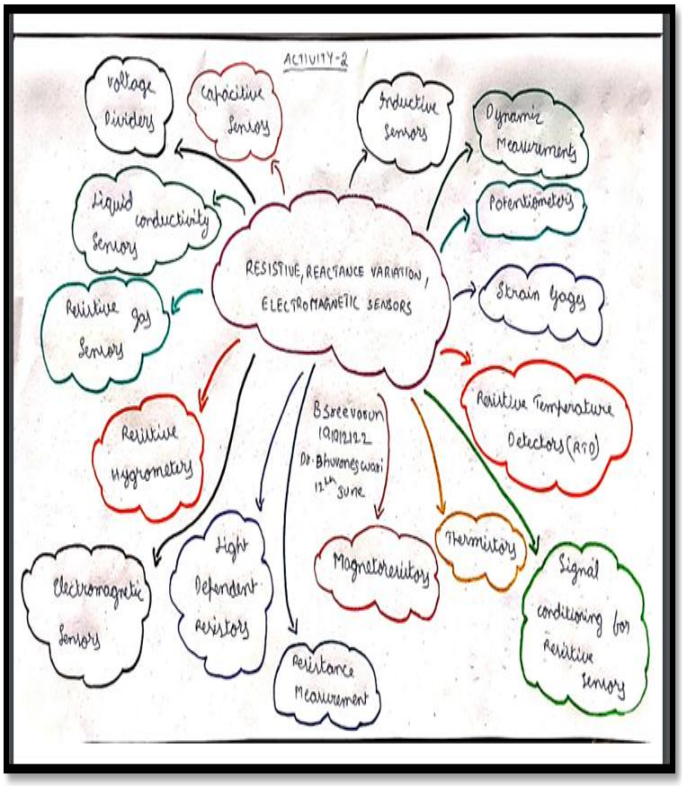


Figure 7 Activity samples – Crossword Puzzle (top) and Word Search (bottom)

Fig 7 (top) represents the submission sample of a crossword activity on idioms during the conduction of English course, Fig 7 (top) represents another crossword activity submission that was given to students for an engineering course. Fig 7 (bottom) represents a sample word search activity that a student submitted during the conduct of the online course. Students were also given activities such as mind maps and the samples of these submissions are shown in Fig 8.



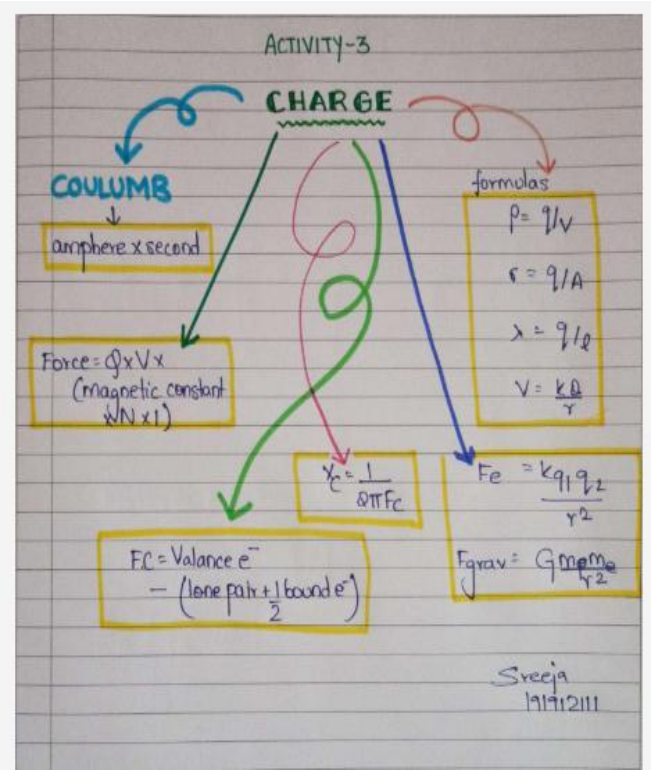


Figure 8 Mind map - Activity samples submitted by students

Based on the responses of the students attending the blended classroom method proposed we were able to understand the impact of the students towards the proposed method. It was noted that students came out with innovative responses for the activities given. They also started making use of the web resources, course materials posted in the Google classroom and actively participated incorporating the concepts learned.

Types of assessments

Assessments can be summative or formative. Formative assessments take place during the course of learning and summative assessments take place at the end of the course. There is scope for implementing changes as teachers can derive feedback based on these assessments when they are formative which is not possible in the summative. Summative is generally done to measure the learning that has taken place as the result of the course undertaken. It would be ideal to have a blend of both the assessments and have the power to implement changes mid-course. Aslam (1992) cites six types of tests namely entrance tests, aptitude test, placement tests, diagnostic tests, achievement tests and proficiency tests. Stack (2015) has presented a study which deduced that the final examination scores of students in the traditional learning system and online learning system did not show any significant difference. Despite this result, the paper suggests some strategies to be followed to obtain better results through online class delivery like choosing a smaller group of students to ensure homogeneity.

The impact of assessments

Assessments form an integral part of the teaching learning process. We need to take cognisance of the fact that assessments have a deep impact on students, both in the physical classroom as well as the online virtual set up. An assessment serves a range of purposes and is an important aspect of teaching and learning systems (Allison 1999, Benson 2003) so views were sought on this. 78% felt that assessments were an indication of actual learning that had taken place, while just 22% felt otherwise. Underhill (1987) states that students must be relaxed and confident in order to communicate and be able to perform in their assessments. Rust O Donovan & Price (2005) have opined that a test "evokes fear, anxiety and stress". Similarly Vaughan, Cleveland and Garrison have also commented on this point. Most students focus on learning what they think will appear for their assessments. Ruminating on the scope for rote learning or memorising facts 62% of those surveyed felt that assessments should not encourage rote learning and only 38% thought otherwise. Rather than reproducing the content the aim of real learning should be on the application of this knowledge. Some teachers suggested doing away with formal assessment altogether though they admitted that they had liked the concept of tests when they had been students themselves.

Online assessments

Conrad and Opena (2018) opine that there is greater variety and authenticity in the design of assessments in online testing but effective techniques to assess student learning in online courses are yet to be thoroughly addressed. Online assessments are graded automatically and the only point of contact is with the threaded discussion forums. The impact of feedback does not have the immediacy that is prevalent in the F2F classroom. Assessments that involve higher order thinking skills like project work, trawling the net, writing and posting blogs, posting on Wiki or creating a portfolio are the norm on online assessments. Learners are encouraged to record and post on the discussion page. There is a distinct lack of peer pressure which could have both positive and negative connotations. 68.1% of the teachers felt that the online tests were definitely less time consuming though those who taught language skills felt that multiple choice which is commonplace was not a good idea for assessing all the skills. Students were assessed through assignment submissions, assessments, podcasts and active participation during the conduct of the online classes.

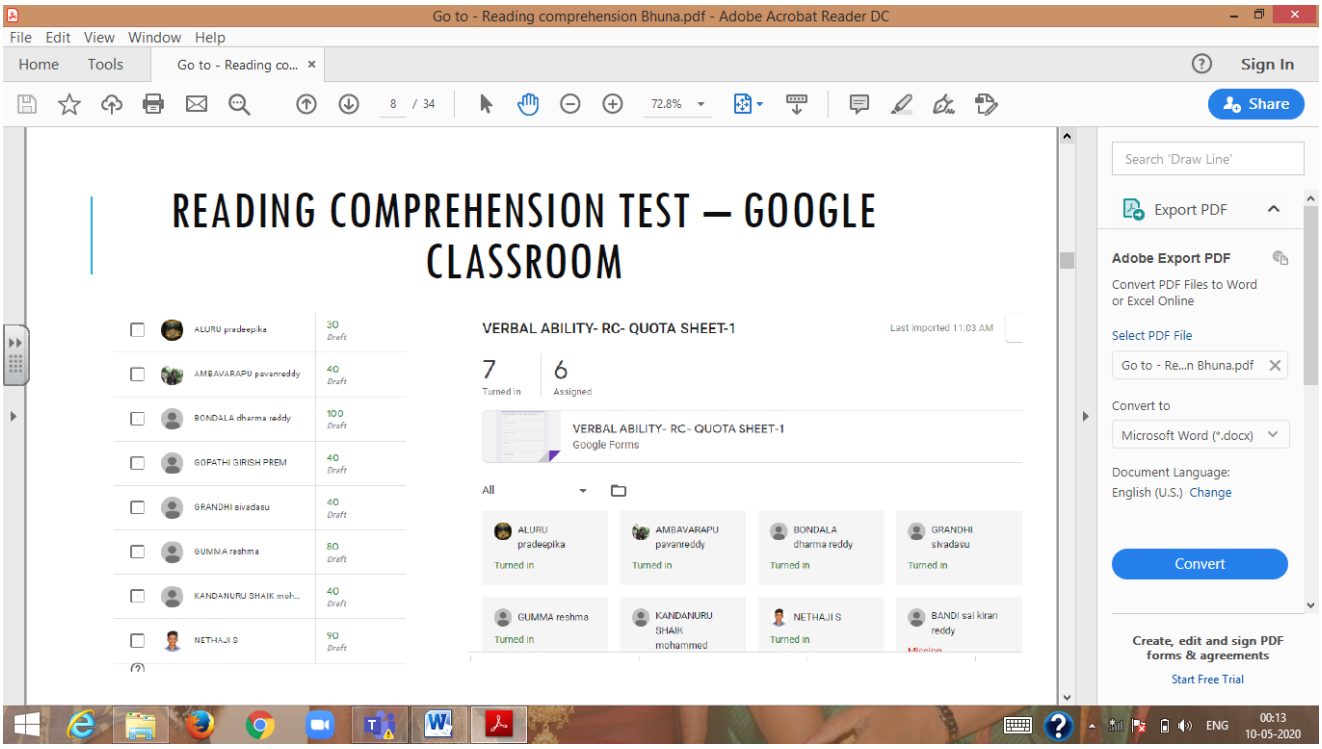


Figure 9 Screenshot of a Classroom Test Submissions

Assignments and assessments were given deadlines after which Google classroom will either allow late submissions or close responses automatically, depending on the instructions given by the tutor as shown in Fig 9. The originality of the submitted assignments can also be checked as an added feature of Gsuite. Quiz can be created through a Google form which was used as a marking scheme, along with quizzes through Google classroom, quizzes were conducted using the Kaizala application. The submission time can also be monitored. Attendance for the students were created through Kaizala attendance request and monitored. The performance and active participation of the students through the question and answers discussion forum that was created using Kaizala application as shown in Fig 6 helped us in identifying the impact of the blended classroom method proposed. Students were also sometimes given open ended questions as assignments which was also used for assessment. Online assessments are generally of multiple choice pattern and peer assessment.

Challenges encountered and overcome

There were some challenges and hiccups in the conduct of the online classes especially in the initial period. Students were not regular and had to be personally mentored about

the importance of attending classes regularly. As required by the institution attendance was taken through Google forms. Monitoring that they did not get distracted as they were on the Net was also a point and the researcher overcame this with constant questions through CHAT and with comments on their performance in the activity. Procrastination was another general malaise with students which is a typical teenage syndrome which was overcome by coming out with the focussing on the best performer on a daily basis. All the activities, quizzes and the assignments were evaluated on a daily basis and the top performer was appreciated publicly, in class. This challenged the others to want to achieve the title the next day and thus worked towards this.

Conclusion

To conclude we would like to state that the advent of online classes have had a tremendous impact on both students and the teachers alike. It was found that there are mixed reactions to the online classes. There appears to be a psychological yearning for the physical F2F classroom but otherwise they have adapted to the crisis very well indeed. It can be said that the blended learning approaches were found to be most suitable as they integrate technology seamlessly and were found to be ideal for both the online classes as well as the F2F classes. The opinions of the teachers have brought about enlightenment on the challenges that are involved in the process of online assessment as also the viewpoint that the assessment patterns that are utilised in traditional classroom set up cannot be replicated here. The instructional quality was maintained with the use of Google classrooms along with a Kaizala group. The versions of formative and summative have become passé in the context of online assessment strategies. A wide variety of clearly explained assignments on a regular basis with meaningful and timely feedback to students regarding the quality of their work has become the norm. These assessments included projects, portfolios, self-assessments, peer evaluations, and weekly assignments. From the responses obtained it is also evident that both the teachers as well as the students have shown a sincere level of commitment towards the transformed teaching learning process.

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