

EMPIRICAL ANALYSIS ON THE IMPACT OF ONLINE CLASSROOM ON STUDENT'S PERCEPTION

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ABSTRACT

Covid 19 pandemic has shifted most of the classrooms to online mode. The primary stakeholders of the virtual classroom are students and many students are unable to attend classes due to various reasons. The Empirical Analysis of Online Classroom's impact on Student Perception gives the review and analysis of the specified community. The paper deals with different online tools used by faculty of Engineering and Management colleges. Moreover to have a clear picture of the scenario, the data is gathered from students of Engineering & Management and this database is given to an online tool and analysis is done by using machine learning algorithm. The students have responded without being bias, as the chosen time to collect the data was when they were in their residence. The sample data is worked out and the pie charts represent perception of various students. Finally, the analysis depicts that students prefer offline classes and during such pandemic situation, they are ready to move online with some criteria.

I. INTRODUCTION

Today's world is shrunk to a technological innate phase and with the advent of easy internet accessibility, it has become easier for everyone to get connected to each other with a click of their fingertip. Moreover, the Covid 19 pandemic has changed the world upside down but brought rapid changes in many ways. However, the biggest challenge was economic sustainability throughout the world nodoubt but the devastative affect was on education, as education institute had to go for complete lockdown. The world did not stop imparting education even during this situation. A full -fledged teaching and learning atmosphere was created throughout the world through many online teaching tools, which is filled with plethora of knowledge, skill set and resource persons as per convenience. This scope was limited in offline teaching. Various online tools made it easy to teach and learn in a fun filled manner.

Internet accessibility made it easy to explore this fun filled expedition by both teachers and students. It was completely a different experience to take and give classes. Many new ways of teaching have evolved through online mode. Pandemic gave way to discover and invent new software for teaching and learning. Teachers not only taught effectively but also learnt to operate and run new teaching software tools, which were never been explored in such an extent before Pandemic.

However, online teaching- learning was not a new concept but exposure for teaching and learning was something new for maximum people through online mood. Initial days were healthy, filled with curiosity and enthusiasm to learn things in online mode, but gradually it lost its charm cause of various issues like unavailable data, devices for accessibility, remote areas network connection, monotonous learning, and lack of interest among students could not make it as effective as offline classes. This study, deals with online teaching- learning tools, problems and its solutions.

II. TRENDING ONLINE TEACHING TOOLS

2.1.1. Online teaching tools

Learning in an online mode is easily accessible which induces lots of instructional scope and education becomes fast and instant. Worldwide Teachers use online teaching tools at lengths. Online tools are used extensively not only to engage in a fun-learning way but also to be more productive. Many tools are meant to be used by parents for quick access and share their feedback instantly.

The trending online teaching- learning tools and their uses are mentioned below:

Zoom: Zoom is video conferencing meeting tool, a cloud-based service. This is used for virtual meet with video and audio enabled facility. This allows live chat and record the entire session for future accessibility. Zoom, during 2020 records to have conducted more than 300 million daily meetings than compared to 2019. Fortune 500 companies and all most all the education institution & MNC companies are its daily users. In Zoom, the hosts would start the meeting through mobile or a webcam. Moreover, Zoom has the facility to schedule and launch meeting from its physical hardware known as conference rooms.

Google classroom: Google Classroom is a great interface that allows students to get enrolled in a class room after they sign in through their mail account. Google classrooms can document its documentations in the form of Google document, Google sheet and even Google slides. Google Classroom is a friendly tool that allows the students and teachers to get along with each other. Google classrooms can create assignments, grade them and send it to students for reviewing. Students can receive assignment notification via mail and can get quick reminder and notifications for the same. It can store study materials in Google Drive. Students can comment in the Google classroom and can share the materials or assignments with each other.

Canvas: Canva is a platform for designing classroom, which uses drag and drop features to visualize learning more effectively .It is a free tool and students and teachers can use it for presentation, create worksheets, assignment or use it for creation of project based learning. This even includes Dropbox, Google classrooms and Google drives. This tool encourages and creates creativity among students in a fun way.

Ed modo: Edmodo is an educational platform where ideas are taken up from different social media and the content is refined for a class. . Through Edmodo teachers and students are connected with each other and share their ideas, problems and solutions. Edmodo allows the teachers to give and grade assignments. A teacher can assign and grade work on Edmodo and at the same time students can seek help from the entire class. Teachers can view the posts that are posted by students, so that the contents remain professional. Parents too can join the classes and can know as what is going on in the class.

Socrative: This tool is a powerful virtual tool, which gives three modes that can be customized. Firstly as a typical question based game, secondly as a mood that adds accuracy and speed called as spaced race and thirdly as Exit mode, that allows the used to get the gist of the lessons learnt. Multiple-choice options, True or false and open response options are added to Socrative. Through mobile or web based options thi stool can be used. EdTech platforms is a great example that uses Scrrative.

Black board: This tool can be used for maximizing productivity and create instructions at anytime. Blackboard Instructor is a fun and engaging tool. It can send and grade assignments at anytime. It allows student connected at anytime with their teachers. It is a synchronous collaboration which includes push notifications, announcements and preview contents.

Moodle: Moodle is an integrated system which is secure made for teachers, students and administrators. Students and teachers can download the software and can login to access and create contents. Moodle is built by the Moodle project, which is led and coordinated by Moodle HQ, which is financially supported by a network of over 80 Moodle Partner service companies worldwide. It is a vast tool for learning in a fun way.

2.1.2 Online Gamification tools

Teaching learning becomes exited with games. Gamification tools also have been created to learn through fun filled environment. They are as follows:

ClassDojo: It is a fun and engaging platform for kids, parents and teachers. Young age students and primary school students can have a great interactions. It can be joined through mobile. Parents and teachers can check the performance of the student. Parents can see the progress of their kids. It is a user friendly too and instantly feedback can be sent.

Kahoot: This tool uses music effects and is a beautiful virtual interface to be connected with students. Kahoot is used for showing even YouTube interface and is quick at identification of questions in a perfect way. This includes

geographical locations, multiplication tables, word roots, synonyms etc. Kahoot is a great platform for online classroom.

Quizzes: It is a great tool like Kahoot. Teachers can create and take tests and can share their test results with other teachers. This tool can create competitive spirit among the students as the score is based on time lit and winner ups.

Mentimeter: This tool helps in an interactive way by creating presentations, slides polls quizzes, gifs and many more options. It is a great online editing tool. Students get involved in a fun way through their phone for answering questions that are asked. Teachers and the participants can visualize the responses and can share the results too, after the presentations. The results can shared and saved for further analysis. It is a great real time tool that is used by students and teachers.

III. CASE STUDY ON ONLINE CLASSROOM BASED ON STUDENT PERCEPTION

In order to carry the research on online classroom and its impact on student's perception, a questionnaire with ten questions is prepared and shared to different categories of students. Around 104 responses are collected from students belonging to different disciplines. The questions are related to psychological, physical, attitudes and attributes towards learning through online teaching mode. The questionnaire is comprised of following questions.

1. Do you have complete access to the device and data availability for online classes?
2. Do you get adequate time to revise lessons that are taught online?
3. Do you think Face-to-face interaction with teacher is important during online classes?
4. Do you think online class takes more time then classroom learning?
5. Do you think online classes give right motivation to get engaged in learning activity?
6. Does online teaching have less scope of interaction then compared to classroom teaching?
7. Is online learning stressful for you?
8. Are online classes enjoyed?
9. Do you think the surroundings around you play a major part in understanding the lessons through online mode?
10. Do you think technical and practical lessons learnt easily through online mode?

The options for the questions are (1) Strongly Agree (2) Agree (3) Neutral (4) Disagree (5) Strongly Disagree. Students have actively participated and have expressed their views without any being bias, as the questionnaire is shared to them in online mode and they have filled from their residence.

IV. RESULTS & INTERPRETATION

The survey is conducted by sharing the Google form to students pursuing different courses and categories of Engineering & Management.

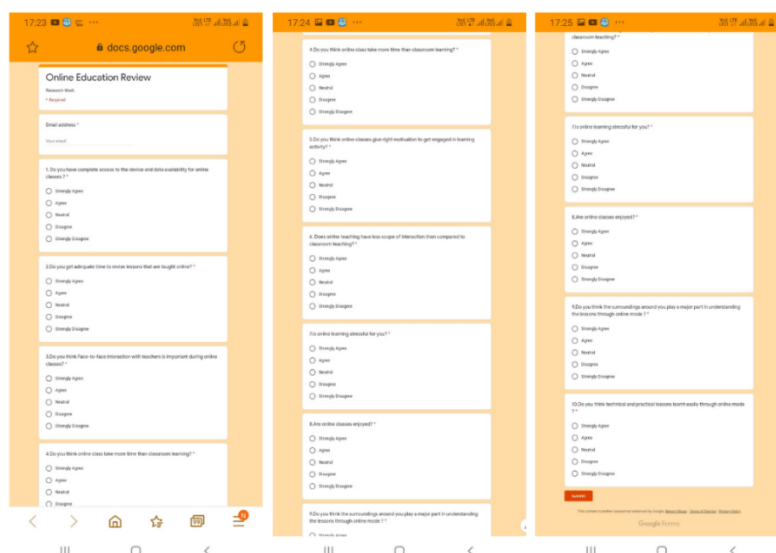


Fig 1. : Questionnaire shared over Google Form

The response for each question is recorded and few samples are shown in table 1.

Table 1 : Sample Data Set

S.No.	1	2	3	4	5	6	7	8	9	10
1	Agree	Neutral	Neutral	Disagree	Neutral	Agree	Agree	Neutral	Neutral	Agree
2	Disagree	Disagree	Strongly Agree	Agree	Strongly Agree	Strongly Agree	Neutral	Strongly Agree	Strongly Agree	Strongly Agree
3	Strongly Agree	Neutral	Strongly Agree	Strongly Agree	Strongly Disagree	Strongly Agree	Strongly Agree	Strongly Disagree	Strongly Agree	Strongly Disagree
4	Disagree	Disagree	Neutral	Agree	Disagree	Agree	Strongly Agree	Strongly Disagree	Agree	Strongly Disagree
5	Neutral	Disagree	Agree	Agree	Disagree	Strongly Agree	Neutral	Disagree	Agree	Strongly Disagree
6	Strongly Agree	Agree	Agree	Disagree	Agree	Disagree	Disagree	Strongly Agree	Strongly Agree	Neutral
7	Agree	Agree	Strongly Agree	Disagree	Agree	Agree	Disagree	Agree	Agree	Agree
8	Neutral	Agree	Agree	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
9	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
10	Neutral	Neutral	Disagree	Strongly Disagree	Neutral	Neutral	Disagree	Agree	Neutral	Disagree
11	Agree	Neutral	Neutral	Agree	Neutral	Strongly Agree	Neutral	Neutral	Agree	Disagree
12	Agree	Neutral	Agree	Strongly Agree	Agree	Agree	Disagree	Neutral	Neutral	Neutral
13	Agree	Neutral	Disagree	Agree	Neutral	Neutral	Agree	Neutral	Strongly Agree	Disagree
14	Agree	Agree	Neutral	Neutral	Agree	Agree	Agree	Agree	Neutral	Disagree
15	Neutral	Agree	Agree	Strongly Agree	Neutral	Strongly Agree	Strongly Agree	Neutral	Strongly Agree	Disagree

The graphical representation is as shown in fig 2.

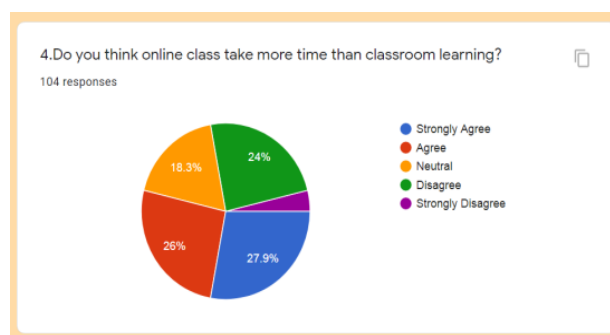
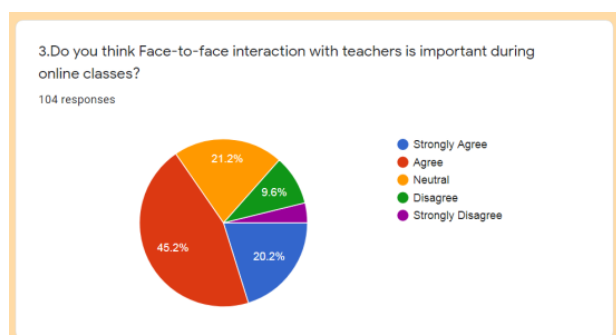
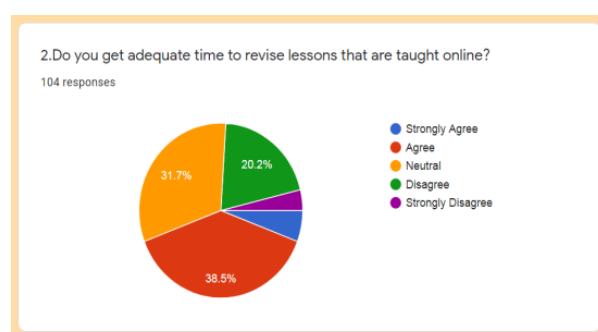
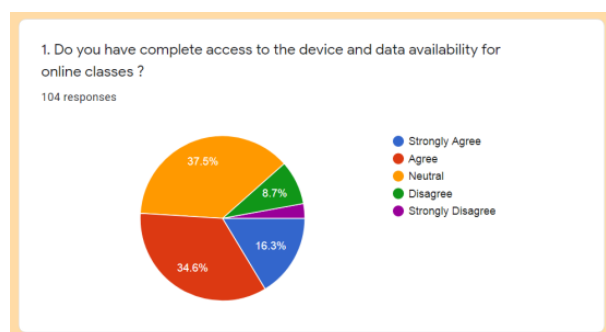




Fig 2 : Responses collected over Google form

The database is gathered and machine learning algorithm is applied and it is observed that the students have responded neutrally. Some prefer online classes while few prefer online classes with constraints. Others are preferring classroom teaching.

V. CONCLUSION

Online teaching and learning is a great experience, provided it is enjoyable by both teachers and students. Teaching tools has aided facilities, which can provide instant accessibility for learning anything with a mighty support from the facilitator. Covid 19 pandemic has made the world to receive and share information in a new emerging way with the influx of many teaching- learning tools especially in education sector. Education with technology sprinted with accelerated speed but gradually slackened as online classroom could not meet the expectations as offline classrooms in terms of its virtual interaction, device or data support and remote area location setup, which appends as an obstacle or disadvantage then compared to offline classrooms. Therefore, majority of students prefer offline mode, as accessibility to learn with teacher in a face-to-face interaction is more flexible, which is without any impediment and does not need fixation of whatsoever facet that are required on online mode. However, students can go for online mode if the constraints demand as it was during pandemic but endow with certain favorable conditions to make learning more effective, transformable, productive, and interesting.

REFERENCES

1. R. A. Nugroho, A. Basari, V. W. Suryaningtyas and S. P. Cahyono, "University Students' Perception of Online Learning in Covid-19 Pandemic : A Case Study in a Translation Course," 2020 International Seminar on Application for Technology of Information and Communication (iSemantic), Semarang, Indonesia, 2020, pp. 225-231,
2. K. V. Singh and F. Khan, "Student perception and knowledge: Assessment of online Computational-Experimental (ComEx) learning modules," 2014 IEEE Frontiers in Education Conference (FIE) Proceedings, Madrid, 2014, pp. 1-6
3. G. Cristina, T. Petru and V. Petru, "The quality of online courses in the students perception," 2017 International Conference on Electromechanical and Power Systems (SIELMEN), Iasi, 2017, pp. 341-346

4. H. Kenthor, "Distance education and the evolution of online learning in the United States", Curriculum and Teaching Dialogue, vol. 17, no. 1&2, pp. 21-34, 2015.
5. K.E. Rudestam and J. Schoenholtz-Read, "Overview: the coming of age of adult online education" in Handbook of Online Learning: Innovations in Higher Education and Corporate Training, London, UK:Sage Publications, pp. 3-28, 2002.
6. K. Arenson, "N.Y.U sees profits in virtual classes", The New York Times, October 1998.
7. J. Anderson, "IT e-learning and teacher development", International Education Journal, vol. 5, no. 5, pp. 1-14, 2005.
8. T. Anderson, The Theory and Practice of Online Learning, Edmonton, AB:AU Press, 2011.
9. M.B. Bianco and A.A. Carr-Chellman, „Exploring qualitative methodologies in online learning environments. Online learning communities”, 2007: p. 299-317.
10. T. Volery, and D., Lord, “Critical success factors in online education. International journal of educational management, “2000. 14(5): p. 216-223.
11. I.E. Allen and J. Seaman, “Sizing the Opportunity: The Quality and Extent of Online Education in the United States” 2002 and 2003. Sloan Consortium (NJ), 2003.
12. J.L. Howland, and J.L. Moore, “Student perceptions as distance learners in Internet-based courses.” Distance education, 2002. 23(2): p. 183-195.
13. L. Song, “Improving online learning: Student perceptions of useful and challenging characteristics.” The internet and higher education, 2004. 7(1): p. 59-70.