

TEACHING AND LEARNING AIDS FOR BLENDED LEARNING

Dr. Sapna Patil, Asst Professor
JDC Bytco IMSR, Nashik (MS), India
sapnapatil.014@gmail.com

ABSTRACT

COVID-19 pandemic had forced many teachers and educators to shift to online/virtual classrooms from physical classrooms. After lockdown was over and physical classrooms were opened, it was realized that a combination of online and offline works best for students. It is thus extremely important for teachers to create lessons in a manner that is engaging, enjoyable and educative at the same time using traditional and online method. Every teacher has a unique teaching style in the classroom that makes teaching effective and there is a dearth of online tools available that can be used by them to supplement their classroom teaching. However, teachers may find it overwhelming to dig from the pile of resources available on the internet. This paper focuses on online tools that can be used by teachers along with classroom teaching. It discusses tools that are available on the internet which will help teachers and educators for blended teaching and learning in an interactive manner while ensuring high student engagement. Some tools discussed in the paper are completely free while others can be accessed using a free basic account that suffices the teaching purpose for most of the teachers. Learning Management Systems like Google classroom and Canvas Instructure, interactive lesson planning tools like Pear Deck, DirectPoll and Padlet, fun game quizzing tool Quizziz and interactive feedback collection tool Typerform are discussed at length.

Keywords: Online teaching tools, free tools for teachers, LMS, student engagement tools, interactive feedback tools

Introduction

COVID – 19 pandemic pressed a pause button in lives of almost everybody on the earth. Except essential service providers, every human being was expected to stay indoors to support governments' measures to prevent spread of the novel coronavirus from early 2020. Beginning on March 24, 2020, India was placed under complete lockdown. Even now, over 11 months later, India is seeing an increase in COVID 19 positive cases. Although there are physical limitations, existence itself is unrestricted. In the new normal, people have heavily incorporated technology into their daily lives to do both personal and professional chores in the hopes of going back to the way things used to be. Everyone has adapted technology in their own unique ways to pursue their professional and personal objectives. With blended learning, teachers can incorporate internet tools and materials into their regular lesson plans. By leveraging many of the internet tools and resources that students currently use for social networking or other entertainment purpose, blended learning aids teachers in creating an approach that is more engaging for this generation of students. In this paper, an attempt is made to study the various cutting-edge technology tools that educators around the world utilise to instruct and motivate students in an online setting.

Literature review

The use of online platforms for teaching and learning shouldn't be limited to emergency situations; rather, it can be used alongside traditional classroom instruction as part of a blended learning model of education once things have calmed down. There is a need for teacher professional development, with a focus on digital literacy and the use of ICT platforms and tools for instruction. Additionally, ICT infrastructure must be improved globally, but especially in poor nations where the digital divide prevents socioeconomically disadvantaged groups from benefiting from online education, depriving them of their fundamental right to education. (Hassan, 2020). With regard to technological developments in particular, education is a complex system that necessitates numerous viewpoints and levels of study to comprehend its contexts, dynamics, and actor interactions. When determining the appropriate method for coordinating learning objectives in technology-based implementations, educational technology capabilities (ETC) offer complementary insights. (Castro, 2019)

Blended learning is congruent with the ideals of traditional higher education institutions and has the ability to improve meaningful learning experiences' efficiency and effectiveness. (Garrison, 2004). When it comes to improving students' educational experiences, blended learning can be viewed as an effective method of remote learning. Future educational models are projected to increasingly emphasise student-student and student-instructor interaction. (Tayebnik, 2012). From administrative standpoint, blended learning offers the chance to boost an institution's reputation, increase access to its educational programmes, and cut expenses. The difficulties include integrating blended learning with institutional priorities and goals, overcoming organisational opposition to change, and lacking organisational structure and partnership and cooperation experience. (Vaughan,2007). Through adaptable online information and communication technology, fewer

students in congested classrooms, and structured teaching and learning experiences, blended learning includes online learning activities and aids students in receiving meaningful education. (Kumar, 2021)

The type and scope of the emotional labour that certain lecturers go through when they adapt their teaching and learning strategies to include technology is vast. The difficulty is so great that even the most ardent proponents of online teaching techniques may think about quitting up and going back to the old-fashioned methods of instruction. (Bennett L., 2014). However, Performance during the discipline has a discernible improvement as a result of blended learning. University professors observe that when a complete approach to learning is used, pupils become more engaged. Continually improving the discipline's curriculum is a comprehensive strategy, and succeeding implementations can draw on the successful use of a variety of blended learning approaches. (Stepanova, 2020)

When planning for flexible learning, peer instruction and flipped learning should be taken into account. Even when switching between various modes becomes essential owing to changes in this pandemic, these approaches can foster learning and generate smooth active involvement in completely online and blended contexts. In these trying times, it is crucial to switch between entirely online and blended learning as and when necessary, especially for campus-based colleges that want to ensure the smooth operation of their programmes even in trying situations. (Nerantzi, 2020)

Research Methodology

Objective of the study

- To study different innovative technological tools that can be used by teachers for online/blended teaching

Scope of the study

- Considering the resource crunch that is faced by largely by teaching community; software, applications or tools that are available free of cost on the internet are highlighted in this paper.
- Tools included in the paper are related to theoretical or conceptual courses/subjects that are taught to adults who can handle/operate device on their own

The study has used online desk research methodology. Two step approach was used for the study. Google scholar was used for modulated search for innovative teaching tools that are available online. From relevant results, few promising tools were selected on the basis of ease of use and availability of those tools free of cost. Relevant information was then extracted using specific business websites.

Secondary Data Analysis

● Google classroom

Google Classroom is a free tool that can be used by any University that does not have enough resources to form its own LMS (Learning Management System). It aims to simplify creating, distributing, and grading assignments. The primary purpose of Google Classroom is to streamline the process of sharing files between teachers and students. Users need a Google account to use this tool. This LMS can be accessed using computer/laptop without any application installation. For using Google classroom on smartphone, users can download for free from app store or play store. Google Classroom reduces the paperwork for the teachers and assists in classroom management. It also helps in enhancing the student-teacher interaction and communication. Google classroom is the most downloaded LMS in the world followed by Canvas which is discussed later.

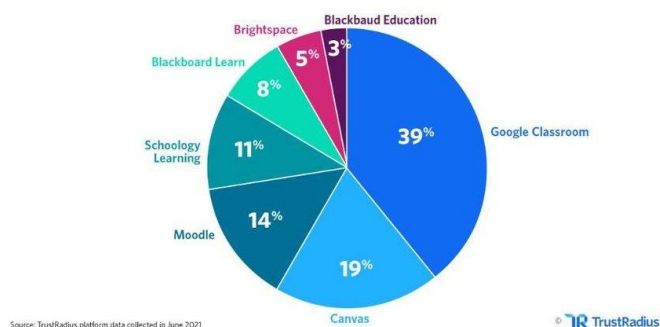


Figure 1: The most downloaded LMS in 2021 (Spirin, 2022)

Teachers need to spend some time initially to understand the various features of Google Classroom as the study suggests that a number of teachers faced initial difficulties in getting used to its functionality. (Azhar, 2018)

Teachers should also conduct a session to train students regarding the importance and use of Google Classroom in which they could explain the various features and benefits for the students. The benefits of using Google classroom in implementing education is to improve the teachers' and students' quality to use technology wisely, especially for learning process, saving time, being environmentally friendly, overcoming distance of residence, increasing collaboration among students, timeless communication, and as a secure document storage. (Ketut, 2019)

- **Canvas Instructure**

The Canvas, developed and maintained by Instructure, Learning Management System (LMS) is used in thousands of universities across the United States and internationally, with a strong and growing presence in K-12 and higher education markets (Marachi, 2020). Canvas provides a host of features to enrich teaching learning process like course delivery using different modules, discussion forums, assignments, tests, grading, feedback and many more. All functions can be used through a web based software application using the website. It can also be downloaded for free from Google store/ Apple store just like Google Classroom but with a small difference. Google classroom has only one application that can be used by both students and teachers. However for using canvas Instructure LMS, students need to download Canvas student and teacher needs to download Canvas Teacher.

- **Peardeck**

Student engagement is one of the major challenges faced by many teachers. Student performance can be increased with the help of active learning. Student engagement in classroom is essential for active learning. Pear Deck is one of the tools to improve student engagement in online environment. Pear Deck is an educational technology company offering a web-based application to schools and teachers. Teachers can create lessons with interactive slides to ensure student engagement even in online sessions.

Pear Deck is not completely free. Few basic features are available to teachers after free sign up, however to avail all features, a teacher would be required to upgrade to a premium account. A study conducted to examine the use of online portal (Pear-deck) for active learning pedagogies and its impact on students' learning outcome by comparing the results with the traditional classrooms. The results show that active learning pedagogy activities are significant factors that increase students' performance in comparison to students in traditional classroom. (Javed, 2018)

- **DirectPoll**

Teachers can use certain technological tools to check opinions of the students, decision making or for ensuring student engagement by making their vote count. DirectPoll is a free all in one package for opinion polling, entertainment, decision support as well as a service for modern learning (blended learning / flipped classroom). DirectPoll is live and everywhere. Polls can be organized spontaneously and conducted immediately. Teachers can go to the website and create polls that can be used immediately in the classroom, both physical and digital.

Teachers are required to develop polls by include questions and appropriate options as potential responses. The teacher receives a URL that can be shared with the class to conduct a poll. Participants can provide feedback or cast their votes by clicking the link to the polling website using their cellphones, tablets, or PCs. The outcomes are then live-streamed to the audience or watchers as an animated graphic. Online polls can be made. Even when a poll is in progress, questions can always be changed. DirectPoll makes it possible for the audience and the presenter to interact to a great extent.

- **Padlet**

One of the ways of optimizing student engagement is using a virtual bulletin board for fostering creativity and collaborative work by students. Padlet helps teachers to create post it notes on a wall that can be easily shared with students via a link. Students can then express their opinions openly or anonymously that can help in better class participation and engagement. Padlet is completely free. Teachers can sign up for free, create walls and share links with students. Using Padlet in instruction provides a non-threatening space for the collection and curation of collaborative classroom work as all students have the ability to contribute and learn from one another and all voices can be heard on a graffiti wall, which is an idea that strikes right at the heart of teaching profession. (Fuchs, 2014). A survey of the usability of this tool for constructing new knowledge and for collaborative learning indicated that students could learn and generate new ideas when using this tool and hence, Padlet can be used for collaborative learning in the format of a debate to get new ideas. (DeWitt, 2015)

● **Quizziz**

Student’s evaluation in online environment can be done by conducting online quizzes using tools like Google forms. However, to add a fun and creative element in the entire evaluation process, quizzes can be converted into games where students login as players. Quizziz is an online free tool that can be used by teachers to create quiz style assessments. Teachers and students can access using the website or download application on their Android or iOS phone for free. Teachers can sign up for free and create a new topic related quiz or use quizzes from open source or public library. Teachers then ask students to join the game using a unique code. Teachers can be live with the students or assign it to students to solve it later.

No	Item	SD	D	N	A	SA	HS	I
1	Quizziz is interesting and fun	-	-	-	1	19	950	SA
2	Quizziz has an attractive display	-	-	-	5	15	750	SA
3	Quizziz has many challenging features	-	-	5	5	10	500	N
4	I enjoy doing the test using Quizziz	-	-	1	16	3	640	A
5	Quizziz feels like a game	-	-	4	13	3	520	N
6	Quizziz doesn't make me tense in doing the test	-	2	3	9	6	360	D
7	I can't cheat during the test using Quizziz	-	-	-	2	18	900	SA
8	Quizziz creates a competitive atmosphere	-	-	-	-	20	1000	SA
9	I feel encouraged to be number one on the leaderboard	-	2	5	6	7	350	D
10	Quizziz is better than the traditional test	-	-	-	3	17	850	SA
Score (S)		0	4	30	60	119		
S X Option Value		0	8	90	240	595		
Total Score						933	SA	

Note: HS = Highest Score; I = Interpretation

Figure 2: Students' perceptions of the use of Quizziz as an online assessment tool (Amalia D.,2020)

The above table shows that students feel that Quizziz is interesting, fun, has attractive display, limits cheating, creates competitive atmosphere and is better than traditional tests. Thus, Quizziz add more value has more appeal from students perspective.

While investigating the effectiveness of Quizziz on enhancing students' learning experiences in an accounting classroom and after doing in-class exercises using Quizziz, students reported that this app brings positive impact on their learning experiences and class section in which Quizziz is applied more frequently reports higher scores on the satisfaction of using this app and higher scores on the instructor's teaching evaluation. (Zhao, 2019)

● **Typeform**

One of the paramount important tasks for teachers is to collect feedback from students regarding their teaching and evaluation methodology. Feedback gives a clear picture to educators regarding the pedagogy used by that specific teacher. Feedback in online environment can be collected using many tools. The most popular and common tool used is Google forms. However, to add more personalisation while collecting feedback, Typeform can be used by teachers to create feedback forms that students will actually like to fill in. Most of the features of Typeform are free and can be availed by signing up for a basic account from the website. Also, if a teachers wishes to use all functions, they can upgrade their subscription to premium.

The user experience of the one-question-at-a-time interface is more conversational, which leads to better responses. To fit their teaching style or student group, teachers can change the typeface, colour scheme, background, and graphics on their Typeform. Once a Typeform feedback form has been established, it is simple to share a link with students. On any device, Typeforms feel nice and look fantastic.

Findings

Integration of ICT in education is inevitable and specially after COVID-19 pandemic it has become imperative for teachers to incorporate technology in their teaching methodology. There are numerous tools available on the world wide web and after using above mentioned tools following are few key findings:

- Google Classroom is a free LMS tool from Google Inc. It provides numerous features for both teachers and students and is extremely user friendly. It is also available as mobile app on Android and iOS. With just a Gmail account, a user can use all of its features at no extra cost

- The Canvas LMS developed by Instructure is relatively complex. Teachers need email ids of all students to invite to the course class. However, the courses can be released in a phased manner for students and learners ensuring step wise learning. Also teachers can effectively use feedback at frequent intervals at regular intervals using this LMS. Separate student and teacher app is also available for both Android and iOS.
- Slides can be used effectively if they are made interactive. Peardeck application allows teachers to create interactive slides. These slides can be inserted before session to understand awareness of the students about the topic, during the session to understand if the teaching methodology and pace is helping students to understand the topic and after the session to collect formal feedback regarding the entire session. This tool is specifically useful when sessions are conducted online.
- One of the major challenges faced these days by the teachers is student engagement in both online and physical classrooms. Teachers can use DirectPoll application effectively to ensure interaction in their classrooms. It is extremely easy to use both by teachers to create polls and students to cast votes or give their opinion.
- Some teachers need to conduct brainstorming activities in the class. Usually few extrovert students lead and contribute to the discussion. Padlet tool can be used by teachers to ensure contribution from each and every student. A teacher just has to create a wall and encourage students to write on the wall using their own smartphone. This ensures constructive discussion taking into consideration the viewpoint of each student. This tool is also helpful to obtain open feedback from all students.
- Quizizz is a great online free tool that helps teachers create quizzes in gamification format. This helps students to engage more and teachers to ensure that their students are grasping the concepts taught by them. The competition to score more and be the winner ensures students study well and do well in the quizzes conducted by their teachers. Progress report for each student can also be mailed to parents to track evaluation of their child.
- Typeform application helps collect feedback from the students in interactive manner as it is more conversational than tools like Google Forms. Teachers can expect more response rate using Typeform.

Limitations of the study

- Only free software, applications or tools that are available on the internet are highlighted in this paper. There are several paid tools available on the internet that can be used effectively in online teaching learning process. However, such tools are not discussed in this paper.
- Tools included in the paper are related to only theoretical or conceptual courses/subjects that are taught to adults who can handle/operate device on their own. Teachers and students face a huge challenge to deal with practical or numerical subjects in online environment. However, scope of this paper was limited to tools that can be used for theoretical subjects only and as such only few tools are discussed.
- Tools that are discussed in this paper cannot be use by kids and are meant to be used by only those students who can handle technology on their own without relying on parents/adults.

Conclusion

Teaching is one of the important roles of a teacher working in any educational institute. Teachers are very familiar with the traditional instructive lecture-type teaching format. However, there are many newer innovative teaching methods that can be used by teachers to enhance the traditional lecture format. This blended learning methodology can help to ensure best performance from the students. With the COVID-19 pandemic, teachers and students have largely embraced online teaching learning process and now most of the educational institutes are using a blend of online and offline methodology. Hence it is imperative that teachers have access to the resources to keep pace with the growing tech culture.

This paper provides few tools that may be used by teachers during online classes or compliment their traditional teaching in physical classrooms. Many tools, technologies and resources keep coming up with time. We are entering an exciting era of online teaching learning process and there are several possibilities with technology. Teachers can explore these to suit their subject and student group and accomplish more in their physical/virtual classroom by provoking student's curiosity, boosting engagement, and leading to better learning and comprehension.

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