

Online Tools for Strengthening Remote Teaching-Learning in the Times of Emergencies-COVID-19

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Abstract

COVID-19 is a pandemic which disrupted the world's economy; however, on the other hand, helped in bringing reforms in traditional educational practices. Many changes emerged in the Education System, and one such change is the method of dissemination of education, which had to undergo rapid transformation, that is to adapt to Online System of Teaching, integrating a Traditional Classroom with Online Elements to avoid delays in the Academic Schedules. The teaching community had no choice but to explore some of the new tools and focus on techniques that could make them a competent instructor and also make sure that the students are prepared for Online Classes. The higher education institutions are looking for online tools to continue teaching-learning process without interruption. This paper highlights details of various online software's which can be effectively used in teaching, learning, and evaluation processes.

1 Introduction:

Digital learning environments in the current technological era led to new changes in educational processes and knowledge sharing. The younger generations are more into the digital world through social networking, encouraging teachers to bring significant changes in educational practices [1]. In the current scenario of Corona Virus spreading worldwide, the conventional practices of teaching became incomprehensible. COVID-19 throws challenges to the teaching fraternities to move towards remote and online teaching-learning modes. The main criteria being the safety of public health in emergencies, all the universities, colleges and even schools are showing interest in remote teaching to continue education even in these difficult times. In this burning situation, several educational institutions have opted to cancel the traditional classroom style teaching and shifted to online classes using the live video instructional modes. There is an increasing trend in higher educational institutions using online resources, such as small institutions to community colleges to universities [2]. The learning and instruction trend status of hundreds of institutions were reported recently [3]. With the support of institutional hierarchies, most of the teaching is probably happening online, which gives flexibility in teaching and learning anywhere and anytime. Although this new online experiment is overwhelming, it is always compared to face-to-face teaching in classrooms.

Even in traditional classroom teaching blended-learning, flipped classroom strategies are opted by innovative teachers to improve the student's performance in taking new challenges. These teaching pedagogies should be able to strengthen student towards not only in learning but also in developing skills, personal development, and motivation [4]. During this technology era, an outdated teacher should be replaced with an updated teacher who uses and develops innovative online pedagogies to boost the student learning needs [5].

The current teaching-learning scenario is under construction stage, which needs periodical renewal or updating pedagogies, developing individual towards innovative-thinking and self-development towards acquiring knowledge [6, 7]. Critical thinking is one of the new educational developments which enable the teacher and learner to be the part of the knowledge transfer process, creates innovative ideas in a student and allows self-motivation in understanding, creating and analyzing things [8, 9].

This study is set out to explore and analyze the innovative online teaching-learning tools in terms of improvement in a meaningful learning environment.

2 Online Teaching Tools

The online teaching tools help to sensitize students to improve educational practices, self-development, strengthen skills which lead to overall development without a break under challenging times (COVID-19). This change can enable collaborative work in planning and developing interactive skill sets in learners when the teacher is prepared for the transformation leaving behind the traditional practices [10].

There is a wide range of online tools available free of cost or maybe less expensive, which can be readily employed by the teachers in a learning management system, flipped classroom, virtual learning scenarios. The schematic representation of teaching-learning and evaluation process is illustrated in Fig. 1.

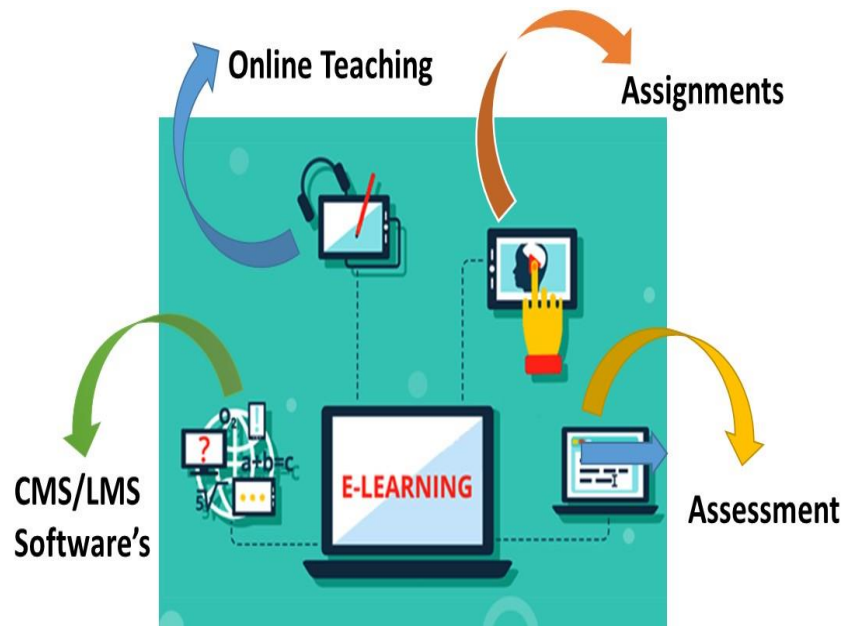


Fig. 1 Four main aspects of Teaching-Learning & Evaluation

2.1 Open Source LMS/CMS

Two leading active and passive E-learning platforms opted for teaching are Content management system (CMS) and Learning management system (LMS). CMS is a one-way approach or passive application where a learner can only view documents or files, where LMS is a tracked interactive tool which motivates the learners to be interactive. The major differences between CMS and LMS are given in Table. 1 and the software used is shown in Table. 2.

Table. 1 Differences between CMS and LMS

CMS	LMS
Allows to create, edit and publish content	Allows to create and deliver educational courses
Allows archival/index the course content in logical order	Enables course administration and tracking
Exclusively designed for managing web content	Allows to manage and assess student's data

Table. 2 LMS/CMS software's for online-Teaching

S.No	Software	Features	Web link
1	Google classroom	Content Creation	https://classroom.google.com/
2	Dokeos E-learning Suite	Numerous	https://www.dokeos.com/
3	Online Moodle Cloud	Free & Open source	https://moodlecloud.com/
4	Sakai	Free & Open source	https://www.sakailms.org/
5	Course sites	Free version of Blackboard	https://coursesites.com/
6	ILIAS	Free & Open source	https://www.ilias.de/
7	ATutor	Free & Open source	https://atutor.github.io/
8	Canvas	Free & Open source	https://www.instructure.com/canvas/en-au
9	ELMSLN	Free & Open source	https://www.elmsln.org/
10	Kornukopia	Free, Education Management	https://kornukopia.com/
11	Open Edx	Popular open source	https://open.edx.org/
12	Chamilo	Free & Open source	https://chamilo.org/en/
13	Forma	Free & Open source	https://www.formalms.org/
14	Eliademy	Free & Web based	https://elearningindustry.com/directory/elearning-software/eliademy
15	OLAT	Free & Open source	https://www.openolat.com/?lang=en
16	Course Networking	Faculty & Student friendly	https://www.thecn.com/
17	Edmodo	Facilitates learning Goals	https://new.edmodo.com/
18	Piazza	Wiki style format enable collaboration	https://piazza.com/
19	Blog	CMS	https://blogger.com/
20	Wordpress	CMS	https://wordpress.com/
21	Social Media based	CMS	Facebook, LinkedIn, Twitter

2.2 Online Classes

Many online platforms are encouraging live video conferencing between teacher and students for communication. Online tools incorporate live lectures in terms of video streaming, text sharing, image sharing. Table. 3 illustrates the online classroom tools for effective communication and conduct of classes.

Table. 3 Useful software’s for conducting online classes

S.No	Software	Features	Weblink
1	Zoom	Up to 100 participants, 40 minutes	https://zoom.us/
2	Cisco Webex Meetings	Up to 100 participants, limited time	https://meetingsapac9.webex.com/
3	Skype Meet now	Up to 100 participants	https://www.skype.com/en/free-conference-call/
4	Jitsi meet	75 participants	https://meet.jit.si/
5	GotoMeeting/Goto Webinars	Limited Time, Cheap	https://www.gotomeeting.com/
6	Blu Jeans	30 day trial	https://www.bluejeans.com/
7	Webex Teams	Up to 100 participants	https://www.webex.co.in/
8	Uber conference	Up to 10 participants	https://www.uberconference.com/
9	Life Size	Up to 25 participants	https://www.lifesize.com/
10	Circuit	Free, Unlimited time	https://www.circuit.com/register/
11	Lark Meetings	Up to 100 participants	https://meetings.larksuite.com/
12	Big Blue Button	Numerous	https://bigbluebutton.org/teachers/
13	Google Hangout	Up to 250 participants	https://gsuite.google.com/
14	Microsoft Team	Free	https://www.microsoft.com/en-us/education/products/teams
15	Prezi Video	Free version Up to 250 participants	https://prezi.com
16	Slack	Time saving	https://slack.com/intl/en-in/
17	PowToon	Unlimited storage	https://www.powtoon.com/
18	Google meet	Free	https://meet.google.com/

2.3 Student Assignments

The online resources allow students to perform collaborative work, helps group learning, peer-learning, self-learning in the development of skill and reach competencies. Table. 4 elaborates type of assignments provided to students to achieve the above-said components.

Table. 4 Software’s for different types of Student assignments

S.No	Software	Assignment Type	Weblink
1	Google Form	text, video, excel, video, pdf, audio.	https://docs.google.com/forms/u/0/
2	Google classroom	text, video, excel, video, pdf, audio.	https://classroom.google.com/
3	Edpuzzle	Video	https://edpuzzle.com/
4	Github	Coding	https://github.com/

2.4 Instantaneous Assessment

Some of the online tools make it possible for direct performance assessment of a student can be measured in terms of many ways. The most popular techniques for student assessment include multiple-choice

questions (MCQ), Quiz, assignments. The details and features of such software's used for such assessments are given in Table. 5.

Table. 5 Useful software's for conducting online classes

S.No	Software	Features	Web link
1	Google Forms	MCQ with auto evaluation, Polling, Assignment submission, Data Collection/Survey, Registration Forms	https://docs.google.com/forms/u/0/
2	Mentimeter	MCQ with auto evaluation, Polling, Data Collection/Survey	https://www.mentimeter.com/
3	Plickers	Instantaneous responses from students without clickers, computers or tablets.	https://get.plickers.com/
4	Kahoot	Used by Teachers, students, businesses and parents for group learning, e-learning, distance learning, and self-study, everywhere	https://kahoot.com/
5	Socrative	Multiple choice, True/False, Short Answer with text formatting options	https://socrative.com/
6	Quizlet	Assessment can be done only for licensed version	https://quizlet.com
7	Vizia	Engage viewers by integrating quizzes, polls, and videos	https://vizia.co/
8	Poll Everyone	Captures powerful feedback instantly during virtual meetings, classes, events, and more.	https://www.polleverywhere.com/
9	Edpuzzle	Engage viewers by integrating quizzes, polls, and text pop-ups, audio notes	https://edpuzzle.com/
10	Quizizz	MCQs, Polls, Checkboxes, Fill in the blanks, Open-ended Questions	https://quizizz.com/
11	MS office forms	Polls, Quizzes, Excel Analyzer	https://forms.office.com/Pages/DesignPage.aspx/

3 Conclusion

The changing needs in traditional teaching practices apart from continuing teaching during difficult times led to an increase in online dependency resources. The online tools create a new constructive knowledge bearing environment leading us to a new era of the teaching-learning process. The teaching-learning process in itself has a two-fold advantage to both students and teachers, which is linked to academic development. Online tools also allow flexibility with teaching practices, student assignment deadlines, course and institutional policies. Hence, there is an urgent need to rely on online tools and incorporate them for meaningful teaching-learning and dissemination of knowledge. Though COVID-19 surely has stressed people economically, it is the time to identify weaknesses and inculcate preparedness in the near future through proper planning towards knowledge dissemination.

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