

Tools for Conducting Effective Online Learning

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Abstract - Online teaching and learning denote education that takes place over the Internet. An important number of colleges in India and abroad are switching from out-of-date face-to-face classes to entirely online, web-based courses. Online education, often mentioned as distance education or web-based education, is currently the latest, most popular form of distance education. It has, in recent times, become an essential part of many university curriculums. This paper delivers a brief overview of online learning and the selected communication tools for online teaching and learning.

Index Terms – Online Teaching, Web Base Courses, Online Learning Tools, MOOCs.

INTRODUCTION

Online teaching and learning are intended to reach and involve modern learners anytime. Many researchers and research institute widely hold massive Open Online Courses (MOOCs). Reasons to propose an online course include easy and suitable access to students, high degree completion rates, and such courses' pull for non-traditional students. Likewise, the hurdles to accepting online courses are the lack of faculty assurance and the high course execution and delivery cost.

They were bearing in mind that student characteristics are vital to successfully implementing online teaching and learning. Approaches that work for traditional full-time students may not be as practical for adult trainees with full-time jobs and family responsibilities. These students are practically-oriented with a greater interest in tools and techniques.

Remote Learning Tools

Getting familiar with how the tool or platform you're using works is just as important as selecting the right tool. Explore each resource and learn how to maximize

its usefulness to create a better teaching experience. Your students will depend on you to teach them how to use the platform themselves. There is a range of distance learning software available, and from them, we have chosen the best and ranked them according to their primary purpose.

Online communication tools

Effective communication is the key to successful teaching and learning, whether physical or virtual classrooms. Communicating online with not one but more than twenty students is undoubtedly a challenge. Communication platforms help overcome it; they enable communication with larger groups, video conferencing, instant messaging, audio calling, virtual rooms, etc., with any device and from any location.

Some of the requested tools are,

- Zoom
- M.S. teams
- Skype
- Google Meet
- Webex

For a better learning experience with these tools,

- Create an agenda or plan for any online course and share it before class
- Explain clearly what online etiquette students should follow during the lesson and what expected of them before or at the start of the lesson
- Mute all microphones except the speakers. This helps to suppress disturbing noises and keep the students' attention. Anyone who needs to talk can make gestures to get the speaker's attention without interrupting him.

- When giving a presentation or sharing an image, document, or file, give students time to take notes, review, or scroll through them.

Online whiteboards

Online whiteboards or digital whiteboards can mimic students' classroom whiteboard/blackboard experience. Most of these tools provide an endless canvas of shape libraries for creating various types of diagrams, charts, graphs, and other visualization purposes (i.e., creating posters, graphic organizers, etc., 2020 was a year of transformation. Everything has changed, including the way children and students go to school. During the pandemic, most countries have introduced social distancing rules, 20-second hand washing practices, and preventive wearing of masks in public. It has influenced the way teachers and students interact is an understatement. In March, millions of children moved from face-to-face classrooms to virtual education set up at home. During the early months of the pandemic, teachers had to scramble to find the best ways to set up a virtual classroom that would keep their students engaged. During these months, educators of all levels tested tools and programs until they found their favourites. We scanned the Internet to find out what it was. We've collected 15 versatile online learning resources for this article to enrich your classroom.

REVIEW OF LITERATURE

Beatty and Ulasevich, 2006; Li and Akins, in their 2005 research, found that the popularity of online classes has increased in recent years and that schools and colleges have also tended to increase online courses to provide education. Corresponding changes in technology and student passion have profoundly affected online education in schools and colleges (Bennett and Locker, 2004; Brit, 2006). According to Augustina and Kahino, 2017 online education will be a tool to address the current situation and provide education effectively.

Bond et al., 2018; According to Sandkuhl & Lehmann, 2017, Establishing online education in higher education institutions is problematic, with technology becoming a part of all areas of human life. We need to

look at the problems and solutions encountered in setting up online education accordingly.

Abad-Segura et al., 2020, suggested that there should be a specific management mechanism to adjust to changes in technology to adapt to these dire conditions.

Hodges et al., 2020; Bozkurt & Sharma said that their research in 2020 will include teaching and practice in effective online education, assessment of benchmark concentrations on numerous research papers and case studies, principles, models, theories, ethics and quality online course design, teaching and learning.

Effective online learning is defined as applying an organized model established for the design and development of instruction and a by-product of instruction planning. (Branch & Douse, 2015).

There are five types of barriers to providing online education in higher education institutions: (i) changes, (ii) speed, (iii) technology, (iv) economic conditions, and the need for appropriate assistance to deal with them, Cope et al. (2019) said in their research.

Online learning is a tool or technology to provide higher education institutions. So they explained that digitalization in higher education should not be called online learning (Means et al., 2009).

Online education is something to be discussed because the implementation of online education does not result in a face-to-face relationship between teacher and student. Online courses, however, require careful planning. In their research, Hodges et al. (2020) said that online education is considered alternative teaching in this dire situation and that the approach to online education is somewhat different from effective and quality education.

Many schools and colleges implement online teaching in their course without proper planning and procedures. However, they said that first, the faculty development program should be set up for the teachers, and they should be made aware (Abhinandan, 2018).

OBJECTIVES OF THE STUDY

1. To know a brief about online teaching and online learning.

2. To be aware of communication tools for online learning.
3. To know the communication tools performance in online learning
4. To understand the benefits and challenges of online learning

RESEARCH METHODOLOGY

This study is conducted based on Secondary and Primary Data. We have gone through the various articles, journals, academic reviews, and educational reports for this study.

Online Platforms	No of Respondents
Zoom	200
Google Meet	200
Webex	200
M.S. Teams	50
Skype	72
Total	722

Source: Primary data

Hypotheses of the study:

H0: There is no statistical significance in the online education platforms and online learning acceptance.

H1: There is statistical significance in the online education platforms and online learning acceptance.

Statistical tools used:

Regression

Regression is a statistical method used in finance, investing, and other disciplines to determine the strength and nature of the relationship between a dependent variable (commonly called Y) and several other variables (called independent variables).

The two basic types of regression are simple and multiple linear regression, although nonlinear regression methods allow for more detailed data and analysis. Simple linear regression uses the independent variable to explain or predict the dependent variable of Y, while multiple linear regression uses two or more independent variables to predict the outcome.

The general form of each type of regression is:

Simple linear regression: $Y = a + bX + u$

Multiple linear regression: $Y = a + b_1X_1 + b_2X_2 + b_3X_3 + \dots + b_tX_t + u$

Or:

- Y = the variable is trying to predict (dependent variable).
- X = the variable the researcher uses to predict Y (independent variable).
- a = the ordinate in origin.
- b = the slope.
- u = the regression residue.

ONLINE TEACHING

Online teaching offers thrilling opportunities to enlarge the learning environment for a diverse student population. As the request for online education grows, college professors may be asked to reflect teaching their classes online. Online teaching is connected to face-to-face instruction, focusing on skills and requirements. The two methods are alike in content, excluding pace and delivery. Instead of emerging courses from abrasion, an organization has developed to take care of the courses. Professors must use Course Management System (CMS) software to prepare and deliver their courses. Using the software allows the instructor to get it right from the start.

For online teaching to be successful, the teacher is suggested to follow the following six principles: (1) Inspire student participation, (2) Encourage student teamwork, (3) Encourage active learning, (4) Highlight work, (5) Emphasize work time, (6) Stating high opportunities.

Respecting different aptitudes and ways of learning. Another seven can be added to these principles: (1) determining personal differences, (2) motivating the student, (3) evading information overload, (4) creating the real-life setting, (5) indorsing social interaction, and (6) providing new activities and (7) Encourage student likeness

ONLINE LEARNING

The learning process is compound and includes the auditory, visual, and tactile senses. The traditional method of learning at a campus university is not for everybody. Online learning is for those who want to study for a degree and work or other promises. Online learning is a form of distance education and is referred to as web-based learning, e-learning and digital

learning. It is provided over the Internet and uses web-based materials and activities.

The student must be theoretically practical to use the necessary technical tools. Students in the digital age appear to be more independent, disciplined, and technologically savvy, better suited online. Practising online at your own pace can benefit a high-quality college degree.

Whether offered on campus or delivered online, each course offered must meet the same strict standards and strict academic standards. The only difference is the method of delivery of the course. Generally, students should access a computer system with high-speed Internet connections. They can also expect electronic academic support services such as registration, financial assistance, libraries, training and advice.

TOOLS FOR CONDUCTING EFFECTIVE ONLINE LEARNING

Remote Teaching Tools

It is essential to familiarize yourself with the tool you are using or how the platform works and choose the right tool.

Explore each tool and find ways to maximize its usefulness to create a better teaching experience. Your students depend on you to guide them on using the platform.

There is a range of remote teaching software available, and from them, we select the best ones and classify them based on their fundamental purpose.

Online Communication Tools

Effective communication is key to successful teaching and learning in physical or virtual classrooms. However, maintaining online communication with more than twenty students, not just one, is undoubtedly challenging.

Communication platforms help to overcome it; They enable communication with large groups, video conferencing, instant messaging, audio calls, virtual rooms and more with any device and from anywhere. Some tools in demand,

- Zoom
- MS Teams
- Webex

- Google Meet

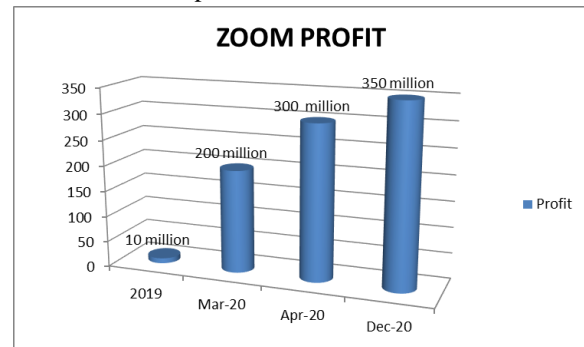
For healthy teaching practice with these tools,

- Create an agenda or plan for each online class and share it before the lesson
- Explain online etiquette students should follow during class and what is expected of them before or at the beginning lesson
- Mute all microphones except the speaker. It helps to eliminate distracting noises and retain students' attention. Those who need someone to speak can gesture to get their attention without interrupting the speaker.
- When delivering a presentation or sharing an image, document, or file, give students some time to take notes, view, or view them.

Zoom Video Communications, Inc.:

(Commonly shortened to Zoom and stylized as zoom) is an American communications technology company headquartered in San Jose, California. It provides videotelephony and online chat services through a cloud-based peer-to-peer software platform and is used for teleconferencing, telecommuting, distance education, and social relations

Eric Yuan, a former Cisco engineer and executive, founded Zoom in 2011 and launched its software in 2013. Zoom's aggressive revenue growth, along with the perceived ease of use and reliability of its software, led to a valuation of \$1 billion. A "unicorn" company first became profitable in 2019 and completed an IPO that year. The company joined the NASDAQ-100 stock index on April 30, 2020.



Online Whiteboards

Online whiteboards or digital whiteboards help students simulate the classroom whiteboard/blackboard experience. Many of these tools provide an infinite canvas with format libraries for creating a wide variety of diagrams, charts, graphs and other visualization purposes (i.e. posters, graphic organizers, etc.).

Work Planning Tools

Maintaining a work schedule is even more critical when working from home; A solid routine can help you make the most of your time, especially during stressful times. You can use time management and scheduling apps like Google Calendar and Calendly to sort:

- Create schedules to use in your online classes or for personal use
- Creating online class schedules and letting everyone know about dates and times.
- Schedule appointments with parents and students; Avoid booking the slot twice
- Inviting parents, students or coworkers to online events (i.e. webinars)
- Develop curricula and share them with students, administrators and colleagues.

Social Media Channels

Social media channels deliver countless stages for teachers, students and parents to stay linked. The platforms like Facebook, LinkedIn, WhatsApp, etc., permit you to make inimitable groups.

- Communicate and continue to exist after online class hours
- Share and store important information, presentations and resources related to the lessons
- Conduct Q&A sessions
- Encourage students to communicate with each other and keep in touch with each other while studying or doing homework.
- Organize live events like webinars (with Facebook or Instagram Live)

Document Management Tools

From exam papers to lesson plans, teachers need to maintain various documents regularly. Keeping track of all these documents properly, especially when

teaching remotely, requires a central place to store, manage and support them.

Tools like GSuite, MS office, OneDrive, Dropbox and Evernote make the process of managing your documents more accessible.

- Store all documents, files, etc. in the cloud, allowing you and your students to access them from anywhere with any device
- Manage documents well in relevant folders and subfolders, making them easy to retrieve
- Quickly share files and documents with anyone with a single link or file. You can also adjust the permissions settings, turning them into edit, view and activity mode in the GSuite app.
- Cooperate by students on excision and studying documents, add commentaries and proposals, and path changes with form history

Online Video Tools

- Record your online classes or lectures and share them with students
- Students can watch videos again in their absence or during test revisions. You can record a video before the lesson and share it with students while you are on vacation
- If you are teaching the same address to different classes, you can use a pre-recorded speech to avoid repetitive teaching
- Inspire students to study self-sufficiently with pre-recorded video programs. Students are more likely to learn better when they understand a concept on their own

Online Quiz Makers

Whether you are teaching online or teaching in a physical classroom, quizzes are a great way to check student performance. Online quiz makers make it easy,

- Create, format and share assessments online
- Create answer sheets that allow you to track and score each student's answers easily
- Many free and paid online quiz makers, starting with Google Forms.

Online Homework Platforms

Keeping track of students' homework is difficult while teaching from home. Assignment can come in many

forms; Essays, speeches, tests, etc. You can use a combination of the above platforms to submit their homework.

- Google Docs - for articles and other written assignments
- Skype, Zoom and other video conferencing apps - for verbal assignments
- Loom, YouTube, Prezi, Google Slides - for videos and presentations
- Google Classroom - Distribute, grade and send feedback on assignments

BENEFITS AND CHALLENGES

Online education offers great opportunities and significant challenges benefits for students and instructors. It provides time and space, cost-effectiveness and flexibility. Online practice allows the student to pursue an internationally recognized degree without attending classes on campus. Students who are unable to participate in traditional classroom settings prefer online education. It is convenient as it allows you to read anywhere with internet access. Online courses are available 24/7. Although online education works for everyone, some underdeveloped countries view online education as costly. Online teaching and learning (in a contemporary or asynchronous manner) apply to all disciplines such as engineering, computer science, medicine, nursing, business, music and the social sciences. Online teaching and learning are also common in business organizations. Problems faced by the online instructor include effectively delivering the course, responding to student emails, and getting accustomed to online tools and infrastructure. Critics question its value, impact and quality on online teaching and learning. Because online teaching and learning systems fail to communicate interactions between instructor and student, its educational impact is less than a traditional face-to-face lecture. Responding to student email messages promptly can be challenging because it requires a lot of instructor time. It takes much time to prepare and teach an online course. The challenge of online education largely depends on online tutors. Problems faced by online students require self-directed learning and self-discipline, which can affect

the success or failure of online learners. They may be tempted to postpone working on their assignments. The quality issue is raised in online learning, and it is as complex as the reality of online learning.

Data Analysis:

Variables Entered/Removed			
Model	Variables Entered	Variables Removed	Method
1	Zoom, Google Meet, M.S. Teams, Skype, Webex ^b		Enter

A. Dependent Variable: Online learning Acceptance

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.106 ^a	.011	.004	.15557

a. Predictors: (Constant), Zoom, Google Meet, M.S. Teams, Skype, Webex

ANOVA					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.198	5	.040	1.635	.148
Residual	17.354	717	.024		
Total	17.552	722			

a. Dependent Variable: Online learning acceptance
b. Predictors: (Constant), Zoom, Google Meet, M.S. Teams, Skype, Webex

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error				Beta	Lower Bound
1	(Constant)	.978	.045		21.869	.000	.890	1.066
	Google Meet	.002	.011	.007	.148	.882	-.020	.023
	Webex	-.025	.018	-.125	-1.378	.169	-.060	.011
	M.S. Teams	.027	.019	.126	1.405	.160	-.011	.064
	Skype	.021	.010	.101	2.114	.035	.002	.041
	Zoom	-.014	.009	-.066	-1.491	.136	-.033	.004

a. Dependent Variable: Online learning acceptance

Interpretation: The above regression shows the statistical significance in online education platforms and online learning adoption, and the $R = 0.198$, the asymptotic significance value 0.148, is higher than the significance level of 0.05. Therefore, the null hypothesis is accepted, and the alternative hypothesis rejected, which means no statistical significance in online education platforms and online learning adoption.

CONCLUSION

Online teaching and learning are relatively new. It has exploded as an option at colleges and universities in India and abroad in recent years. Most universities and colleges agree that online education is key to their long-term strategy. Online courses are best taught when engineering is complete to take advantage of the learning opportunities offered by online technologies. As the demand for online education increases from those who need work and lifelong learning, expectations regarding implementing the education and learning system differ. In our article, respondents agree that there is no statistical significance between online education platforms and e-learning adoption. There is still a gap in online education platforms and education adoption of selected online platforms such as Zoom, Webex, M.s meetings, Skype. This means that users of these platforms always want more features with convenient use of these platforms, and almost 85% of Indian students in tertiary institutions think they have only learned half of what they need to learn since online teaching started with the onset of the pandemic, while about 88% of university leaders believe it would take up to three years to close the learning gap.

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