An Analysis of Video Conferencing Tools for Learning Management Systems

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Abstract

The current study aims to identify recent trends in publicly available video conferencing software within the academic sector. The necessary data for the aforementioned study has been gathered online for analysis from the web sites of Google Meet, Cisco Webex Meetings, Zoom, Skype Meet, GoToMeeting, Bluejeans, and others. The study is essential for acquiring understanding regarding the extent and nature of each strength and weakness. Each option offers either a complimentary version or a trial period, allowing you to evaluate them prior to making a purchase commitment. The findings indicate that six video conferencing tools are accessible for academic advancement. The analysis has been conducted based on many characteristics, including software, pricing, and facilities.

Keywords: Video-conferencing, Google Meet, Cisco Webex Meetings, Zoom, Skype Meet, GoToMeeting, Bluejeans.

Introduction

Online education will be increasingly sustainable, and instructional activities will evolve to become more hybrid [1], it has only been in the past few months that it has become a significant tool for assisting students in maintaining their academic progress though technology and Internet [2] while they are at home in the midst of a global epidemic. Many of the video conferencing tools that are currently accessible are quite impressive, and many of them are conveniently integrated into the devices that adequate support provided by faculty and teaching assistants to students [3]. However, have you ever given any thought to which of the available video conferencing solutions is the best and which one truly fulfils your requirements such as online portal [4]

Literature Review:

Digital education has been considerably improved as a result of the incorporation of video conferencing technologies into Learning Management Systems (LMS) [5], which has led to the promotion of real-time interaction and collaborative educational institutions to operate remotely methods [6]. Platforms such as Zoom, Microsoft Teams, and Google Meet have become indispensable components of online learning environments, the sudden shift from the physical classroom to virtual space is creating a disruption among students [7]. E-learning platforms include synchronous communication features that encourage active participation and interaction among students [8]. Educational institutions significance of user-friendly

interfaces, dependable connectivity, and interactive features in determining the efficacy of these tools [9]. Some examples of technological functionalities include screen sharing, breakout rooms, and recording possibilities [10].

People had to deal with remoteness and isolation and with changes to virtual learning [11]. When compared to other evaluations, comparative evaluations highlight the need of having solutions that are scalable, secure, and customisable to unique Smart Learning educational environments [12].

In general, the research reveals that although video conferencing tools considerably enhance the capabilities of learning management systems (LMS), the successful deployment of these tools is contingent on the technological infrastructure, the expertise of the teacher, and the adaptability of the students of today have been surrounded by digital technology since their birth [13]. In the future, research should concentrate on improving inclusion and creating the best possible user experience across a variety of educational environments.

Google Meet: "Google Meet, which was earlier known as Hangouts Meet [14], is a video-communication tool that was developed by Google. The other app that serves as a substitute for Google Hangouts is Google Chat [15]. This app is one of the two that make up the replacement. Beginning in October 2019, Google intended to begin the process of discontinuing Google Hangouts.

Cisco Webex Meetings: According to Cisco Webex [16], Webex Meetings is the most widely used video conferencing service for businesses in the world. It provides highly secure integrated voice, video, and material sharing from the Cisco Webex cloud [17]. Meeting duties can be automated with the help of cognitive collaboration tools like Webex Assistant and People Insights. These capabilities bring artificial intelligence to the table. In order to begin a free trial of Webex Assistant, you should get in touch with your Cisco Collaboration partner or account manager.

Zoom: An innovative videoconferencing platform—has a number of unique features that enhance its potential appeal to qualitative and mixed-methods learner [18]. We assist you in articulating your thoughts, establishing connections with other people, and constructing a future that is constrained only by your own imagination. Our seamless communications platform is the only one that began with video as its core, and ever since then, we have been the industry leader in terms of innovation. Consequently, this is the reason why we are an option that is user-friendly, scalable, and safe for both major corporations and small organization, as well as for individuals [19]. Zoom was established in 2011, and its headquarters are located in San Jose, California. The company is widely listed on the NASDAQ (ZM).

Skype Meet: To effortlessly set up a collaboration space with the help of Meet Now in Skype, and you may invite not only your Skype connections but also friends or family members who are not using Skype [20]. The participants will subsequently be able to quickly join meetings regardless of whether or not they have an account.

GoToMeeting: LogMeIn is the company that developed and markets the web-hosted service known as GoToMeeting [21]. It is a software package that supports online meetings, desktop sharing, and video conferencing, and it gives the user the ability to meet with other people who use computers, customers, clients, or colleagues in real time through the use of the Internet.

Bluejeans: "BlueJeans offers a cloud-based video meeting service that is interoperable and connects a large number of people across a variety of devices, platforms, and conferencing programs [22]. An exclusive

"meeting room" in the BlueJeans cloud is available to each and every BlueJeans member, allowing them to organise and host conference meetings.

FEATURES WISE:

In the following section (Table:1), we will discuss the fundamental requirements for learning management features that are required for academic advancement from a variety of video-communication software and mobile applications. Chat is available for all six software and apps that are offered, and it allows users to communicate with academicians in order to better comprehend them. Additionally, participants have access to communication in both directions, including multi-way and two-way communication. It is possible to encrypt calls between all users using any of the tools and applications. With the exception of Cisco Webex Meetings, Zoom, and Skype Meet, a few of them are unable to obtain information from the website on whether or not a noise-cancelling audio filter is accessible [23]. In Cisco Webex Meetings, GoToMeeting, and Bluejeans, the low-light setting for video is not available. Every one of the six software and apps offers the ability to hold meetings using a web browser or through apps for Android or iOS, screen-sharing for the purpose of presenting documents, and the ability for hosts to refuse access and remove individuals while they are on a call.

Table:1 Facilities of Video Conferencing Tools

Item	Google Meet	Cisco Webex Meetings	Zoom	Skype Meet	GoToMeeting	Bluejeans
Accompanying chat	Available	Available	Available	Available	Available	Available
Two-way and multi-way audio and video calls	Available	Available	Available	Available	Available	Available
Call encryption between all users	Available	Available	Available	Available	Available	Available
Noise canceling audio filter	Available	Information Not Available	Information Not Available	Information Not Available	Available	Available
Low-light mode for video	Available	Information Not Available	Available	Available	Information Not Available	Information Not Available
meetings through a web	Available	Available	Available	Available	Available	Available

browser or through Android or iOS apps						
Screen-sharing to present documents	Available	Available	Available	Available	Available	Available
Hosts being able to deny entry and remove users during a call	Available	Available	Available	Available	Available	Available

PURPOSE OF MEETING:

Table 2 underscores the adaptability of prominent video conferencing platforms Google Meet, Cisco Webex Meetings, Zoom, Skype Meet, GoToMeeting, and BlueJeans. All platforms consistently accommodate various functions, including conferences, instructional sessions, project partnerships, information dissemination, and management meetings [24]. The uniform availability signifies a competitive market in which each tool endeavours to fulfil varied user requirements, rendering them appropriate for both professional and academic settings. The uniform functionality across platforms indicates that consumers can select based on additional considerations such as interface, integration, and pricing, rather than fundamental characteristics [25].

Table:2 Purpose of Video Conferencing Tools

Item	Google Meet	Cisco Webex Meetings	Zoom	Skype Meet	GoToMeeting	Bluejeans
Conference/Seminar	Available	Available	Available	Available	Available	Available
Education/ Course	Available	Available	Available	Available	Available	Available
Project work	Available	Available	Available	Available	Available	Available
Information	Available	Available	Available	Available	Available	Available
Management Meeting	Available	Available	Available	Available	Available	Available
Other	Available	Available	Available	Available	Available	Available

PAID FACILITY OF THIS SOFTWARE:

In this area (Table:3), every piece of software offers a paid facility, which is the highest level of service that can be provided to users. In this instance, we can observe that GoToMeeting Enterprise (3000) provides the highest possible level of user connectivity. These two services, GoToMeeting and Bluejeans, offer an unlimited amount of meeting time [26]. With the exception of Skype Meet, all of the major software programs

offer an unlimited number of meetings. When you purchase the Enterprise edition of Zoom Unlimited, you will have access to live streaming in your domain [27]. With the exception of Skype, customer support works with major software and applications. Recoding capability is provided by each of the six software and app packages.

Table:3 Paid Facilities of Video Conferencing Tools

Paid Item	Google Meet	Cisco Webex Meetings	Zoom	Skype Meet	GoToMeeting	Bluejeans
User Connected	150(Essential) 250(Enterprise)	200(Busness) 1000000 (Enterprise)	300(Business) 500 (Enterprise)	Information Not Available	Professional (150) Business (250) Enterprise (3000)	Standard(100) Pro(150) Enterprise(200)
Meeting Time	300 hour	24 hours	30 hours	Information Not Available	Unlimited	Unlimited
Number of meeting	Unlimited	Unlimited	Unlimited	Information Not Available	Unlimited	Unlimited
Live streaming in domain	Available	Information Not Available	1 GB(Business) Unlemited (Enterprise)	Information Not Available	Available	Available
Intelligent noise cancellation	Available	Information Not Available	Information Not Available	Information Not Available	Available	Available
Customer support	24/7	24/7	24/7	Information Not Available	24/7	24/7

Alert centre	Available	Available	Available	Information Not Available	Available	Available
Vault	Available Unlimited (Enterprise)	5GB 10GB Unlimited (Enterprise)	1 GB Unlimited	Information Not Available	Business Enterprise Unlimited	5hrs,25hrs, Unlimited
Security dashboards	Available	Information Not Available	Information Not Available	Information Not Available	Available	Available
Security health	Available	Information Not Available	Information Not Available	Information Not Available	Available	Available
Investigation tool	Available	Information Not Available	Information Not Available	Information Not Available	Available	Available
Data loss preventation	Available	Information Not Available	Information Not Available	Information Not Available	Available	Available
Endpoint management	Available	Available	Available	Information Not Available	Available	Available
Data regions	Available	Information Not Available	Information Not Available	Information Not Available	Available	Available
Access transparency	Available	Information Not Available	Information Not Available	Information Not Available	Available	Available
Recording	Available	Available	Available	Available	Available	Available

FREE FACILITY OF THIS SOFTWARE

In this segment Table:4, Google Meet, Cisco Webex Meetings, Zoom, and Skype Meet are all free of charge for linked 100 users. On the other hand, GoToMeeting and Bluejeans offer users access to their trial versions for a limited period of time [28]. It is just Google Meet that offers security against abuse. Google Meet, Cisco Webex Meeting, and Zoom Skype Meet all offer participants the ability to hold an unlimited number of meetings. Both Google Meet and Skype Meet have a Live Captioning facility, which is perhaps one of the most crucial features that these two services offer [29].

Table:4 Free Facilities of Video Conferencing Tools

Free Item	Google Meet	Cisco Webex Meetings	Zoom	Skype Meet	GoToMeeting	Bluejeans
User Connected	100	100	100	100	Information Not Available	Information Not Available
Meeting Time	1 hour	50 Min	40 Min	Information Not Available	Information Not Available	Information Not Available
Abuse Protection	Anti-Hijacking	Information Not Available	Information Not Available	Information Not Available	Information Not Available	Information Not Available
Number of meeting	Unlimited	Unlimited	Unlimited	Unlimited	Information Not Available	Information Not Available
Live Captioning	Available	Information Not Available	Information Not Available	Available	Information Not Available	Information Not Available
Compatible across device	Any	Information Not Available	Any	Any	Information Not Available	Information Not Available
Video and audio preview screen	Available	Information Not Available	Information Not Available	Available	Information Not Available	Information Not Available
Control for meeting hosts	Available	Available	Available	Available	Information Not Available	Information Not Available
Screen sharing	Available	Available	Available	Available	Information Not Available	Information

with participants					Not Available
Messaging with participants	Available	Information Not Available	Available	Available	Information Not Available	Information Not Available
Join from browser	Available	Available	Available	Available	Information Not Available	Information Not Available
Invite external participants	Available	Available	Available	Available	Information Not Available	Information Not Available
Mobile apps	Available	Available	Available	Available	Information Not Available	Information Not Available
Encryption in transit	Available	Available	Available	Available	Information Not Available	Information Not Available
Advanced protection enrolment	Available	Information Not Available	Information Not Available	Information Not Available	Information Not Available	Information Not Available
Self-help online and community forums	Available	Available	Ticket Only	Available	Information Not Available	Information Not Available

Conclusion:

In today's world, the education industry has been profoundly influenced by digital change. The most prestigious educational institutions have begun the process of developing applications and software, as well as launching channels on YouTube, in order to provide their students with access to online programs. Over the course of this lockdown period, there has been an opportunity and the correct time to develop the content of e-learning in order to maximise its potential for both students and teachers. Every one of the six video conferencing tools meets the fundamental requirements of the learner.

In especially as a response to the issues that were brought by the COVID-19 epidemic, video conferencing tools have arisen as components that are absolutely necessary for current learning management systems. Real-time engagement, cooperation, and accessibility from remote locations are all made possible by these tools, which have made it possible for educators and students to retain continuity in their educational experiences. There are a multitude of interactive capabilities available on platforms such as Zoom, Google Meet, and Microsoft Teams; however, the true success of these platforms resides in their seamless interaction with learning management systems (LMS) platforms such as Moodle and Canvas. However, complications like as digital exhaustion, limitations in connectivity, and concerns around privacy underline the necessity of

implementing the solution with careful consideration. The needs of the users, the technological infrastructure, and the objectives of the institution all play a role in determining which video conferencing solution is the most appropriate. It is vital to conduct additional research and development in order to improve the user experience, guarantee equity, and encourage meaningful interaction as the educational system continues to expand in a hybrid or entirely online format. In the end, the tools that are used for video conferencing will continue to play an important role in the future of digital education.

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