Research paper

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COVID-19 Lockdown: Turning Isolated Educational Disguise Into Online Blessing

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ABSTRACT

"Blessing in Disguise", an old saying has been proved true during the current covid-19 pandemic lockdown. It has been able to get best out of human intelligentsia, who have put in their best efforts to keep humanity going in such tough times. Educational sector being no exception has been tremendously benefitted by the technological advances that have been put to their best use, perhaps for the first time since their introduction into the technological world. People in academics seemed to be technophobic and were therefore unable to use technology to their advantage. As soon as covid-19 lockdown was announced worldwide, academics were forced to look for alternatives to traditional teaching/learning, and fortunately technology provided the solution. Thus, as we see, there was a surge in the use of cloud based collaborative video conferencing tools. As the race started, it even became difficult for teachers and students to choose a particular tool as there were many of them available in the market. Every tool available has its own strengths and weaknesses. In this study an attempt has been made to see the usage growth of these tools and also provide a comparative statistics cum study of their pros & cons.

Keywords: Covid-19, Video conferencing, Zoom, Google Meet, Microsoft Teams, Cisco Webex

INTRODUCTION:

The COVID-19 has enabled human resource in and out of businesses to get creative when it comes to how communication occurs with colleagues, customers and partners. ICT age that we live in provides us innumerable ways to stay connected with all these stakeholders through A/V conferencing [5]. With so many choices for A/V meeting tools available, it's important to look



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into the differences and similarities between them, their pros and cons and their popularity among the people especially academicians. In this paper, an attempt has been made to show how covid-19 lockdown proved to be a blessing in disguise in terms of the usage of online teaching learning A/V tools. For this purpose a varied set of video conferencing tools was used and often it was difficult for teachers/learners to decide which tool to use. A further attempt has been made here to make a comparative study between some most popular Cloud-based online video conferencing tools: Zoom, Microsoft Teams and Google Meet. We will look at their functionalities and limitations to see which one suit video conferencing needs of the teaching/learning community or businesses [14].

While choosing a video conferencing tool, the user should first try to find answers to the following questions, so that a better choice can be made select the most appropriate tool that will suit the needs of the user and his/her organization [13].

- ➤ Will the tool be used for one-to-one online meeting?
- > Will it be used to offer virtual office hours?
- ➤ Will it be used to run a training session for a group or a class?
- ➤ Will it be used to any participants or assign them to specific rooms?
- Will it be used to record a meeting in the cloud for later watching by attendees?
- ➤ Will it be used to hold a meeting where confidential data will be shared?
- ➤ Will it be used to organize a meeting with external participants?
- Will it be used to live stream a video conference?
- Will it be used to organize a meeting with more than 100 participants?

Answers to these questions will decide which tool a user or company/institution needs to run its video conferencing affairs smoothly. The tools chosen here for this study have all the functionalities a user/business need for communicating with coworkers/employees through video conferencing, but are still different from each other.

Usage Statistics & Growth:

Video conferencing software's have seen exponential demand as a result of the COVID-19 pandemic. In March alone, video conferencing applications recorded 62 million downloads. The growth is attributed to increasing adoption of platforms like Google Meet, Microsoft Teams,



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Webex and Zoom as businesses switched to "Work from Home" mode to limit the spread of corona virus. Globally, Zoom was found to be the most downloaded video conferencing application in February and March and it continues to be the highest downloading application across the World [8][9]. Videoconferencing software company Zoom has been one of the biggest winners from the Corona pandemic crisis. Its stocks are up by about 67% so far this year. Google Meet has been adding 3 million users daily since lockdown was announced [12]. Google Meet's daily usage has gone up 30 times since January this year and is hosting 3 billion minutes of video meetings [7].

Microsoft is not lagging, it too has seen a 500% increase in Teams meetings, calls and conferences in China alone since January 31. WebEx, one of the oldest video-conferencing apps, recently made its services free of cost, helping people work from home amidst covid-19 pandemic and in just one day WebEx saw 240,000 new subscriptions. Webex reported 5.5 billion meeting minutes in the first week of March, while having around 3.2 million meetings in a day, which is unbelievable. Webex registered a record 324 million attendees by the end of March and about 73 million meetings took place in the same period. Also people spent around 5.5 billion meeting minutes on Webex in the first eleven business days of March.

Table-1 lists the download statistics of these tools before the onset of covid-19 and the current statistics from Google play store [11].

S. No	Name of the App/Tool	Dec 2019 Downloads	June 2020 Downloads
01.	Zoom	13M+	100M+
02.	Google Meet	2M+	50M+
03.	Microsoft Teams	20M+	50M+
04.	Cisco Webex	n.a	10M+

Table-1 Play Store downloads statistics*

Technical Comparison:

These tools differ on many varied characteristics ranging from capabilities to collaborate and pricing plans. Let's take a deeper look into the specific functionalities of each of these applications.

In response to the covid-19 crisis [10], Google temporarily opened up Enterprise functionalities of Google Meet to all G Suite customers. Google Meet has been specifically designed with business needs in mind. It has a simple user friendly interface that can manage up to 250 people



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in an online video conferencing meeting, depending on the G Suite subscription type obtained. The user friendly interface, fully integrated with other G Suite applications like Google Calendar allows people to join in and logout of meetings quickly, just by clicking a link [6]. Currently being one of the frequently and most widely used video conferencing, Zoom is easy to use and has good audio and video quality. Zoom although having many useful meeting functionalities, is facing some security issues as its usage increased in the past few weeks, resulting in invention of a new word, "Zoom-bombing", referring to the security risk of hackers intruding into any Zoom meeting. This issue is certainly something important to take into account while deciding to buy a reliable and viable video conferencing tool.

Microsoft Teams, part of Microsoft Office 365 is a video conference solution with several service plans, both free and paid. Both the plans allow users to host meetings with up to 250 attendees. Cisco webex, a competing app in the market holds ground and also provides features comparable with those of Zoom, Google Meet and MS Teams.

Table-2 gives a summarized view of all the video conferencing apps discussed in the previous section. A holistic view of almost all the required features in a videoconferencing tool needed for business or academic communications has been presented.

Criteria	Zoom [1]	Google Meet [3]	MS Teams [4]	Cisco Webex [2]
Participants	Basic: 100	Basic 100;	Maximum for	Video endpoints:
	Large meeting	Business 150;	all plans: 250	200; Users in a
	add ons: 500	Enterprise 250		single meeting:
				500
Waiting room	Available	Available	Available	Available
Time limit	Basic:40 minutes	No limit	No limit	No limit
	Pro & up: No			
	limit			
File sharing	Available	Available	Available	Available
Grid view	Gallery view	Grid with the	No Grid view	Grid view
	with thumbnail	main speaker		
		highlighted		
Dial-ins	Calling using a	Dial into video	Audio	Video call back
	phone line is	meeting from a	conferencing	from desktop
	expensive but	phone	feature available	client
	easy			
Collaboration	Cloud platform	Integration with	Cloud based	Cloud based
	for A/V	other Google	collaboration	recording of



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	conferencing,	apps, Bundled with a lot of	software, fully	video, chat and
	collaboration,		integrated with	polling
	chat and	other services.	Office 365.	
- C	webinars	0.1	D. L. L.	T 1
Screen	Host can allow	Only one person	Desktop sharing	Integrated audio
sharing	multiple people	can share screen	screen sharing	and presentation
	to share screen at		including an app	sharing
	the same time		or a file.	
Video	Record meetings	Capture audio,	Record meetings	Cloud based or
Recording/	on local	video, chat and	and group calls.	Network based
sharing	computer	screen sharing	The recording is	recording (NBR)
		activity, saved to	saved to MS	
		Google Drive	Stream.	
Voice calling	Available	Available	Available	Available
Security	End-to-end	Encryption "in	Encryption "in	End-to-end
	encryption	transit", between	transit	encryption
		sender and		
		Google server		
Business Plan	Limited to	More diversified	More diversified	More diversified
	virtual calling			
Virtual	Available	Available	Available	Available
Background				
Add on tools	Includes an	Includes	private channels,	Works well with
	annotation tool,	Intelligent	email from	Github, Office
	use GIFs and	Muting, use of	Outlook, polls,	365, Google
	conduct polls.	emojis and GIFs	add SharePoint	Drive etc
	_	-	enterprise search	
Captions	Manual caption,	Speech-to-text	Live captions	Live captions can
_	host can type	technology that	can be enabled	be enabled
	while talking	shows captions		
		live in meetings		
Integrations	Facebook, Skype	Skype and other	Integrates with	Salesforce,
	Workplace,	video meeting	innumerable	GitHub, Google
	Salesforce,	systems	apps	Drive etc
	Outlook, Google	•		
	Drive &			
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	Calendar			
Application	Standalone	Part of G suite	Part of Office	Standalone
Type			365	
Pricing plans	Basic plan is free	Basic plan starts	There is a free	Basic free plan;
	for 100	at \$6/user/ month	version, paid	small and mid-
	participants;	for up to 100	versions cost	size teams are
	Pro: 100 to 300	people.	\$5.00 or \$12.50	cheaper at
	participants	Business plan	per month per	\$13.50/month/
	costing \$14.99/	costs \$12/user/	user.	host and
	month. Business	month with 150		\$17.95/month/
	plan costs	people and \$25/		host respectively.
	\$19.99/ month	user/month for		
	with 300	Enterprise		
	participants	subscription with		
	Enterprise plan			
	for \$19.99/			
	month with a	cloud storage.		
	minimum of 50			
	hosts for 500			
	participants and			
	unlimited Cloud			
	Storage.			
Usage	7 million GB/		Hosting 4.1	200 million video
	<u>day.</u> Or 210,000		billion meeting	conferences a
	TB/month		minutes/ day	month
Growth	December 2019:	C	May 2020: 44	Had over 240,000
	10 million active	users daily, daily	million users	sign-ups in just 24
	users,	usage spiked by	June: 75 million	hours
	March 2020:		· ·	
	200 million users	January, hosting	over 200 million	
	June 2020: 300		daily	
	million users	of video	participants	
		meetings		

Table-2 Comparative summarization of important features of select videoconferencing apps



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CONCLUSION:

Almost every video conferencing platform in the market has seen an exponential spike in the number of users, and the load that it is dealing with since lockdown was first announced. After doing an in depth analysis of the features and usage characteristics of top and leading videoconferencing apps, it was found that they approximately have the same features and tools available to make video conferencing work for any business. These collaborative and video conferencing tools are very convenient and easy to use for those working from home or in the office. It can further be noted that there are pros and cons with each app.

Google Meet and Microsoft Teams are really good for those who actually want to collaborate in real-time, because they are fully integrated with G Suite and Office 365 respectively. However, it is crystal clear that there's no obvious winner in the competition for the ideal video conferencing tool. The final decision largely depends on business needs and requirements of an individual or organization.

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 $\underline{+Zoom+the+Most+Downloaded+Video+Conferencing+App+Globally+in+February+and+March\&utm_exec=joca2}$

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