

A Comparative Study of Online E-Learning Tools during Covid-19¹Dr. Anil Kumar, Dept. of CE PIET Jaipur, India²Manish Bharadwaj, Dept. of CE PIET Jaipur, India³Vikram Khandelwal, Dept. of CE PIET Jaipur, India⁴Manish Mathuria, Dept. of CE PIET Jaipur, India**Abstract**

In the current scenario of pandemic, every learner is worried about his education, learning and degree courses. For this purpose, various online tools are available to reach the goal. But there are some significant challenges in order to meet all the requirements of the user. This research paper presents the comparative analysis of user experiences of the available online tools. The results are shown in graphs and finally best tool is recommended with merits and demerits.

Keyword: Online Meeting Tool, Online Classroom, E-learning Tool, Webinar Software.

Introduction

Technology can help make society more resilient in the face of pandemic and other threats. During the COVID-19 pandemic, technologies are playing a crucial role in keeping our society functional in a time of lockdowns and quarantines. And these technologies may have a long-lasting impact beyond COVID-19. Now a day's technology plays an important role in our daily life, we used many technical tool to solve our problems. The COVID-19 pandemic has accelerated 10 key technology trends, including education, digital payments, telehealth and robotics. Many companies have asked employees to work from home. Remote work is enabled by technologies including virtual private networks (VPNs), voice over internet protocols (VoIPs), virtual meetings, and cloud technology and work collaboration tools.

Online meetings or virtual conferencing tools are used in the hosting of a meeting in a virtual environment. These tools offer docs, spreadsheet, presentation, and drawing capabilities. Files can be uploaded or downloaded and shared by permission or to anyone with a link, for free. Through which we can host a virtual reality meeting (not face-to-face) with people in the same city, different cities and countries across the world. Reduced overall cost is the major factor in adopting e-tools. It is often seen as a cost saving, compared to flying/transporting employees to meet one another for a few hours.

Online Tools

First, the reason for growth, now a day's of these tools is the highly uses of company meeting, Interviews, Live Product demonstration, online teaching, and video calling. The flexibility and availability of learning can ensure further professional development beyond the classroom. K. Werbach [2] pointed out that with the limited capacity of classrooms and limited budgets for building new facilities, e-learning was an ideal alternative to traditional teaching methods. D. Benta explained, from the perspective of students [1], how e-learning helped them access the course materials as well as motivated them to collaborate with their colleagues in doing homework. Despite the above advantages, most Chinese universities continue to employ only traditional teaching methods with no other additional support. S.C. Wang [3].

considered the online courses as simply a copy of the traditional classroom teaching, as the teaching content was basically the same. L.Y. Zhu [4] proposed that teachers had less supervision of the learning process. J. Wei [5] and J. Guo [6] hold that Chinese teachers were more likely to have face-to-face communication with students, and students might better maintain self-discipline in classrooms compared with online learning.

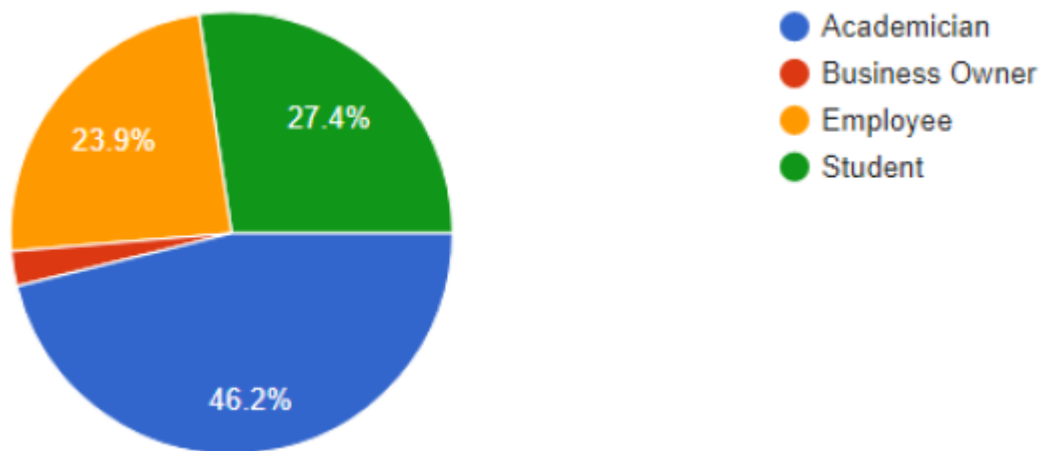


Fig. 1: Users of Online Meeting Tools during Covid-19

Analytic Model of Survey

The survey is based on some selected questions for users (Academician, Business Owner, Employee, Student) of Online Meeting Tools. The select criteria of analysis based on user experiences are as follows:

Table 1: Attributes For User Experience

Sr.	Attributes	Sr.	Attributes
1.	Good GUI	7.	Fast in Processing
2.	More Option to Control	8.	Security
3.	Limited Participants	9.	Connection Break
4.	Limited Meeting Duration	10.	Recording Available
5.	Reconnection Possible	11.	Share Screen Available
6.	Audio Quality Problem	12.	Video Quality Problem

The table above presents the common attributes of experience by user of online learning tools.

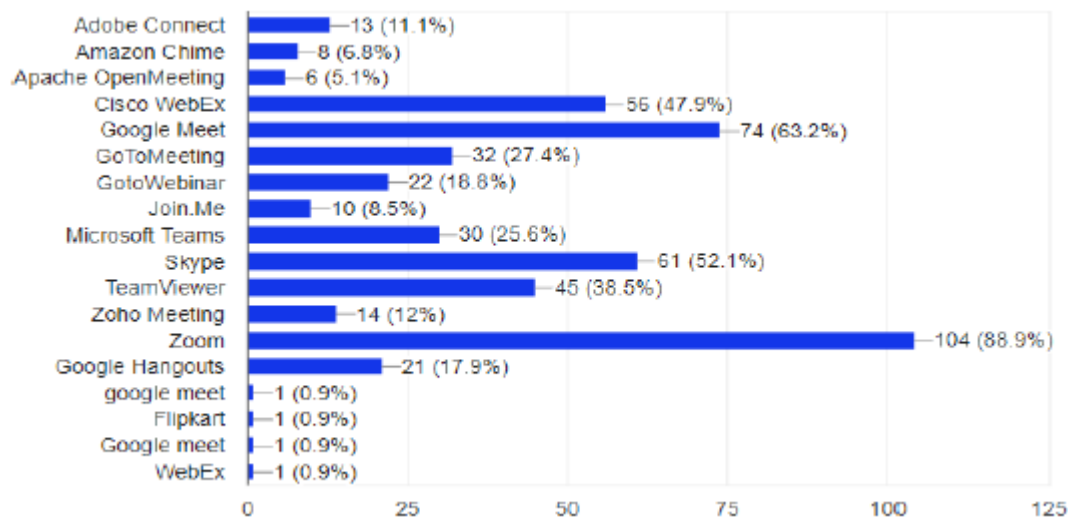


Fig. 2: Obtained Responses for User's Priority

Figure above presenting the user's feedback on tools experienced. Here, we can see that zoom is on top i.e. 104 participants out of 116 have used zoom. It means zoom is popular among Academicians in this pandemic of Covid-19 (from the figure 1 the maximum number of user are academicians). Whereas, Google Meet, Cisco Webx, Skype, Teamviewer have good participation.

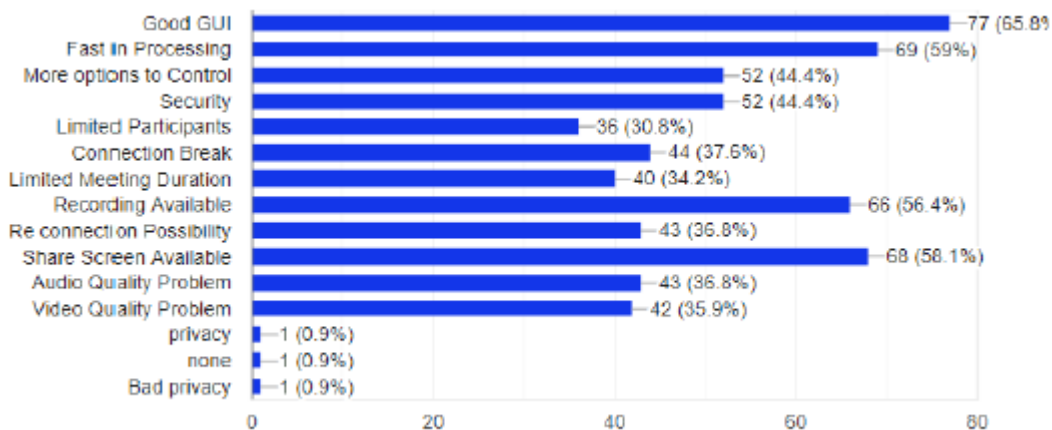


Fig. 3: Obtained Responses for User's Experience and Satisfaction

The Figure 3, above representing the users experience over the tool they have used. Simply from the give graph, 77 users are satisfy with Good GUI. Whereas only 1 user is satisfy with privacy.

Table 2: Attributes Used For Ranking

Sr.	Attributes	Sr.	Attributes
1.	Good Audio & Video	8.	Recording of Meeting
2.	Screen Sharing	9.	Multi Device Support
3.	Live Chat	10.	Low Cost
4.	File Sharing	11.	Whiteboards
5.	Confidential Attendance	12.	Annotation facility
6.	Scheduling of Meeting	13.	Only Audio Support
7.	Number of Users	14.	Limited Participant's access right

Ranking Attributes are used to compare user's experience on their interest tools. We have given 1,2,3, and 4 rank to calculate the score. The rank features are as shown in table 2.

Table 3: Score Calculation

Sr.	Tool Name	Resp.	Score
1.	Google Meet and Zoom	48	1980
2.	Cisco Webx, Google Meet and Zoom	44	1845
3.	Microsoft Team, Skype, TeamViewer, GotoMeeting, Adobe Connect, Amazon Chime, Zoho Meeting, and Apache OpenM	24	923

Based on user's feedback on attributes in survey for racking, we have calculated Score. From the table III above, we can see that score of combination of Google Meet and Zoom is too high comparatively other groups.

Conclusion

This research is mainly focused on the finding best tools based on user's experience in this pandemic of covid-19. This research is not targeted to any individual tool (for marketing reputation). We are academician and wants to improve quality of online learning. The analysis is totally based on online survey through Google Form. We have selected common features and Attributes for research on tools. From the obtained feedback from user's among all the participants, it is found that users are more comfortable using combination of Google Meet and Zoom. Whereas other tools are at different place (may be not experienced by participants).

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