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A Study on Students Perception Regarding the Parameter Wise Competencies of Different Online Teaching Applications with Special Reference to West Bengal

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ABSTRACT

The advent of online medium in field of commercial transaction was a successful one but such online medium also proved to be the ultimate remedy in other sectors in the new normal era. The emergence of a deadly virus that resulted in a pandemic situation suggested individuals to maintain physical distancing that indirectly marked the closure of offices, educational institutions etc.; which thereby is a clear indication to work or get education from home itself. This new normal brought into picture several online applications that could be beneficial for education purpose. The researchers' study here is based on such three online applications namely ZOOM, Google Classroom and CISCO Webex; that is being widely used by academicians to provide education to the students that was left untouched due to the sudden lockdown situation. The study mainly focuses on the comparative differences between these three above said applications in terms of cost (data usage), user friendliness, variant features. The researchers have used the descriptive statistics; applicable for ordinal data in the analysis of data. Based on the analysis the researchers put forwarded the discussions, conclusions and recommendations. The result shows mixed preferences for different modes under various parameters.

KEYWORDS: *CISCO Webex, Google Classroom, New normal, Pandemic, Physical distancing & ZOOM.*

JEL Classifications: *C83, C87, I20.*

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Background:

The year 2020 marked the biggest fight that the entire world started against a deadly virus named COVID-19.The situation turned soon into a pandemic situation that forced governments all over the world to declare a complete lockdown starting from Work sectors to Education sectors. The situation demanded physical distancing that locked people around the world behind closed doors. The new normal suggested work from home by using several online applications. Though the solution resulted in smooth running of work in different service based sectors; but it was quiet challenging for many as the use of such application required proper facilities as well as technical knowledge. The same situation aroused for students who got totally detached from their education as all educational institutions were closed from the very beginning when the Indian government started to take precautionary measures in controlling this pandemic. The only solution left for syllabus completion was online teaching. Though the solution seemed easy to say but practically implementing became a tougher one, as neither teachers nor students were used to such online teaching methods. Moreover such teaching demanded proper facilities like Android Sets, laptops, PC etc.; as well as proper technical sense to use those in an efficient manner. Along with this, cost in terms of data usage also mattered to many as students specially depends upon parents for living. So, in such a pandemic situation where survival was at stake education through online medium was next to impossible for many.

Various applications came into focus such as ZOOM, YouTube, Google Classroom, CISCO Webex, Jio meet etc. Those students who could avail such online medium of teaching were benefitted but for many it was impossible to afford such method of teaching. The students availing such online teaching started learning about the pros and cons of such applications. The individual teaching platforms has their own advantages and disadvantages. Hence it is very much thought provoking now for academic researchers to understand the comparative parameter wise superiority and inferiority of various online teaching platforms. These will help them in choosing and recommending the platforms based on students' interests. This is a very basic responsibility of an academician in this new normal for successfully reaching to maximum number of students.

Literature Review:

Online teaching gain massive importance and become a focal point of discussion in this new normal, in the whole world and India is not an exception. The use of various online teaching medium influenced the lives of students in different

ways, which marked effective for few and a total mess for the rest. But this medium gave the students a new technological world to explore that may help them in future in different ways.

Johnson, S. D. (2003). The study is based on conceptual framework that can help in development of online courses and mainly emphasizes on use of framework consisting of Individual difference, Motivation, Information overload, Contextual learning, Social learning, Active learning, Reflective learning to create Instructional Strategies for online courses. Further the study concluded the need of implementation of more inclusive and fully developed framework.

Phillips, J. M. (2005). This study is based on the required strategies for achieving active learning in the field of continuing online education and the study emphasize on the need of creative and active learning strategies to be rooted in the educational theory and to implement such strategies to ensure a lifelong learning.

Dykman, C. A. (2008). This study focuses on the difference between online teaching and conventional teaching by comparing several dimensions. The study concludes that online teaching is a complex process to adapt thereby throwing a challenge towards online educators to make the adaption of this online teaching more effective so that in the longer run this style of teaching becomes easier, more comfortable and rewarding.

Li, Z. (2012), this study is based on Constructive theory that aims to explore the use of the online multimedia courseware to college English teaching. The study provides mixed consequences; i.e. on one hand when majority of students have considered the multimedia usage as an effective one in classroom teaching, whereas on the other hand such teaching requires internet facilities that contain several contents that are not at all desirable for students. So, the study emphasizes on a proper guidance on effective use of internet to achieve the desired benefits of multimedia teaching.

Mohd. Shaharanee, I. N. (2016). This study focuses on the effectiveness of Google classroom as a tool for teaching and learning process and the study concluded an overall satisfaction from students' side regarding the use of such tool for active learning and also put emphasis on the need of further survey to contribute the maximum towards students' satisfaction regarding this method of learning.

Based on the above review of literature researchers is of the opinion that several studies have been conducted taking into consideration the online teaching platforms, the strategies to gain maximum benefit in online teaching, the effective use of such online teaching mediums and also on advantages of Google classroom as a tool of teaching and learning. But no study has been conducted yet on the comparative advantages and disadvantages of various online learning applications that are used in providing online teaching in West Bengal. So researchers are keen in finding out the comparative advantages and disadvantages of three mostly used online teaching applications in West Bengal for disseminating knowledge among students, i.e. ZOOM, Google Classroom, CISCO Webex. The concerned topic has huge socio-economic significance in the current scenario. The students' accessibility of teachings in a feasible and efficient manner is the most vital concern for the educators at present. The concerned study is aiming at solving this problem as much as possible.

Research Objectives:

Based on the above research gap the following objectives have been determined and are as follows-

1. To know whether perception of students regarding the cost factor associated with different online learning modes in terms of data usage varies.
2. To know whether perception of students regarding the user friendliness associated with different online learning modes varies.
3. To know whether perception of students regarding the various features associated with different online learning modes varies.

Research Methodology:

The study is based on data collected through random primary survey among the students of West Bengal to understand whether different online teaching applications enjoy any comparative advantage or disadvantage regarding any of their parameters, impacting efficient accessibility of knowledge by the students in this new normal. Total 108 samples have been collected from the students studying in class 10 to doing Post Graduation. The research is primarily based on three sets of questions, each set containing three questions.

Researchers raised questions to the respondents to know their perception regarding the degree of excellency/efficiency of the following three parameters; of the three most widely used online teaching platforms of the West Bengal:

1. Perception regarding cost effectiveness of an online teaching platform.
2. Perception regarding user friendliness of an online teaching platform.
3. Perception regarding features availability of an online teaching platform.

The cost effectiveness has been defined in terms of data (Mega Byte) usage. The user friendliness has been defined in terms of easiness in installing the platform in different gadgets and student intake capacity of the platform. Features availability is being defined in terms of dynamicity of features associated with an online teaching mode that is available to the participants of the platform during the classes.

All the questions that have been used in the analysis were in 5 point ordinal scale, ranging from strongly agree with the efficiency of the parameter to strongly disagree with the efficiency of the parameter. For analysis purpose through SPSS software the data has been coded by numerical numbers ranging from 1 to 5. Where 1 signify strongly disagree and 5 signify strongly agree. Based on these above procedures; descriptive statistics associated with each questions has been provided, along with graphical representation of the results. The results of both the presentations are being logically interpreted.

The researchers logically discussed the interpretations to identify the comparative advantages and disadvantages. The researchers also put forwarded several recommendations for making online learning for students more feasible and efficient. Finally, the researchers outlined the limitations of the study and put forwarded the future research scope in this area.

Data Presentation and Analysis:

Based on the above research methodology following procedures are being complied by the researchers in fulfilling of research objectives

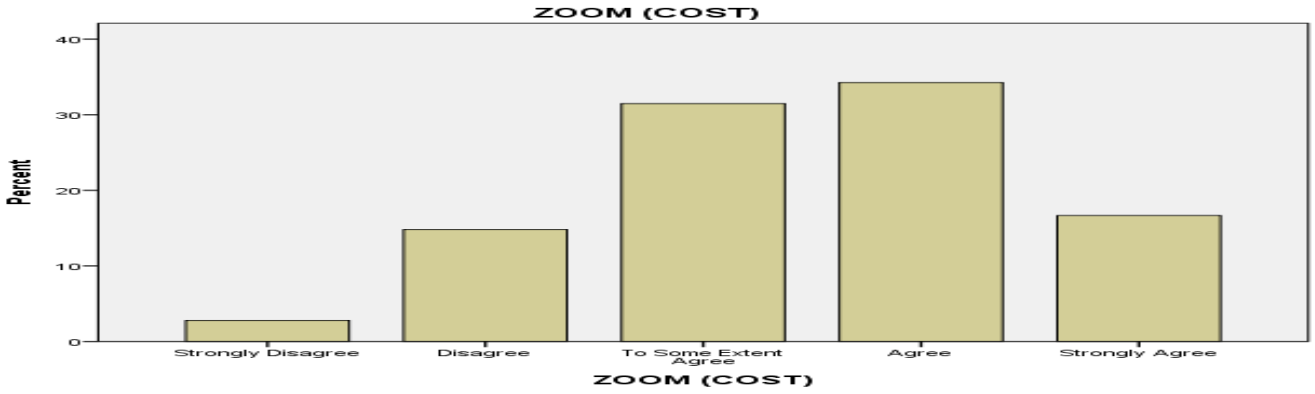
Cost Effectiveness:

Table 1: The perception regarding cost effectiveness of ZOOM, in terms of data usage

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	2.8	2.8	2.8
	Disagree	16	14.8	14.8	17.6
	To Some Extent Agree	34	31.5	31.5	49.1
	Agree	37	34.3	34.3	83.3
	Strongly Agree	18	16.7	16.7	100.0
	Total	108	100.0	100.0	

Source: Computed through SPSS.

Figure 1: The perception regarding cost effectiveness of ZOOM, in terms of data usage



Source: Computed through SPSS.

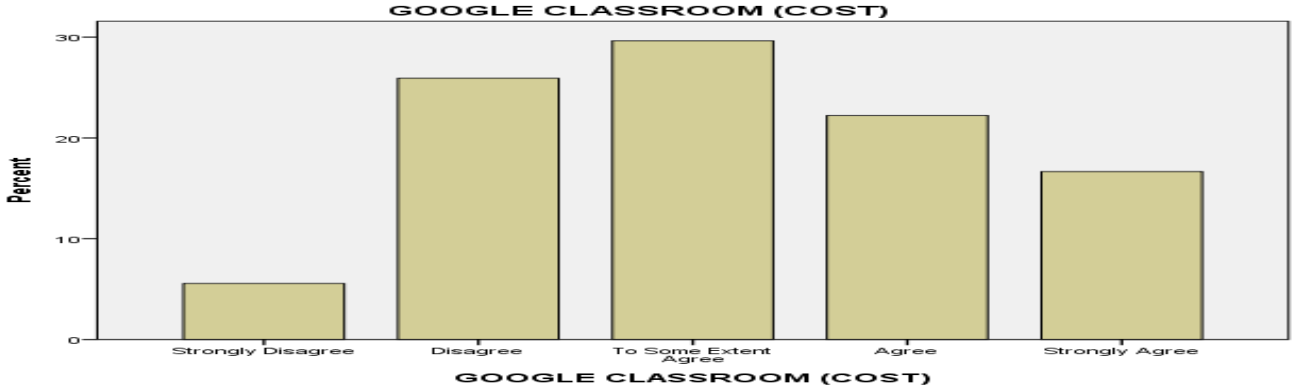
From the above table 1 and figure 1 it is observed that 18 (16.7%) respondents think that ZOOM is very highly cost effective in terms of data usage, 37 (34.3%) respondents consider it as highly cost effective, 34 (31.5%) respondents consider it as moderately cost effective, 16 (14.8%) consider it as low cost effective and 3 (2.8%) of the respondents perceived it as very low cost effective.

Table 2: The perception regarding cost effectiveness of GOOGLE CLASSROOM, in terms of data usage

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	5.6	5.6	5.6
	Disagree	28	25.9	25.9	31.5
	To Some Extent Agree	32	29.6	29.6	61.1
	Agree	24	22.2	22.2	83.3
	Strongly Agree	18	16.7	16.7	100.0
	Total	108	100.0	100.0	

Source: Computed through SPSS.

Figure 2: The perception regarding cost effectiveness of GOOGLE CLASSROOM, in terms of data usage



Source: Computed through SPSS.

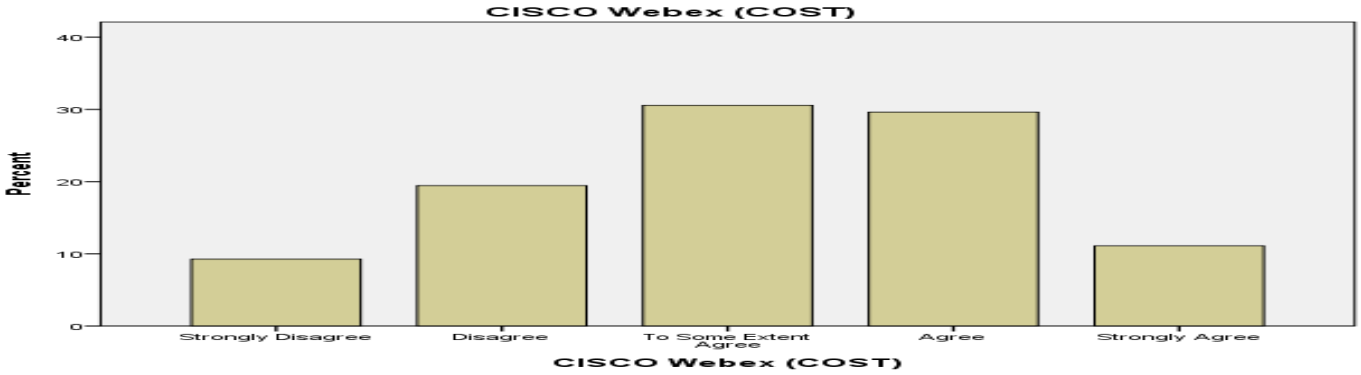
In the above table 2 and figure 2 it is given that 18 (16.7%) respondents think that GOOGLE CLASSROOM is very highly cost effective in terms of data usage, 24 (22.2%) respondents consider it as highly cost effective, 32 (29.6%) respondents consider it as moderately cost effective, 28 (25.9%) consider it as low cost effective and 6 (5.6%) of the respondents perceived it as very low cost effective.

Table 3: The perception regarding cost effectiveness of CISCO Webex, in terms of data usage

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	10	9.3	9.3	9.3
	Disagree	21	19.4	19.4	28.7
	To Some Extent Agree	33	30.6	30.6	59.3
	Agree	32	29.6	29.6	88.9
	Strongly Agree	12	11.1	11.1	100.0
	Total	108	100.0	100.0	

Source: Computed through SPSS.

Figure 3: The perception regarding cost effectiveness of CISCO Webex, in terms of data usage



Source: Computed through SPSS.

From the above table 3 and figure 3 it is deciphered that 12 (11.1%) respondents think that CISCO Webex is very highly cost effective in terms of data usage, 32 (29.6%) respondents consider it as highly cost effective, 33 (30.6%) respondents consider it as moderately cost effective, 21 (19.4%) consider it as low cost effective and 10 (9.3%) of the respondents perceived it as very low cost effective.

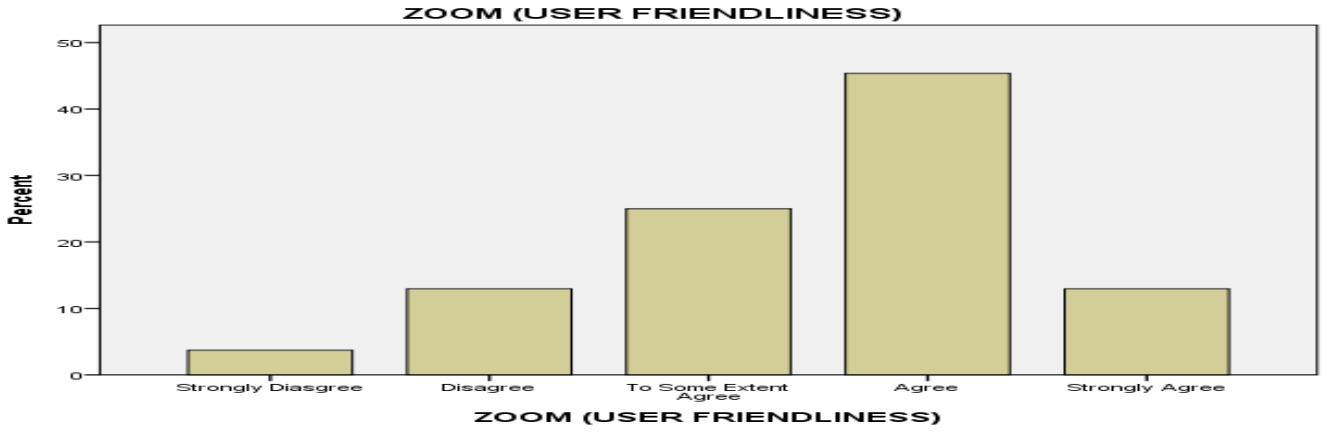
User Friendliness:

Table 4: The perception regarding user friendliness of ZOOM

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Diasgree	4	3.7	3.7	3.7
	Disagree	14	13.0	13.0	16.7
	To Some Extent Agree	27	25.0	25.0	41.7
	Agree	49	45.4	45.4	87.0
	Strongly Agree	14	13.0	13.0	100.0
	Total	108	100.0	100.0	

Source: Computed through SPSS.

Figure 4: The perception regarding user friendliness of ZOOM



Source: Computed through SPSS.

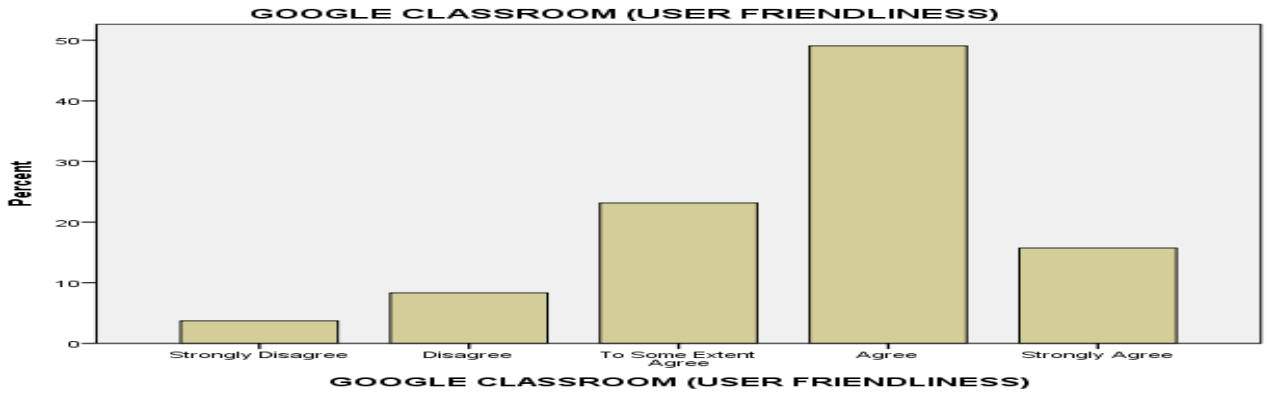
From the above table 4 and figure 4 it is observed that 14 (13%) respondents consider ZOOM as very highly efficient in terms of user friendliness, 49 (45.4%) respondents think it is highly efficient, 27 (25%) of the respondents consider it as moderately efficient, 14 (13%) of the respondents perceived it has low efficiency and 4 (3.7%) respondents think it has very low efficiency in terms of user friendliness.

Table 5: The perception regarding user friendliness of GOOGLE CLASSROOM

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	3.7	3.7	3.7
	Disagree	9	8.3	8.3	12.0
	To Some Extent Agree	25	23.1	23.1	35.2
	Agree	53	49.1	49.1	84.3
	Strongly Agree	17	15.7	15.7	100.0
	Total	108	100.0	100.0	

Source: Computed through SPSS.

Figure 5: The perception regarding user friendliness of GOOGLE CLASSROOM



Source: Computed through SPSS.

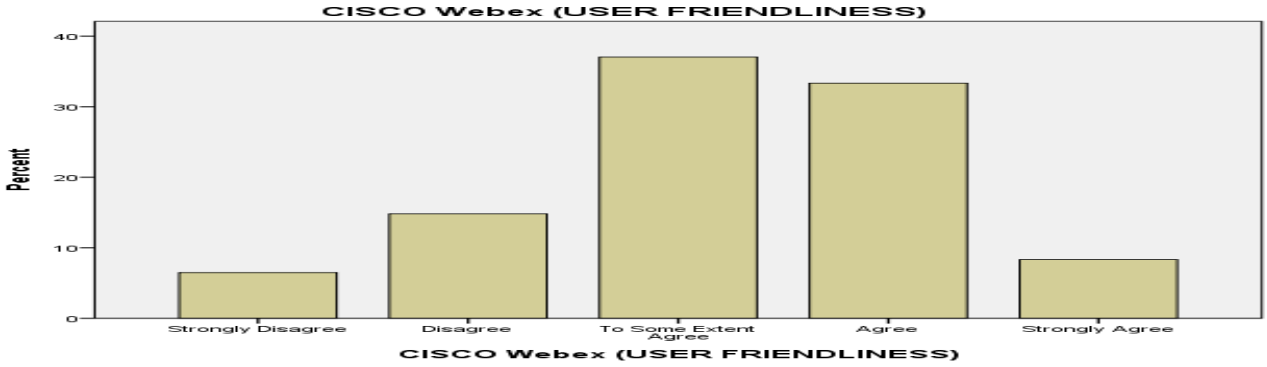
In the above table 5 and figure 5 it is given that 17 (15.7%) respondents consider GOOGLE CLASSROOM as very highly efficient in terms of user friendliness, 53 (49.1%) respondents think it is highly efficient, 25 (23.1%) of the respondents consider it as moderately efficient, 9 (8.3%) of the respondents perceived it has low efficiency and 4 (3.7%) respondents think it has very low efficiency in terms of user friendliness.

Table 6: The perception regarding user friendliness of CISCO Webex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	7	6.5	6.5	6.5
	Disagree	16	14.8	14.8	21.3
	To Some Extent Agree	40	37.0	37.0	58.3
	Agree	36	33.3	33.3	91.7
	Strongly Agree	9	8.3	8.3	100.0
	Total	108	100.0	100.0	

Source: Computed through SPSS.

Figure 6: The perception regarding user friendliness of CISCO Webex



Source: Computed through SPSS.

From the above table 6 and figure 6 it is deciphered that 9 (8.3%) respondents consider CISCO Webex as very highly efficient in terms of user friendliness, 36 (33.3%) respondents think it is highly efficient, 40 (37%) of the respondents consider it as moderately efficient, 16 (14.8%) of the respondents perceived it has low efficiency and 7 (6.5%) respondents think it has very low efficiency in terms of user friendliness.

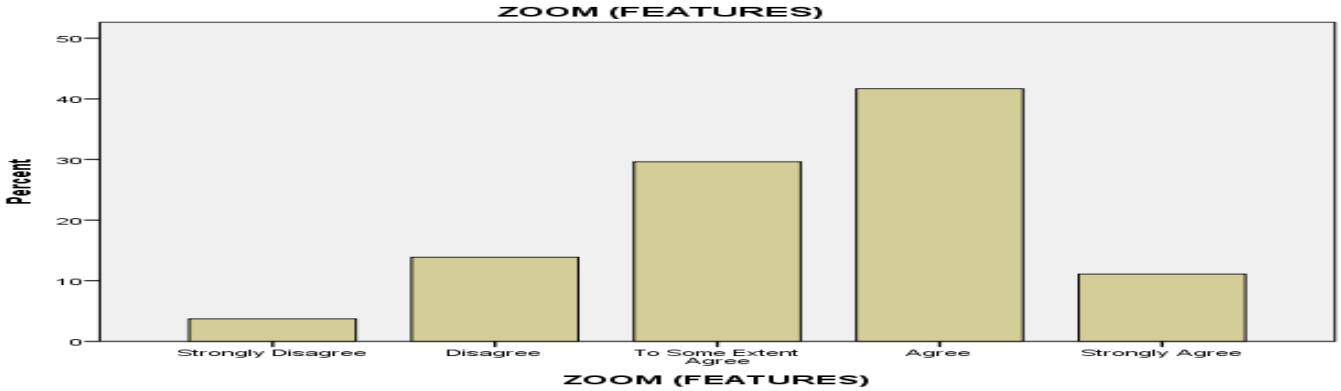
Features Availability:

Table 7: The perception regarding features availability of ZOOM

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	3.7	3.7	3.7
	Disagree	15	13.9	13.9	17.6
	To Some Extent Agree	32	29.6	29.6	47.2
	Agree	45	41.7	41.7	88.9
	Strongly Agree	12	11.1	11.1	100.0
	Total	108	100.0	100.0	

Source: Computed through SPSS.

Figure 7: The perception regarding features availability of ZOOM



Source: Computed through SPSS.

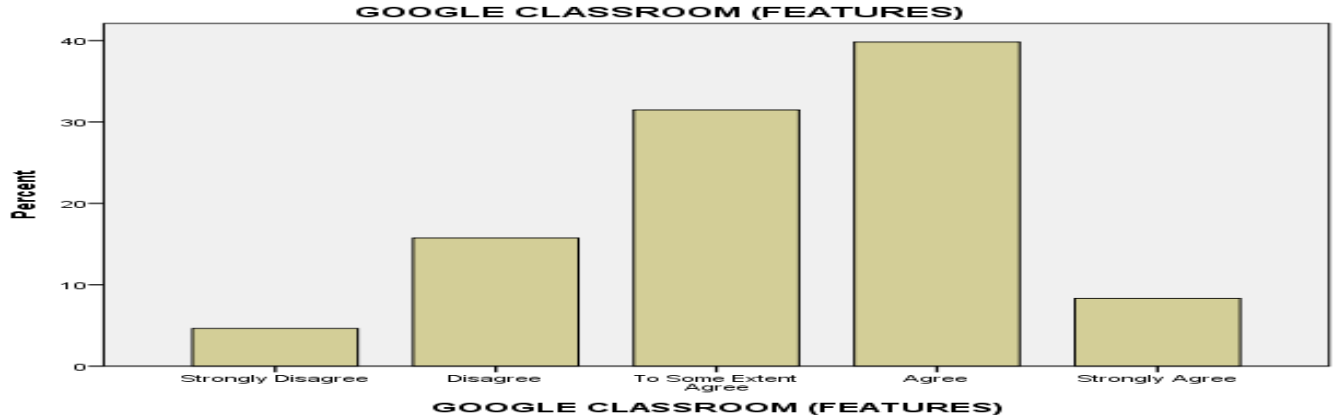
It is observable from the above table 7 and figure 7 that 12 (11.1%) respondents consider ZOOM as very highly efficient in terms of dynamicity of the features, 45 (41.7%) respondents think it is highly efficient, 32 (29.6%) respondents consider it as moderately efficient, 15 (13.9%) of the total respondents perceived that it has low efficiency and 4 (3.7%) respondents perceived that it has very low efficiency in terms of dynamicity of the features.

Table 8: The perception regarding features availability of GOOGLE CLASSROOM

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	4.6	4.6	4.6
	Disagree	17	15.7	15.7	20.4
	To Some Extent Agree	34	31.5	31.5	51.9
	Agree	43	39.8	39.8	91.7
	Strongly Agree	9	8.3	8.3	100.0
	Total	108	100.0	100.0	

Source: Computed through SPSS.

Figure 8: The perception regarding features availability of GOOGLE CLASSROOM



Source: Computed through SPSS.

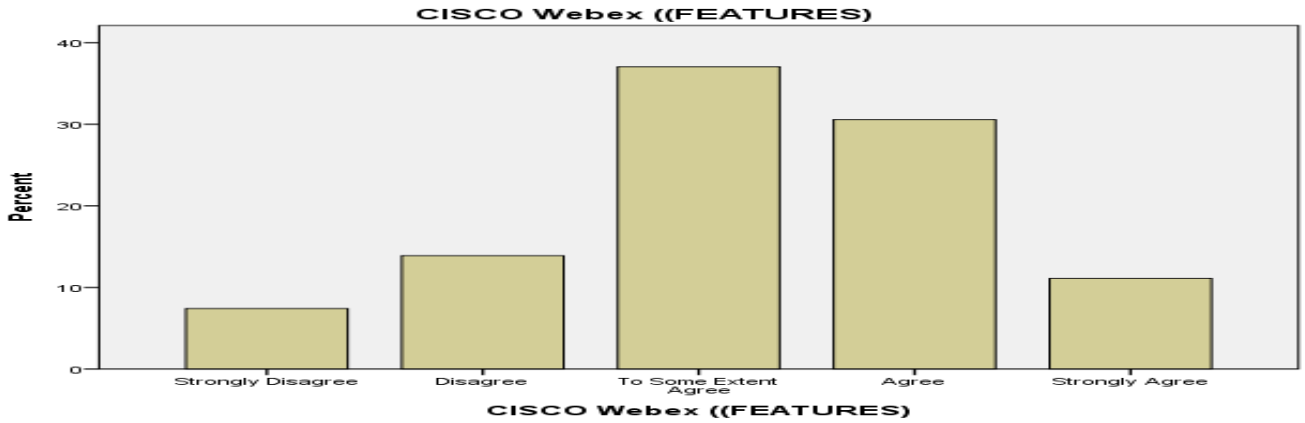
In the above table 8 and figure 8 it is given that 9 (8.3%) respondents consider GOOGLE CLASSROOM as very highly efficient in terms of dynamicity of the features, 43 (39.8%) respondents think it is highly efficient, 34 (31.5%) respondents consider it as moderately efficient, 17 (15.7%) of the total respondents perceived that it has low efficiency and 5 (4.6%) respondents perceived that it has very low efficiency in terms of dynamicity of the features.

Table 9: The perception regarding features availability of CISCO Webex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	8	7.4	7.4	7.4
	Disagree	15	13.9	13.9	21.3
	To Some Extent Agree	40	37.0	37.0	58.3
	Agree	33	30.6	30.6	88.9
	Strongly Agree	12	11.1	11.1	100.0
	Total	108	100.0	100.0	

Source: Computed through SPSS.

Figure 9: The perception regarding features availability of CISCO Webex



Source: Computed through SPSS.

From the above table 9 and figure 9 it is deciphered that 12 (11.1%) respondents consider CISCO Webex as very highly efficient in terms of dynamicity of the features, 33 (30.6%) respondents think it is highly efficient, 40 (37%) respondents consider it as moderately efficient, 15 (13.9%) of the total respondents perceived that it has low efficiency and 8 (7.4%) respondents perceived that it has very low efficiency in terms of dynamicity of the features.

Discussions, Conclusions and Recommendations:

Based on the above results the following conclusions and recommendations were drawn by the researchers It is found that in respect to cost effectiveness parameter for ZOOM the majority perception is that it is highly effective (34.3%) and moderately effective (31.5%), this two jointly consist more than two-third (65.8%) of the total respondents. In case of GOOGLE CLASSROOM the majority perception is that it is moderately effective (29.6%) and lowly effective (25.9%), this two jointly consist more than half (55.5%) of the total respondents. In case of CISCO Webex the majority perception is that it is moderately effective (30.6%) and highly effective (29.6%), this two jointly consist more than half (60.2%) of the total respondents. Hence it can be concluded from the above discussion that ZOOM application has highest comparative cost efficiency in terms of data usage, followed by CISCO Webex platform and GOOGLE CLASSROOM has lowest comparative cost effectiveness.

It is found that in respect to efficiency in case of user friendliness parameter for ZOOM the majority perception is that it is highly fruitful (45.4%) and moderately fruitful (25%), this two jointly consist more than two-third (70.4%) of the total respondents. In case of GOOGLE CLASSROOM the majority perception is that it is highly fruitful (49.1%) and moderately fruitful (23.1%), this two jointly consist more than two-third (72.2%) of the total respondents. In case of CISCO Webex the majority perception is that it is moderately fruitful (37%) and highly fruitful (33.3%), this two jointly consist more than two-third (70.3%) of the total respondents. Hence it can be concluded from the above discussion that GOOGLE CLASSROOM application has highest comparative advantage in terms of user friendliness with nearly 50% of the respondents have highly positive perception and nearly three-fourth of the total respondents are in view of moderate to high effectiveness of the platform, it is followed by ZOOM and CISCO Webex. ZOOM has been opined as more efficient than CISCO Webex because percentage of people perceiving ZOOM application as highly fruitful is much higher than percentage of people perceiving CISCO Webex application as highly fruitful.

It is found that in respect to effectiveness in case of dynamicity of features parameter for ZOOM the majority perception is that it is highly effective (41.7%) and moderately effective (29.6%), this two jointly consist more than two-third (71.3%) of the total respondents. In case of GOOGLE CLASSROOM the majority perception is that it is highly fruitful (39.8%) and moderately fruitful (31.5%), this two jointly consist more than two-third (71.3%) of the total respondents. In case of CISCO Webex the majority perception is that it is moderately fruitful (37%) and highly fruitful (30.6%), this two jointly consist more than two-third (67.6%) of the total respondents. Hence it can be concluded from the above that ZOOM is in most advantageous position in terms of features dynamicity, followed by GOOGLE CLASSROOM and CISCO Webex. ZOOM has been opined as more efficient than GOOGLE CLASSROOM because percentage of people perceiving ZOOM application as highly fruitful is higher than percentage of people perceiving GOOGLE CLASSROOM application as highly fruitful.

In the course sample collection researchers came to know that students consider the student intake or accommodating capacity of any online teaching platform as its most important criterion in deciding its user friendliness, how

easily the teacher can control nuisances during a class as a host of the platform and the provision for easy recording of the classes for seeing later are being considered as most important factors by students in judging the dynamicity of the features and Mega Byte usage during online classes under different platforms is being considered by them in judging the cost efficiency of a platform. Moreover, the most of the students opined that cost and dynamicity of the features is the most serious issue to them in smooth and efficient access of knowledge. Even if they missed a class they can go through the recorded class.

Hence researchers based on the above discussions and conclusions recommended that adoptation of ZOOM application in dissemination of education among students will be most beneficial for the students community in accessing education smoothly and feasibly. Moreover, the classes should be recorded for using as references by the students in future.

Limitations and Future Research Scope:

The current study is based on selected number of online teaching applications and selected number of parameters. The sample size is also not too large and collected only from selected areas. More number of online teaching applications can be considered for study along with more number of parameters can be selected to understand this comparative scenario more exhaustively. Research can also be conducted to identify the core parameters significantly impacting the adaptation of online teaching applications. This study can be conducted in reference to various places and among different sections of students or based on teachers' perception. For this, higher order statistical tools like factor analysis, regression models, cluster analysis, etc. need to be used.

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