

Student Interaction On Virtual Learning Operating Systems During The COVID-19 Pandemic2020

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Abstract

At the end of last year, the epidemic of Corona Virus Disease 2019 (COVID-19) shifted conventional face-to-face teaching to online education platforms in different regions, significantly influencing the quality of education. This paper uses a questionnaire survey to gather online, and offline user experience data constructs a student satisfaction control chart by analyzing emotion and methodology adopted for quantitative analysis, taking user satisfaction on online education platforms as the research object. In a short period, the COVID19-Pandemic has motivated educators to turn their lessons into interactive versions. This research compares teachers' perspectives concerning their online teaching perceptions (before to remote teaching) and experiences (after a month of online teaching). Research has shown a drastic shift in teachers' perceptions of their resolutions to incorporate technology in their classrooms in the post-corona period. The findings of this study have implications for teacher professionalization. Finally, suggestions are given to develop the online education platform to enhance the level of online education during the COVID-19 pandemic to promote the method of information-based education there.

Keywords – *Students interaction, Pandemic, Online education, online platform, Perception Readiness*

Introduction – As the COVID-19-a novel coronary virus disease spread across the globe, many countries have ordered all schools and universities' closure. Educational institutions have come to a complete halt because they have had to protect their students from viral exposure levels frequent in a highly socializing student community. That growing phenomenon of COVID-19 resulted in the suspension of classes for more than 850 million students worldwide, affecting schools in these countries and regions' original teaching plans. Soon afterward, several countries started offering Zoom, Skype, FaceTime, etc., online teaching to encourage online education and restore the normal teaching order. The global spread of COVID-19 resulted in the suspension of classes for more than 850 million students worldwide, disrupting schools' original teaching plans in these countries and regions. Soon later, many countries started to offer online teaching to students by Zoom, Skype, Google meet, Google classroom, Microsoft Team, Youtube, etc., to promote online education. The Education Ministry of the Government has stated that it will actively promote information-based education and teaching and strengthen the platform's capacity to support online teaching facilities. The online classroom has become a necessary way of establishing a normal teaching order in response to the epidemic's outbreak. Other office meeting software resources in China provide services such as an online classroom and online coaching. It is important to investigate whether such network education platforms are essential for the smooth functioning of faculty and students, whether network teaching is qualified to perform high-quality teaching activities, whether network education can become an efficient means of special-period education, and to recommend policies to facilitate the advancement of network education according to the results of research. Researchers from various counties have researched online education platforms' evaluation, including using an analysis method and the partial least square method to determine the online education platform satisfaction evaluation system. Evaluation and performance analysis using an instrument systematically designed to measure a combined graduate program's educational component according to interpersonal distance principles. He found that various course elements for adjustment could improve the student learning experience's layout, dialog, and autonomy. The outcomes of a questionnaire designed to assess the effect of professional development intervention were published, and the study showed high scoring means statistically significant for several questions in the questionnaire. The survey included our University of Under Graduate and Post Graduate Students. However,

in the evaluation process, these traditional methods have some limitations, such as numerical calculation and unreasonable volume evaluation. Also, attending virtual lectures at leading universities and training videos from institutions were the main forms of online education. However, during the epidemic phase, online education is mainly in the form of class-based teaching by teachers with their classrooms, extending the original offline education. Earlier studies on the intention towards online education platforms have not analyzed in detail change a person, such as ease and use and quality of connectivity, bringing about by the outbreak. This paper evaluates the online education platform in China from students' perspective, based on this, combined with the context of education. Once again, to find out the factors influencing online education platforms' satisfaction, an emotional study of online user comments was performed. Then, on its basis, the method of satisfaction assessment was developed. The effectiveness of learning also varies depending on how the content is developed and maintained in the online environment, including understanding and addressing students' limitations. The study is even more acceptable, provided that the educational technology system has never been tried on this spectrum in India, and this is like a massive social experiment. The findings of this study are relevant for colleges and universities for two main reasons. First, the switch to online mode must have been spontaneous despite the rapid shutdown implemented on COVID-19, and the institutes did not have enough time to develop and adopt the online mode learning outcomes. There seems to be unpredictability about the pandemic's time frame and the probability of essentialism, and social distances can become a new normal. Therefore, all education systems should be designed to shift this same large percentage of the curriculum to e-learning platforms and adjust the study plan and curriculum consequently. The results of our study can make significant contributions to the course of action in the educational environment.

Review of literature – Existing technology developments encourage us to use the same lot of approaches to design online content. It is essential to consider the preferences and conceptions of teaching and learning, whereas developing university courses makes learning effective and productive. The learning process's preference is related to the willingness or willingness of the learner to participate in collaborative learning and the factors involved. Influencing the learning process online. In the section to be implemented, we illustrate the lessons to be learned from the literature review. Dr. Geetali Tilak said in her paper as Universities may benefit significantly from connecting the power of cloud computing, including cost savings on cloud services. This study gives an overview of the use of cloud computing in higher education institutions, as well as some of the expected benefits and limitations. Visual analytics is a trying to develop research field that helps to increase the use of large amounts of information in a variety of applications by intelligently integrating the strengths of computerized data analysis with the user's visual perception and analysis competencies. It is important to keep a huge amount of data up to date by using standard tools for data analysis and exploration. Dr. Geetali Tilak also studied in her research paper as Visual analytics aims to provide better and more efficient methods for visualizing and evaluating large datasets, including by allowing them to act on their findings immediately. (Tilak, G. (2020). Artificial intelligence) Warner et al. (1998) proposed online learning preparation in the Australian vocational education and training sector. Preparation for online learning has also been characterized as organized into three factors. The student's suggestion for the delivery method as made reference to face-to-face classroom instruction and the student's confidence in the use of electronic communication for learning, including competence and trust in the use of the Internet and computer-based communication and the opportunity to communicate in independent learning. The framework would be further modified by several researchers, including McVay (2000, 2001) that adapted a willingness to try out new techniques that evaluated academic attitude and behavior when correlates. More information on UNESCO's COVID-19 Education Response.

UNESCO is collaborating with ministries of education in affected and concerned countries to ensure continued learning for all children and youth through alternative channels in the context of widespread school closures to slow the spread of COVID-19. Consequently, Smith et al. (2003) experimented with justifying the McVay (2000) e-learning online survey and created a two-factor framework, "Compassion with e-learning" and "Consciousness." Later, several studies were undertaken to conceptualize the development of online learning readiness. The factors that influenced the commitment of academics to learn online were self-directed education Guglielmino (1977) also said the same by Garrison (1997) and Lin and Hsieh (2001) find the same analysis. McVay (2000, 2001) got similar results in creativity for learning (Deci and Ryan (1985). Whereas concluded Ryan and Deci (2000); Fairchild et al. (2005) about the e-learning and learner control (Hannafin (1984). The other faculties also collect the relevant data and found the relevance in same, Shyu and Brown (1992); Reeves (1993). Computer and internet self-efficacy analyzed by Bandura (1977, 1986 1997) and also Compeau and Higgins (1995); Eastin and LaRose (2000); Tsai and Tsai (2003); Tsai and Lin (2004); Hung et al. (2010) set the same. Online communication self-efficacy studied by Palloff and Pratt (1999), McVay (2000), Roper (2007) had the conclusions. Every other initiative to strengthen educational education's advantages deserves to be made to understand users' perceptions. Studies have documented both favorable and unfavorable perceptions of online learning among students. Several studies have shown that the instructor's interaction with students has a significant effect on the student's experience

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with online learning. Consistency in the design of classes (Swan et al. 2000), capacity to communicate to topic lecturers to enhance critical thinking abilities and data processing, Duffy et al. (1998, pp. 51–78), Picciano (2002), Hay et al. (2004), evaluate of interconnectivity in virtual communities evaluated by Arbaugh (2000) and Hay et al. (2004), Kim et al. (2005). The social presence considered by Barab and Duffy (2000) and Kim et al. (2005), Jonassen (2002), academic self-concept (Trautwein et al. (2006); Lim et al. (2007)), competencies required to use the technology (Wagner et al. (2000) were identified as the perceived strengths of online learning. Hence an effective online class depends upon well-structured course content (Sun and Chen (2016)), well-prepared instructors (Sun and Chen (2016)), advanced technologies (Sun and Chen (2016)), and feedback and clear instructions (Gilbert, 2015). Harchekar, J. S., & Dani, M. (2020). Student's perception of the digital assessment system of commerce program. Said in her research paper that, because the students are from the Department of Commerce Education, the higher-achieving students probably accommodated faster and thus benefited more from computer-based assessment in the current study. Once all students are fully acquainted with the computers, familiarity should become less important. Despite having been trained on how to use the online assessment system before the exam, some students were nervous during the exam. To avoid such issues, students must be familiar with the online assessment system, and the environment in which they are taking the exam should be welcoming. Tilak, P., Deshmukh, M., Phadke, S., & Hakim, S. S. K. A survey on online examination during COVID 19 pandemic: Perception of Management Students. Said in her research that The lockdown caused by the pandemic has had a significant impact on the administration of the Higher Education Sector. Deshpande, B. (2021). Impact of E-Commerce in India. Said that E-Commerce is the practice of conducting business using modern communication tools such as money transfer, system telephone, E-Payment, fax, E-data, Interchange, and the Internet. This paper aims to highlight the various challenges faced by e-commerce in India and to comprehend the critical growth factors required for e-commerce. Many organizations have begun to digitize their processes, such as online admissions, e-attendance, online teaching-learning, and exam information management systems. Though this system is new for traditional courses, professional management courses have been using it for many years. Management students have always been taught that it is critical to apply management principles in all aspects of life. In today's world, an individual's emotional quotient is as important as his or her academic abilities. The COVID 19 pandemic has taught everyone the value of adaptability. That being said, several weaknesses related to online learning were also described in the literature. Prolong throughout responses by Hara and Kling (1999) and Petrides (2002) and Vonderwell (2003). Uncertainty of their peer group's knowledge and experience Petrides (2002) lack of comprehension of community and mayor a sense of exclusion given by Woods'(2002) and Vonderwell (2003)also Lin & Zane, (2005) where the Computer fraternity searches for their problems in collaborating with co-learners, technical issues Piccoli et al.(2001)mayor Song (2004). The is s related to instructor studied by Muilenburb (2003). Many other research teams evaluated the efficiency of online or web-based lectures to traditional teaching methods. The types of possible encounters compared to conventional classrooms vary considerably, and the impact of connectivity in that situation or the other can have a specific effect on students and faculty's attitudes. The researchers focus on perceptions of online learning experiences alternative to traditional teaching methods by students and faculty and reported mixed findings demanding further analysis. Most of these areas tend to involve an understanding of the impact and percentage of connected internet Moore and Kearsley (1995), adaptability and affordability of the internet suggestions Navarro and Shoemaker (2000), abilities, motivating factors, time and perception of the learning process and teacher Yong and Wang (1996), Shih, Ingebritsen, Pleasants, Flickinger, & Brown, 1998; McIsaac (1999) White (2004). As to if any or all of these aspects are positively correlated with academic performance studied by Brewer and Erikson (1997). It also was found there was a considerable impact between online and face-to-face teaching approaches of both their satisfaction and academic achievement (Hara and Kling, 1999). The study also supported the fact that the online class would be as effective as the traditional clay class (Nguyen, 2015).

The study has emphasized different models which provide a basic model for analyzing student teachers' perceptions of higher learning. Journals have already illustrated potential bottlenecks to the success of online learning. However, not many papers have tried to understand students' perceptions and attitudes from the Indian perspective. Understandably, only a limited number of distance learning platforms used online education before the Covid-19 pandemic. Furthermore, to the best of our knowledge, no effort was made to study these lines in the teaching profession.

Methodology

Participants- Undergraduates and Post Graduates with Ph D. students were chosen as the respondents for this study as all were affected by COVID -19 PANADAMIC. Students were advisable to learn subjects like Business Mathematics, Statistics, Biostatistics, Research Statistics, all subjects are technical and conceptual, difficult to learn and understand. 66 students responded in the system. COVID19-Pandemic would also have pressured teachers and

students to transform their teachings and learning into online versions in a short time. This study evaluated the teachers' and students' perceptions regarding their interactive learning aspirations (previous to the transfer to distant location teaching) and their perceptions (after online teaching).

Variables –

1. Impact of student's satisfaction
2. Distance learning
3. High speed internet
4. Soft ware technology
5. Supports of parent
6. Face to face communication

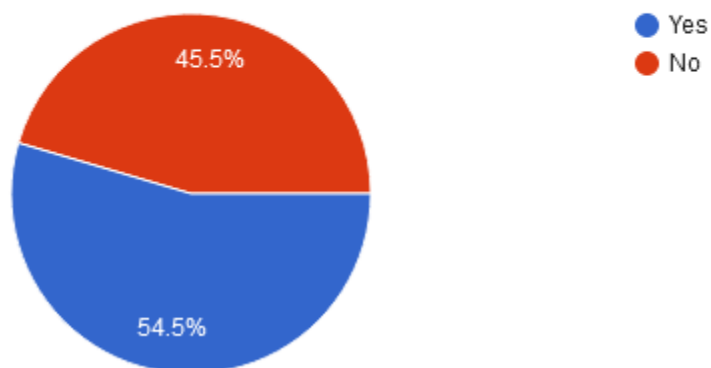
Hypothesis –

H01: To study the impact of student satisfaction with online learning

H02 : To study the impact of software technology & face to face communication on students satisfaction.

Q.1 ,Are you satisfied that your college is delivering distance learning?

66 responses



From the responses, 54.5% of students were satisfied with the college's arrangements for online education. However, 45.55% were not welcome online learning and teaching with the college performance.

When the Questionnaire asked about the Net as an online connection, students responded positively, with 51.5 % had a good facility. That the students' residential area is well equipped with software networking.

Procedure

A structured and unstructured preliminary questionnaire was designed with the help of a literature survey and informal discussions with the students who are currently attending the online classes. Pre-testing was done with 10 respondents and their feedbacks was considered for designing the final questionnaire.

The domain of the study -First of all, we identified key informants among different universities for the online survey. The link for the Google form was sent to the key informants through WhatsApp. After submitting their responses, they circulated the questionnaire among other university students like snowball sampling. We have disabled the link after 10 days of circulating the Google forms. In this way, responses from a total of 66 were valid and full questions attempted response selected for the analysis.

Data analysis -Data on education levels were collected first, followed by preferences, perceptions, benefits, constraints, and suggestions from learners. To avoid unnecessary researcher bias, the statements were prepared based on a thorough review of the literature and discussions with experts. To analyses and summarize perceptions and statements. To summarize, the data, frequency, and percentage were calculated for most of the questions.

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Comments		
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	Cases Used	Statistics are based on all cases with valid data.
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Statistics													
				Q.1 ,Are you satisfied that your college is delivering distance learning?	Q.2. Do you have high-speed internet at home?	Q.3. Do you have access to a device for online learning?	Q.4. Are you satisfied with the technology and software you are using for online learning?	Q.5. Is the role of technology important in remote learning?	Q.6. Is face-to-face communication important for you while learning remotely?	Q.7. Do you have a 1-1 discussion with your teacher?	Q.8. Generally speaking, are your parents helpful while supporting their children's remote learning?	Q.9. Is the environment at home peaceful while learning?	Q.10. Do you think from home is better as compared to learning at college?
N	Valid	66	66	65	66	66	66	66	66	66	66	66	66
	Missing	0	0	1	0	0	0	0	0	0	0	0	0
Mean		1.4394	1.5000	1.3538	1.4394	2.015	1.3030	1.3939	1.3788	1.9545		1.4697	
Std. Error		.06156	.06202	.05977	.06156	.1579	.05700	.06061	.06017	.13729		.06190	

of Mean										
Median	1.0000	1.5000	1.0000	1.0000	2.000	1.0000	1.0000	1.0000	2.0000	1.0000
Mode	1.00	1.00 ^a	1.00	1.00	1.0	1.00	1.00	1.00	1.00	1.00
Std. Deviation	.50012	.50383	.48188	.50012	1.2829	.46309	.49237	.48880	1.11537	.50291
Variance	.250	.254	.232	.250	1.646	.214	.242	.239	1.244	.253
Skewness	.250	.000	.626	.250	1.233	.877	.444	.511	1.121	.124
Std. Error of Skewness	.295	.295	.297	.295	.295	.295	.295	.295	.295	.295
Kurtosis	-1.999	-2.063	-1.660	-1.999	.300	-1.270	-1.860	-1.794	.408	-2.048
Std. Error of Kurtosis	.582	.582	.586	.582	.582	.582	.582	.582	.582	.582
Range	1.00	1.00	1.00	1.00	4.0	1.00	1.00	1.00	4.00	1.00
Minimum	1.00	1.00	1.00	1.00	1.0	1.00	1.00	1.00	1.00	1.00
Maximum	2.00	2.00	2.00	2.00	5.0	2.00	2.00	2.00	5.00	2.00

a. Multiple modes exist. The smallest value is shown

Q.1 ,Are you satisfied that your college is delivering distance learning?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	37	56.1	56.1	56.1
	2	29	43.9	43.9	100.0
	Total	66	100.0	100.0	

Q.2. Do you have high-speed internet at home?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	33	50.0	50.0	50.0
	2	33	50.0	50.0	100.0
	Total	66	100.0	100.0	

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Q.3. Do you have access to a device for learning online?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	42	63.6	64.6	64.6
	2	23	34.8	35.4	100.0
	Total	65	98.5	100.0	
Missing	System	1	1.5		
Total		66	100.0		

Q.4. Are you satisfied with the technology and software you are using for online learning?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	37	56.1	56.1	56.1
	2	29	43.9	43.9	100.0
	Total	66	100.0	100.0	

Q.5. Is the role of technology important in remote learning?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	30	45.5	45.5	45.5
	2	23	34.8	34.8	80.3
	4	8	12.1	12.1	92.4
	5	5	7.6	7.6	100.0
	Total	66	100.0	100.0	

Q.6. Is face-to-face communication important for you while learning remotely?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	46	69.7	69.7	69.7
	2	20	30.3	30.3	100.0
	Total	66	100.0	100.0	

Q.7. Do you have a 1-1 discussion with your teacher?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	40	60.6	60.6	60.6
	2	26	39.4	39.4	100.0
	Total	66	100.0	100.0	

Q.8. Generally speaking, are your parents helpful while supporting their children's remote learning?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	41	62.1	62.1	62.1

	2	25	37.9	37.9	100.0
	Total	66	100.0	100.0	

Q.9. Is the environment at home peaceful while learning?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	29	43.9	43.9	43.9
	2	22	33.3	33.3	77.3
	3	6	9.1	9.1	86.4
	4	7	10.6	10.6	97.0
	5	2	3.0	3.0	100.0
	Total	66	100.0	100.0	

Q.10. Do to think from home is better as compared to learning at college?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	35	53.0	53.0	53.0
	2	31	47.0	47.0	100.0
	Total	66	100.0	100.0	

Reliability

Notes		
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	Cases Used	Statistics are based on all cases with valid data for all variables in the procedure.
Syntax	RELIABILITY /VARIABLES=Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 VAR00010 VAR00011 VAR00012 VAR00013 VAR00014 VAR00015 VAR00016 VAR00017 /SCALE('ALL VARIABLES') ALL /MODEL=ALPHA /STATISTICS=DESCRIPTIVE SCALE.	
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Q.9. Is the environment at home peaceful while learning?	Agree	Disagree	Neutral	Disagree	Strongly disagree	Strongly agree
	21	9	5	9	5	27

	Q.1 ,Are you satisfied that your college is delivering distance learning?	Q.4. Are you satisfied with the technology and software you are using for online learning?	Q.5. Is the role of technology important in remote learning?	Q.6.Is face-to-face communication important for you while learning remotely?	Q.7. Do you have a 1-1 discussion with your teacher?	Q.10. Do to think from home is better as compared to learning at college?
sum	95	95	133	86	92	97
AVERAGE	1.439	1.439	2.015	1.3030	1.3939	1.4697
SD	0.5	0.5	1.2829	0.4631	0.4924	0.5059
VAR	0.25	0.25	1.6459	0.214	0.2424	0.2559
CORRELATION	0.09	0.42	0.5648	0.480	0.2457	0.4987
F test	0.952	0.80	0.0085	0.622	0.9534	0.9534

As the test gives the positive correlation H01 & H02 both accepted .There is most positive impact of software technology and face to face learning on the distance learning as online learning satisfaction of students.

Findings - Self-learning, easiness of preparation and presentation of assignments with the help of the internet, operational, ease of access, direct consequence of learning, no academic loss, time-saving, learning of digital skills, continuous teachers' support, timely doubt clearing, good communication skill, and easy accessibility are some of the positive experiences with online learning that student teachers already have. Adequate power supply, internet connectivity issues, poor digital knowledge and skills, and a lack of cyber safety awareness are some of the major issues identified by student teachers. It accurately demonstrates the persistence of our government's brain drain; lack of infrastructure and parental involvement are some of the major barriers to pursuing online learning. However, according to Nagar (2020), the following are the major determinants of the effectiveness of online learning sessions: availability of digital devices, Internet connectivity, and infrastructural facilities. His research paper is a preprint and has not been peer-reviewed. The study reveals the student teachers' stress, lack of confidence, and difficulties encountered by both students and teachers in a sudden switch to online classes.

Conclusion-In the context of the pandemic situation, the transformation of teaching and learning to an online mode has received extensive acceptance from student teachers. Because of the hasty adoption of online mode, student teachers were unprepared mentally, financially, socially, and technically, and even teachers experienced unique challenges to unfamiliarity with techno pedagogical approaches. As per the result of this research, there is an urgent need for training for both students and teachers to become equipped to deal with digital knowledge and skills. This study highlighted our country's digital divide, and it calls for government attention to make online learning accessible to all learners.

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