A STUDY ON ONLINE TEACHING-LEARNING EXPERIENCE

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Abstract

The whole world of higher education is going digital is a fundamental shift in classrooms and lecture halls, but also in research marketing and recruitment. Today students expect to learn and retort using the devices that dominate the rest of their lives, like laptops tablets and smartphones. Universities are thinking beyond just filming lectures on the back of the room and archiving them. Online teachers are considering how to create high quality online courses keep students engaged through online text video and interaction that is true shift. Professors can ask students to do online courses alongside face-to-face classes. Statement of information online that attend classes to discuss what is been learnt everything must work on a smartphone, so course design must be more responsive. In the past online learning was a lonely experience but now interaction is the dominant way people behave on the web, so courses are designed to be a social experience. Students might watch a video then be invited to join a discussion and asked questions about it. The educator takes part in the discussion and responds to questions just like in a traditional classroom. As it is observed, increasingly, top universities are offering whole degrees online, some are already doing this for graduate degrees. It is also true that courses being broken into sections so that students can pick the parts they need. This means, the online classes will overtake the traditional degree. An 18-year-old will experience of heading off to university is about more than just an academic degree and some subjects like healthcare and engineering require hands on learning but when today's students arrive at university they expect digital technology to be part of the experience. This study intends to know the experience of online teaching-learning experience and how is it differs with demographic dimensions.

Keywords: online education, teaching-learning experience, live classes, recorded classes, mock tests, assessments, study material

Introduction

Online education is the form of education that takes place over Internet. It is also called as learning or online learning. Students attend online lectures with the help of computer or a smartphone although online education has become popular nowadays. It has both advantages and disadvantages The advantages are flexibility - students can study the online course material during their own time, comfort - online lectures can be attended from the comfort of your home, reduced cost - online education can cost less as there is no cost for commuting saves time. Disadvantages are; lack of social interaction, it is difficult to have group discussions in online education student teacher interaction is also limited, technology issues - many students face technical issues like slow

Internet speed or inconsistent Internet connectivity, this hampers the learning experience, cheating - students can check easily if exams are conducted online they can copy the answers as they give the exams from their own house, inability to focus -students find it difficult to focus on screen for long period of time. Students get distracted easily towards social media or other sites. Online education has proved to be a boon during the lockdown phase but it has some limitations it should not replace the traditional way of education as it cannot fully replace the human relationships that develop in a group.

High-quality digital learning experiences are built on the foundational principles of providing equitable, inclusive, accessible learning environments for all students. In addition, high-quality digital learning experiences are well-organized and thoughtfully designed. These experiences rely on instructional design principles and strategies to align learning outcomes with learning assignments, activities, and assessment practices. In these ways, high-quality digital courses provide robust learning experiences for students, not only
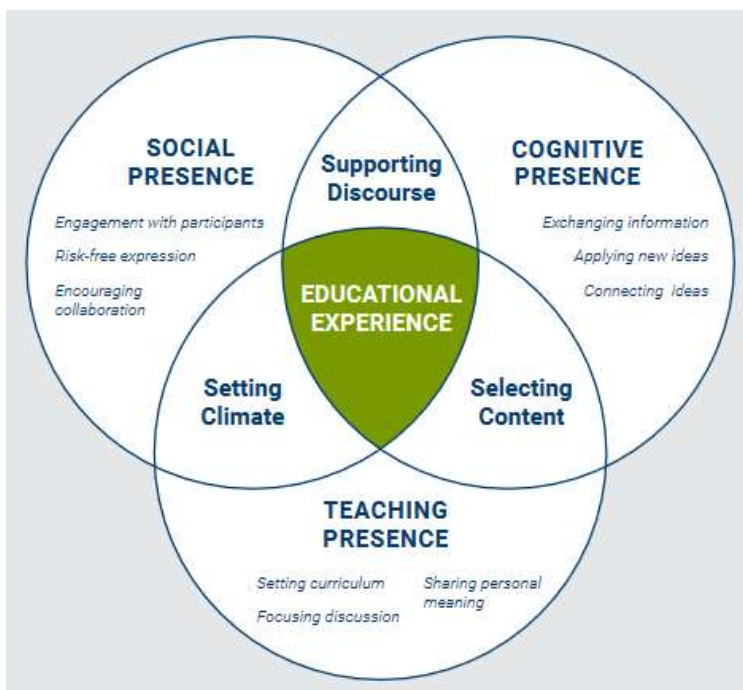

Figure.1 Education Experience Model, (Garrison, 1999)

through strategic design, but also through integrating intentional opportunities for community-building and interaction in the digital environment.

Online learning has shown significant growth over the last decade, as the internet and education combine to provide people with the opportunity to gain new skills. Since the COVID-19 outbreak, online learning has become more centric in people's lives. The pandemic has forced schools, universities, and companies to remote working and this booms the usage of online learning. Even before the pandemic, Research and Markets forecasts the online education market as $350 Billion by 2025, so the numbers might be updated after analyzing the growth impacts of COVID-19 on the online learning market (Koksal, 2020).

Literature Review

the value and the ways of effective utilization of video conferencing in an online learning environment were presented with a case study following the principles of educational neuroscience and distance education, so that they can function as educational and learning aids appropriate to further examine the objectives of higher education based on the use of available digital

technologies (Yanhong Wei, 2022). It is believed that there are new educational opportunities stemming from this situation that are ripe for aiding learners and mentors alike (Marcus J. C. Long, 2022). Acceptance of online assessment varies according to college type (in favor of the School of Computing Sciences), and according to computer skills (in favor of students with Moderate computer skills) (Alsalhi, 2022). Blended learning will perhaps be a more significant growth area than fully online learning, this shows that the education industry is entering into a new era (Kyong-Jee Kim, 2006). The availability of the Internet has reinforced the combination of many existent multimedia services as tools for creating a Virtual Learning Environment (VLE) that asserts an enhanced content management, a better teaching environment, and re-established the active role of the learner (Anissa Cheriguene, 2022)

Objectives
1. To understand the students' experience and perception about online teaching.
2. To analyse the impact of demographics on online teaching.

Hypothesis
There is a significant difference among of demographic factors and online teaching methodologies. Demographic factors include age, gender and qualification. Teaching methodology variables are Recorded Videos, Live Sessions, Mock Test, Assessment of Mock Test and Study Material

Results and Discussion
1. It is observed that all the parameters considered for recorded class have been negatively skewed. Out of 23 parameters 16 have statistical significance (Appendix- 1). This is very much evident that majority of the respondents have a prefer recorded class videos. Except demonstrations of concepts using only board or white screen, Video classes with Classroom setup concentrating only the black board, Video Classes with classroom setup covering the entire classroom with all students, video classes without instructor, and it includes voice over and animations, video classes without instructor, and it includes voice over and course slides and video classes without instructor, and it includes voice over, course slides and graphics, all other parameters are significant.
2. Respondents opine live class sessions are beneficial due to the selected parameters in the study. It is found that 11 parameters, 8 are statistically significant by having a negative coefficient of skewness (Appendix- 2). Except Live classes through only webcam, Live classes using camera in a classroom setup and Sample recorded video about the quality of live classes, all other parameters confirm significance.
3. With respect to the attributes of mock tests, it is very much evident that except 6 attributes (After watching the video sessions of a particular concept, immediately take mock test of that particular concept, Computer Adaptive Test, Low, Medium and High difficulty level questions in the practice mock test and Subjective Test) out of 16, all others exhibit statistical significance for skewness (Appendix- 3).
4. Attributes related to assessment is also found to have a negative skewness. It is observed that except online interviews, all other 11 attributes are statistically significant (Appendix-

4). Students attitude towards online study material against all the attributes (7 attributes) found to statistical significance(Appendix- 5).

5. Variations among demographic factors and teaching methodologies are presented in the below table;

Table showing p-values of F-test of Two way ANOVA table

Source of Variation	Age	Gender	Qualification
Rows (teaching methodologies)	0.00	0.00	0.13
Columns (demographic factors)	0.00	0.10	0.00

It is observed that significant difference within teaching methodologies with respect to age and gender and there is a significant difference among age and qualification with respect to teaching methodologies at 5% significance level.

6. High video quality, additional supporting content like PDF, PPT, Word DOCS, Excel Sheets with live video classes, cheating proof, providing results in the form of obtained percentage, percentile, average score and overall score and providing platform to learn about new technologies, along with its uses are found to be pivotal elements with respect to recorded class, live class, mock tests, assessments of mock test and study material respectively.

Conclusion

In the current situation, online teaching-learning has become new paradigm across the globe. This study focuses on perception of general public on online teaching-learning. Not only students but also the teachers are induced to this approach as a result of facing the new normal. Hence, it is utmost important to both education institutions and students to abreast the online teaching methodology to have sustainability in the domains. It is observed in the study that all the parameters in the selected study variables (recorded classes, live classes, mock tests, assessments of mock tests and study material) have observed a positive responses from the target audience. The study clarifies that, teaching methodologies varies with age and gender, whereas opinion of teaching methodologies differ for each group and their respective qualification. In the nutshell it can be concluded that high video quality, additional supporting content like PDF, PPT, Word DOCS, excel sheets with live video classes, cheating proof, providing results in the form of obtained percentage, percentile, average score and overall score and providing platform to learn about new technologies, along with its uses are found to be pivotal elements in the selected study variables with respect to online teaching-learning process.

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Annexures -1

Recorded Video	N	Mean	Skewness		Z
	Statistic	Statistic	Statistic	Std. Error	
High Quality Video is very much preferable	162.00	4.01	-1.10	0.19	-5.75
Signaling – In Video Classes, Using of Text on the video screen or symbols or light pen or other tools to highlight the content of the video is very much preferable	162.00	3.90	-0.94	0.19	-4.92
Segmentation – It is easy to learn when the concepts are divided into smaller videos	162.00	3.65	-0.51	0.19	-2.65
Weeding – Elimination of unwanted information from the video classes is always preferable	162.00	3.74	-0.75	0.19	-3.95
Matching Mobility – It is very much effective to use multi channels such as a separate video recorder, audio recorder, screen recorder, Graphics etc... and combining into one single video classes	162.00	3.70	-0.63	0.19	-3.30
Training and Lectures through an instructor is very effective.	162.00	3.96	-0.95	0.19	-4.96
Demonstrations of concepts using only board or white screen is very effective	162.00	3.54	-0.32	0.19	-1.70
Demonstrations of concepts by using info-graphics is very effective	162.00	3.80	-0.77	0.19	-4.01
Demonstrations of concepts by using Complete Graphics is very effective	162.00	3.56	-0.39	0.19	-2.03
Scenarios and simulations – Explaining the concepts according to actual scenario and a demo model is very much effective to understand.	162.00	3.75	-0.61	0.19	-3.20

Learner Generated Videos – Testimonial videos - Opinion provided by the students about the online course, guides us in an effective manner.	162.00	3.76	-0.60	0.19	-3.13
Demo Videos are helpful to understand the teaching quality of all video classes	162.00	3.70	-0.57	0.19	-2.98
The Detail Course Videos are very much required	162.00	3.90	-0.84	0.19	-4.42
Video classes with Classroom setup concentrating only the black board is very much effective	162.00	3.27	-0.25	0.19	-1.32
Video Classes with classroom setup covering the entire classroom with all students are effective	162.00	3.16	-0.18	0.19	-0.96
Video classes made in a studio in front of camera is very much preferable	162.00	3.50	-0.39	0.19	-2.04
Video classes made in a studio in front of camera with graphics in background is very much preferable.	162.00	3.48	-0.40	0.19	-2.08
Video classes made in a studio in front of camera with graphics in background and motion design is very much preferable.	162.00	3.53	-0.38	0.19	-2.00
Video classes made in a studio in front of camera including graphics in background and slides are effective to learn	162.00	3.62	-0.49	0.19	-2.58
Video classes made in a studio in front of camera including graphics in background, motion design and Slides are effective to learn	162.00	3.67	-0.46	0.19	-2.43
video classes without instructor, and it includes voice over and animations is effective to learn	162.00	3.14	-0.06	0.19	-0.34
video classes without instructor, and it includes voice over and course slides is effective to learn	162.00	3.11	-0.02	0.19	-0.11
video classes without instructor, and it includes voice over, course slides and graphics are effective to learn	162.00	3.22	-0.20	0.19	-1.05

Annexures -2

Live classes	N	Mean	Skewness	Z

	Statistic	Statistic	Statistic	Std. Error	
Live classes through only webcam is effective	157	3.2548	-.298	.194	-1.54075
Live classes using camera in a classroom setup is very much effective	156	3.4487	-.327	.194	-1.68376
Live Classes with voice over and PPT slides are very effective to learn	157	3.6433	-.460	.194	-2.37546
Sample recorded video about the quality of live classes is very much preferable	157	3.4204	-.356	.194	-1.83599
Screen sharing is very much required in Live Classes	155	3.7032	-.666	.195	-3.41681
Face to Face Interview to solve doubts is very much effective	157	3.7771	-.678	.194	-3.49936
Additional supporting content like PDF, PPT, Word DOCS, Excel Sheets are to be provided along with the Live Classes.	156	4.0769	-1.041	.194	-5.35952
writing on the screen using pen tablet in the Live Classes is very much effective	158	3.7848	-.766	.193	-3.96961
Typing Text on the screen in the live classes is very much effective	156	3.4744	-.416	.194	-2.13943
Both Writing on the screen using pen tablet and typing the text on the screen is very much effective	156	3.5769	-.504	.194	-2.59453
Using of Info-graphic content and educational charts are very much required in the Live Classes	156	3.7821	-.713	.194	-3.6678

Annexures -3

Mock Test	N	Mean	Skewness		Z
	Statistic	Statistic	Statistic	Std. Error	
After watching the video sessions of a particular concept, immediately I prefer to take	162	3.4630	-.286	.191	-1.4993

mock test of that particular concept.					
I prefer to have all verities of questions in mock test	162	3.6543	-.529	.191	-2.77358
Computer Based Test â€" I prefer to have computer Based, Where computer provides all questions randomly in the Mock test	162	3.5309	-.543	.191	-2.84851
Computer Adaptive Test â€" I prefer the computer to decide the difficulty questions and its level to the aspirants.	162	3.4136	-.327	.191	-1.71679
I prefer Low difficulty level questions in the practice mock test	162	3.0123	.056	.191	0.294942
I prefer medium level of difficulty questions in the practice mock test	162	3.3889	-.348	.191	-1.82395
I prefer high level of difficulty questions in the practice mock test	162	3.3580	-.327	.191	-1.71731
Test based on Multiple Choice Questions are preferred.	162	3.5556	-.447	.191	-2.34625
Interactive questions â€" questions with Fill in the Blanks, Match the Following, match fields, questions are asked based on chart, Fill the answers in the text boxes given on the image, giving platform to users to give input of formulas and answers ar	162	3.6667	-.588	.191	-3.08182
Multimedia questions â€" Providing the option to add images for the asked question and giving option to record the oral answers are very important.	162	3.5864	-.433	.191	-2.27137

I give priority for the subject oriented tests to enhance my knowledge	162	3.6975	-.589	.191	-3.08982
Cheating proof - Time Limit is required to every test to avoid cheating	162	3.7593	-.619	.191	-3.24807
Subjective Test - There should be an option to submit the short answer	162	3.7099	-.594	.191	-3.11489
Subjective Test - There should be an option to submit long answers (Essay Type Answers)	162	3.4383	-.343	.191	-1.79876
An Award and Reward is required for the top scorer in an mock test	162	3.6049	-.521	.191	-2.73436
Questions with Images and Videos enhance our analyzing skills in the practice mock test	162	3.6728	-.597	.191	-3.13092

Annexures -4

Assessment of Mock Test	N	Mean	Skewness		Z
	Statistic	Statistic	Statistic	Std. Error	
Formative assessments - I prefer Formative assessments, which provides me the results of every topic wise mock test and helps me to understand my performance in every topic and guides me to identify the area where i need to improve.	155	3.6645	-.508	.195	-2.60714
Summative Assessments - I prefer Summative Assessments, which helps me to analyse the overall performance in the main exams or main mock test. It shows my actual performance in the main mock test or main exam and displays my rank of that exam.	154	3.5519	-.540	.195	-2.7628

Online Quiz: I prefer Online quiz for the assessment which measures my actual performance and my knowledge of the concepts that are taught in the class. The overall grade is also provided in this type of assessment, that helps for comparative analysis.	154	3.6818	-.505	.195	-2.58189
Open ended and essay type questions: I prefer Open ended and essay type of questions, that helps me to provide answers in detail	153	3.3856	-.390	.196	-1.9887
Game type Activities: It is very much preferred where the tests are in the form of game and test takers has to provide answers to the given questions in the required time. It helps us to analyse the risk taking ability, decision making skills and problem	154	3.7273	-.672	.195	-3.43981
Peer Evaluation and Review: Peer Evaluation and Review is very much preferred, It makes the friends of the test takers to evaluate the papers based on the instructions provided by the instructor.	154	3.4805	-.395	.195	-2.02262
Online Interviews: I prefer a direct online interview, that is very easy to exhibit our skills that are required for an interview through online	153	3.5163	-.354	.196	-1.80255
Dialog Simulation: A high preference is given to dialog simulation, where it tests our real-life skills by making us to deal	154	3.5260	-.464	.195	-2.37228

directly with the customers and others				
Online Poll : I prefer this system of evaluation, where feedback is provided in the form of rating, like giving points 1 to 5, by the general audience or the customers about our performance	155	3.5871	-.527	.195	-2.70379
Exhaustive Assessment: I prefer this type of test, which helps us to identify the test reaction time, that is it shows me the time taken to attend each question in the mock test.	154	3.5584	-.460	.195	-2.35526
Comprehensive Evaluation: Multiple Choice questions helps the students in every manner	157	3.5860	-.527	.194	-2.7227
I prefer the results of the test should be provided in the form of obtained percentage, percentile, average Score and overall score	156	3.7692	-.676	.194	-3.47896

Annexures -5

Study Material	N	Mean	Skewness		Z
	Statistic	Statistic	Statistic	Std. Error	
I prefer the methodologies that has to be developed for interactive learning experiences	162	3.7963	-.761	.191	-3.99237
Instructions should be provided about how to use the study materials.	162	3.7840	-.647	.191	-3.39056
Platform should be provided to learn about new technologies , along with its uses.	159	3.8994	-.818	.192	-4.25103
Ensuring the availability of adequate assistance for facilitation of learning from the faculties in the online platform	159	3.8302	-.818	.192	-4.25252

Discussion forum is very much required for support from other students, feedback, and mentoring	159	3.7925	-.749	.192	-3.89123
Course should be designed in such a manner that, the work load should be minimum and learning should be maximum	159	3.8868	-.746	.192	-3.8757
Ensuring that faculty have a working knowledge of the range of student support services offered	159	3.8805	-.841	.192	-4.36793