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Impact of Online Learning Experience on Student Satisfaction Through Student Engagement

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Abstract---The sudden outbreak of the COVID-19 Pandemic has jolted the entire world. The vulnerable effects of this crisis are witnessed by Educational Institutions to a substantial extent. Online teaching-learning is perceived to be a panacea for this situation. The Academic Institutions which were reluctant to adapt to modern technology has shifted from offline to online mode of pedagogy. Consequently, quality enhancement of online teaching-learning has emerged as a salient concern for Educators. The extent to which students are engaged in online learning process and the satisfaction they derive from online learning tend to be crucial indicators of their academic performance and academic achievement. Based on the analysis of related studies, considering the existing issues, this article aims to examine the impact of Online Learning Experience on Student Engagement and its subsequent impact on Student Satisfaction. The study is empirical in nature, the sample of which constitutes 377 College Students in Chennai. The results of the study suggest that Readiness towards Online Learning, Structure of Online Classes and Faculty Support significantly impact the Student Engagement while Behavioural Engagement and Cognitive Engagement have a significant impact on Student Satisfaction.

Keywords---global pandemic, online learning, student engagement, student satisfaction.

Introduction

The COVID -19 Pandemic has brought sea change in the Education Sector across the globe and challenged the teachers to equip themselves with the innovative teaching methods and enhance student's knowledge on the pedagogy. Online learning has emerged as the most popular and inevitable form of education today. It refers to "learning experiences in synchronous or asynchronous environments using different devices (e.g., mobile phones, laptops, etc.) with internet access" Dhawan (2020). The synchronous learning environment encompasses live lectures, real time interaction between learners and teachers and also instant feedbacks. On the other hand, asynchronous environments are not well structured and the course content is made available at different forums.

Online learning or 'e-learning' provides an excellent platform for material delivery unbound by time or location and also allows easy accessibility of instruction at anytime from anywhere Nopa Yusnilita (2020).Learners can easily fit education into their busy lives and learn at their own pace. Further, online learning serves as a cost effective means of professional development by offering world class education to anyone with good internet connection. Researchers have identified that such virtual learning experience enhances the higher order thinking skills, technical skills, time management skills, independence and self-discipline of learners.

However, online learning poses certain challenges to the educational institutions, teachers, and learners. Students find virtual learning to be monotonous and unengaging due to lack of face to face lectures and personalized teaching & learning. The extent to which the Educational Institutions maintain the quality of education amidst the scenario reveals their adapting capabilities. A good online learning experience would eventually contribute to better Student Engagement and Student Satisfaction thereby resulting in improved academic performance and success. Literature confirms the need for studying the impact of Online Learning Experience on Student Engagement and its subsequent impact on Student Satisfaction with respect to College Students in Chennai. Hence, this study has been carried out to fill the research gap.

Review of literature

Ram Gopal, Varsha Singh and Arun Aggarwal (2021) researched "Impact of online classes on the satisfaction and performance of students during the pandemic period of COVID 19." 544 University students pursuing Management courses constituted the sample for the study. Mean and Multiple Regression were used for the purpose of analyzing the data. The findings suggested that instructor quality, course design, timely feedback and learners' expectations exerted a positive influence on student satisfaction, which in turn positively impacted the student performance. Of all the factors, instructor quality was found to have the most prominent impact on satisfaction, which highlights the need for an instructor to be highly efficient during online classes.

The study conducted by Ellen Chung, Geetha Subramaniam and Laura Christ Dass (2020)on "Online Learning Readiness Among University Students in

Malaysia Amidst Covid-19” aimed at investigating the readiness towards online learning, preferred methods and challenges in online learning. Sample comprised 399 students pursuing online courses. Frequency, Mean and t-test were the statistical tools used for data analysis. The results showed that female and degree students were more ready to learn online than the other groups. Most students opted for pre-recorded lectures available in You Tube and Google Classroom. Lack of reliable internet connection and complexity in understanding the lessons were perceived as challenges in e-learning.

B. De Villiers and A. Werner (2019) in their study “The Relationship between Student Engagement and Academic Success” aimed to determine student behaviours and institutional factors that impact the engagement and academic success. Sample comprised 50 first- year students from Nelson Mandela Metropolitan University. Descriptive Statistics (Mean& Standard Deviation) and Inferential Statistics (t-values and Pearson’s Correlation) were computed to analyze the data. The study confirmed that academic focus, friendly interactions between student and staff, and social integration were instrumental in enhancing the student success.

Armando P. Delfino (2019) conducted a study on “Student Engagement and Academic Performance of Students of Partido State University.” The aim was to measure the extent of learner engagement and analyze the factors that affect engagement of 305 students from College of Education of Partido State University. Statistical tools used for data analysis include Frequency count, Mean, Pearson Moment Correlation, and Multiple Regression. The research outcome showed that family, school and teachers together contributed to student engagement in a significant manner. Moreover, Student Engagement (Behavioural, Cognitive and Emotional) were found to have significant positive relationships with academic performance.

Florence Martin and Doris U. Bolliger (2018) carried out a research on “Engagement Matters: Student Perceptions on the Importance of Engagement Strategies in the Online Learning Environment” amongst 155 University Students in United States. Frequency, Weighted Mean analysis, t-test, and ANOVA were the tools used for data analysis. Significant differences were found to exist amongst the respondents with respect to gender, age and years of online learning experience. The findings confirmed that Learner –to- Instructor Engagement was the most valued form of learners’ engagement. Furthermore, initiating icebreaking discussions was identified as the most effective strategy to enhance a friendly and supportive learning environment.

A research was undertaken by Julie A. Gray and Florida Melanie DiLoreto (2016) on “The Effects of Student Engagement, Student Satisfaction, and Perceived Learning in Online Learning Environments.” Data was collected from 216 University students who enrolled in online leadership program in United States. The objective of the study was to determine the impact of independent variables (course structure, learner interaction and instructor presence) on dependent variables (improved student learning and satisfaction) through the mediating variable (student engagement).

Descriptive analysis (Mean and Standard Deviation) and inferential analysis (Correlation and Regression) were performed. The study revealed the significant positive impact of independent variables on mediating and dependent variables, and that of mediating on dependent variable, with the exception of student interaction on their satisfaction.

Methodology

The study is empirical, based on the survey method. Primary data was gathered using a Structured Questionnaire through Google forms, which comprised statements pertaining to demographic factors, Online Learning Experience, Student Engagement and Student Satisfaction. The responses were measured on a Five-point Likert Scale ranging from Strongly Agree (5) to Strongly Disagree (1). The sample constitutes 377 College students pursuing undergraduate and postgraduate courses in various Arts and Science Colleges in Chennai. Secondary data was collected from relevant journals and websites. The information provided in the Questionnaire formed the basis for Statistical Scrutiny for further study. Statistical Analyses were performed using SPSS 21. Cronbach Alpha coefficients were calculated to assess the reliability of the constructs of the study. The overall Cronbach Alpha value was found to be 0.967 suggesting high reliability.

The study aims to analyze the impact of Online Learning Experience on Student Engagement and its subsequent impact on Student Satisfaction. The factors of Online Learning Experience include Readiness towards Online Learning, Technical Availability, Structure of Online Classes and Faculty Support. Behavioural Engagement, Cognitive Engagement and Emotional Engagement constitute the factors of Student Engagement. Based on the objectives, the following hypotheses were framed.

- Hypotheses 1-4: There is a significant relationship between Online Learning Experience (Readiness towards Online Learning Experience, Technical Availability, Structure of Online Classes and Faculty Support) and Student Engagement.
- Hypotheses 5-7: There is a significant relationship between Student Engagement (Behavioural, Cognitive and Emotional Engagement) and Student Satisfaction.
- Hypotheses 8-11: There is a significant impact of Online Learning Experience (Readiness towards Online Learning Experience, Technical Availability, Structure of Online Classes and Faculty Support) on Student Engagement.
- Hypotheses 12-14: There is a significant impact of Student Engagement (Behavioural, Cognitive and Emotional Engagement) on Student Satisfaction.

Analysis and Interpretation

Table 1

Depicts the information regarding demographic profile of the respondents.

Demographic Variables	Categories	Percentage
Age	17-19 years	67
	20-22 years	33
Education	Undergraduate	60
	Postgraduate	40
Monthly Family Income	Less than 50,000	55
	50,000 – 1,00,000	16
	1,00,000 – 1,50,000	12
	1,50,000 – 2,00,000	10
	Above 2,00,000	7

Source: Primary data

It can be understood from the above table that age of most respondents (67%) ranged between 17 to 19 years. Majority of them (60%) are pursuing Undergraduate degree while the monthly family income of most respondents (55%) is below 50,000. The Weighted Mean Scores for the Constructs of the Study has been illustrated in Table-2.

Table 2

Weighted Mean Scores

Constructs	Weighted Mean
Online Learning Experience	4.02
Student Engagement	3.98
Student Satisfaction	3.89

Source: Primary Data

From the above table, it can be inferred that the respondents have agreed to the statements measuring Online Learning Experience since the Weighted Mean Score for the construct is above 4. This implies that the students agreed that they have a great experience in online learning. Further, it can be understood that the respondents have almost agreed to the statements measuring Student Engagement and Student Satisfaction since the Weighted Mean Scores for these constructs are around 4. This denotes that the students are well involved in online classes and are satisfied with their learning experience in an online environment. The relationship between Online Learning Experience and Student Engagement has been presented in Table -3.

Table 3
Relationship between Online Learning Experience and Student Engagement

Factors of Online Learning Experience	r Value
Readiness towards Online Learning	0.732**
Technical Availability	0.521**
Structure of Online Classes	0.646**
Faculty Support	0.684**

Source: Primary Data

Note: ** denotes Significance at the 0.01 level (2-tailed)

It can be seen from the above Table that the relationship between all four factors of Online Learning Experience and Student Engagement are significantly positive at 1% level. Therefore, Hypotheses 1-4 are accepted. Of all the factors, Readiness towards Online Learning (0.732) has the strongest positive relationship with Student Engagement. The findings indicate that the students' inclination towards online learning, easy access to required technology, design of online classes, and guidance and support provided by teachers are positively related to their involvement in class. The better the Online Learning Experience, higher would be the Student Engagement and vice versa. The relationship between Student Engagement and Student Satisfaction has been depicted through Table -4.

Table 4
Relationship between Student Engagement and Student Satisfaction

Factors of Student Engagement	r Value
Behavioural Engagement	0.609**
Cognitive Engagement	0.614**
Emotional Engagement	0.543**

Source: Primary Data

Note: ** denotes Significance at the 0.01 level (2-tailed)

It can be understood from the above table that the relationship between all three factors of Student Engagement and Student Satisfaction are significantly positive at 1% level. Therefore, Hypotheses 5-7 are accepted. Amongst the three factors, Cognitive Engagement (0.614) has the most significant positive relationship with Student Satisfaction. The findings indicate that the students' active participation in class, curiosity and interest to learn, emotional affinity in class are positively correlated with satisfaction in e-learning. Therefore, better Student Engagement leads to superior Student Satisfaction and vice versa. The impact of Online Learning Experience on Student Engagement has been depicted in Table - 5.

Table 5
Impact of Online Learning Experience on Student Engagement

Particulars	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.776	0.137		5.660	0.000
Readiness towards Online Learning	0.420	0.047	0.438	8.982	0.000**
Technical Availability	0.014	0.033	0.019	0.442	0.650(NS)
Structure of Online Classes	0.105	0.037	0.142	2.858	0.005**
Faculty Support	0.255	0.045	0.283	5.685	0.000**
R Square	0.615				
F	148.862				
P	0.000**				

Source: Primary Data

Note : ** denotes Significance at the 0.01 level (2-tailed)

NS denotes Not Significant

The Regression model explains that only 61.5% ($R^2 = 0.615$) of variance in Student Engagement is caused by Online Learning Experience.

The Regression Equation Y is,

$$\text{Student Engagement} = 0.776(\text{Constant}) + 0.420X_1 + 0.014 X_2 + 0.105 X_3 + 0.255 X_4$$

Where,

X_1 - Readiness towards Online Learning

X_2 - Technical Availability

X_3 - Structure of Online Class

X_4 - Faculty Support

The above Table shows that $p < 0.01$ for Readiness towards Online Learning, Structure of Online Classes and Faculty Support at 1% level of significance. Hence, there is a significant positive impact of the above factors on Student Engagement. Therefore, Hypotheses 8, 10 and 11 are accepted. Amongst all factors, Readiness towards Online Learning (0.420) has the highest impact on Student Engagement. It can also be observed that $p > 0.05$ for the factor Technical Availability at 5% level. Hence there is no significant impact of the same on Student Engagement. Therefore, Hypothesis 9 is rejected. The results indicate that the learners' willingness for e-learning, appropriate duration & layout of online classes, and motivation & guidance provided by teachers stimulates the level of Student Engagement to a greater extent.

Table 6
Impact of Student Engagement on Student Satisfaction

Particulars	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.020	0.245		0.083	0.934
Behavioural Engagement	0.424	0.097	0.297	4.385	0.000**
Cognitive Engagement	0.401	0.101	0.293	3.988	0.000**
Emotional Engagement	0.157	0.089	0.111	1.767	0.078(NS)
R Square	0.421				
F	90.319				
P	0.000 **				

Source: Primary Data

Note : ** denotes Significance at the 0.01 level (2-tailed)
NS denotes Not Significant

The Regression model explains that only 42.1% ($R^2 = 0.421$) of variance in Student Satisfaction is caused by factors of Student Engagement.

The Regression Equation Y is,

$$\text{Student Satisfaction} = -0.020(\text{Constant}) + 0.424X_1 + 0.401 X_2 + 0.157 X_3$$

Where:

X_1 - Behavioural Engagement

X_2 - Cognitive Engagement

X_3 - Emotional Engagement

The above Table confirms that $p < 0.01$ for Behavioural Engagement and Cognitive Engagement at 1% level. Therefore, there is a significant positive impact of the above mentioned factors on Student Satisfaction. Therefore, Hypotheses 12 and 13 are accepted. Amongst all factors, Behavioural Engagement (0.424) has the most significant impact on Student Satisfaction. It is evident that $p > 0.05$ for Emotional Engagement at 5% level. Hence there is no significant impact of Emotional Engagement on Student Satisfaction. Therefore, Hypothesis 14 is rejected. The findings indicate those students who exhibit positive behaviour and involvement in class, contribute innovative ideas to discussions and make efforts to derive the best out of the course experience a strong sense of fulfilment during learning.

Limitations of the study

- The study was confined to 377 College students in Chennai.
- Students from Arts & Science Colleges alone constituted the sample for the study.
- Questionnaire method of data collection has its own limitations and the same are relevant to this study.

- The study was cross sectional in nature, confined to a specific period of time.

Conclusion

This study examined the impact of Online Learning Experience on Student Engagement and its subsequent impact on Student Satisfaction. Significant positive relationships between Online Learning Experience and Student Engagement, and Student Engagement and Student Satisfaction were found. Significant positive impact of Readiness towards Online Learning, Structure of Online Classes and Faculty Support on Student Engagement and that of Behavioural Engagement and Cognitive Engagement on Student Satisfaction were also found. Based on the research outcome, it may be suggested that both students and teachers shall adopt certain practices that would foster students' involvement in an online learning environment. It is highly imperative for the students to be adaptive to online learning, being highly attentive & persistent in class, contribute to class discussions and also raise questions to gain better clarity about the concepts. These measures would obviously add ease to learning and help for better retention of concepts. Teachers shall follow student centric teaching methods, address individual differences amongst learners, use different patterns of assessment and also provide adequate guidance and support to students as it would facilitate effective and happy learning. Thus, the collective efforts of the students and teachers would naturally contribute to better Student Engagement and Satisfaction, thereby resulting in improved student performance and academic achievement eventually.

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