

Online Learning and Student Engagement: An Analysis of the Effectiveness of Virtual Classrooms

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Abstract: This study assessed the level of commitment and engagement of students in online classes in order to understand the relationship between the two variables of commitment and engagement. It also evaluated some of the challenges that affect students' engagement in online classes. The study was conducted among the students and teachers from Hanjiang Normal University. It used a mixed-method research approach by utilizing both survey questions and interview questions in which the survey analysis was done using mean, standard deviation, and Pearson's correlation, while the interview questions were evaluated using thematic analysis. 250 students participated in the quantitative survey, while 10 teachers participated in the interview process. Based on the research findings, the students are very committed to relating what they're learning in online classes to real life situations, moderately committed to construct knowledge in online classes, and less committed in applying what they learned to real life situations. The students' participation in individual group activities indicate that they are highly engaged. However, they are less engaged in their participation in online activities. There is no significant relationship between online learning commitment and student engagement. Students often struggle to manage their time effectively which in turn leads to procrastination. Students are given an amount of time to complete a set of tasks and assignments. Based on these findings, a strategic plan was proposed to increase the level of engagement in online classes.

1. Introduction

The advent of technology has revolutionized the way we approach education, leading to the rise of online learning and virtual classrooms. With the increasing demand for flexible and accessible learning options, virtual classrooms have become an important aspect of modern education. However, the effectiveness of virtual classrooms in promoting student engagement and facilitating learning remains a topic of debate. This research aims to analyze the impact of virtual classrooms on student engagement and to examine the factors that contribute to their effectiveness.^[1] By exploring the strengths and weaknesses of virtual classrooms, this study will provide insights into the future of online learning and the role it will play in shaping the education landscape.

In this study, we aim to examine the impact of virtual classrooms on student engagement and to

explore how to improve the effectiveness of online learning. By conducting a comprehensive analysis of the current state of virtual classrooms and the challenges they pose, we aim to provide insights that can inform future research and policy discussions. This study considered the perspectives of both students and teachers, and was conducted in a specific geographical location. The results of this study will contribute to the advancement of knowledge in the field of online learning and virtual classrooms, and will inform efforts to improve the quality of education for students in the age of the COVID-19 pandemic and beyond^[2].

2. Background of the Study

The background of this study is rooted in the growing trend of online learning and the increasing use of virtual classrooms in education. With the advancement of technology, online learning has become more accessible, flexible and widespread, leading to an increased interest in understanding its impact on student engagement and learning outcomes.

Previous studies have produced mixed results, with some finding that virtual classrooms are effective in promoting student engagement and learning, while others have found that they are less effective than traditional in-person instruction. ^[3]Given the rapidly evolving nature of online learning and virtual classrooms, it is important to continue to study and understand their impact on student engagement.

3. Statement of the Problem

(1)The level of online commitment of the students as regards to knowledge construction is high/low/moderate.

(2)The ability of students to relate to real-life situations in online learning is high/low/moderate.

(3)The application of online learning to concrete situations is high/low/moderate.

(4)The level of student engagement in online learning is high/low/moderate.

(5)The skills of students in obtaining teaching and learning materials online are high/low/moderate.

(6)The participation of students in online activities is high/low/moderate.

(7)The performance of students in individual group activities in online learning is high/low/moderate.

(8)There is a significant relationship between online learning commitment and student engagement.

(9)The challenges faced by students in their online learning engagements include lack of internet access, technical difficulties, lack of motivation, and time management issues.

(10)Based on the results of the study, the best strategies proposed to increase the level of engagement in online learning include providing clear instructions and guidelines, incorporating interactive and collaborative activities, offering personalized support and feedback, and creating a supportive online learning community.

4. Research Design

This study will employ a mixed-methods approach, using both quantitative and qualitative data to gain a comprehensive understanding of online learning.comparativ ecorrelational descriptive research design

5. Research Instruments

To achieve the research objectives, the present research adapted questionnaire from previously formulated scales:

6. Questionnaire

The present research is based on questionnaires adapted from previous research studies which are relevant for the purpose of the current study. The questionnaire was adapted from five (5) different survey questions.

7. Focus Group Discussion

With the use of a focused group discussion, the research was able to gather the teachers' observations regarding the online learning of the students of Hanjiang Normal University. The teachers shared their thoughts and observations based on their experiences with the students.

For analyzing the FGD, the research used a thematic analyses procedure to collect themes from the teachers' observations by generating the initial codes, and formulating themes based on the generated codes.

8. Data Gathering Procedure

The research sent a letter of request to the president Hanjiang Normal University asking for the permission to conduct this study. Upon the president's approval, the questionnaire was distributed to the students of Hanjiang Normal University based on a purposive sampling method.

After the respondents have completed the questionnaire, the researcher assessed the collected data, and used that to conduct an interview – a focused group discussion which was used to buttress the results from the students.

The proposed program and output from this study is expected to be implemented or practiced in Hanjiang Normal University within one year of the study – between January to August 2023.

9. Statistical Analysis of Data

In the data analyses procedure, the research used the following statistical treatments at 0.05 level of significance. The package/software used for the statistical analyses is Statistical Package for Social Sciences (SPSS) software.

9.1 Frequency Count and Percentage

In analyzing the profile of the student respondents, the research used frequency count and percentages to assess the result collected in terms of age, gender, and year level.

9.2 Weighted Mean

This is used to evaluate the students' respondents' ability to use social learning and online courses.

In addition, the weighted average value is also used to evaluate the learning quality of students in online courses to improve the effectiveness of online courses.

9.3 Pearson Correlation will be utilized for the correlation between online learning commitment and student engagement

The results were interpreted as follows

Weight	Scale/Range	Description/Interpretation
4	3.51-4.00	Strongly Agree/ Very Committed
3	2.51-3.50	Agree/ Committed
2	1.51-2.50	Disagree/ Less Committed
1	1.00-1.50	Strongly Disagree/ Not Committed

Qualitative data collected from the interviews and focus groups will be analyzed using a thematic analysis approach to identify common themes and patterns

10. Decision Criteria

The 0.05 threshold of significance was used for the hypothesis analysis. If the computed significance value was larger than the set value of 0.05, the null hypothesis was accepted; otherwise, it was rejected.

11. Ethical Consideration

The confidentiality of this research has been carefully examined. The researcher ensured that the policies and regulations of Adamson University were followed in terms of the respondents' involvement in this study. And the data collection restrictions of Adamson University have been well grasped by the participating students and instructors of Hanjiang Normal University's.

Firstly, the researcher ensured that the respondents consented to the study after informing them the study criteria, the purpose, and where it will be used. The researcher ensured that all participants were not coerced as the study was based on a voluntary participation of the selected participants. The identity and answers of the respondents remain confidential as this will only be used for academic purposes in compliance with the Data Privacy Act of 2012. The safety of respondents was also considered as the present study will cause no harm to do participants.

Lastly, by observing all the required ethical procedures for this study, the researcher ensured that all consent letters were sent and approval were accepted with signatories of the necessary office before conducting the study. Also, the participants has the mandate to withdraw from the study if after explaining the requirements and they choose not to consent. ^[4]

12. Results, Analysis, And Interpretation

This chapter discusses the data that was gathered, the conclusions, and the analysis in connection to the problem statement. The researcher's interpretations and inferences from factual data and experiences will also be discussed.

12.1 Profile of the Respondents

Tables 1-2 present the profile of the respondents in terms of sex and age.

Table 1 presents the demographic profile of the respondents in terms of their sex. With 250 students taking part in the study, there were 122 male students (48.8%) and 128 female students (51.2%). Results showed that there were more female respondents who participated in this study which was conducted at Hanjiang Normal University compared to their male counterparts.

Table 1: Frequency Distribution of the Student Respondents' Profile in Terms of Sex

Category		n (%)	
Sex			
	Male	122	(48.8)
	Female	128	(51.2)

Table 2: Frequency Distribution of the Student Respondents' Profile in Terms of Age

Category		n (%)	
Age (years)			
	18 - 20	85	(34.0)
	21 - 23	83	(33.2)
	24 and above	82	(32.8)

In Table 2, based on the composition of the student-respondents according to their age, it revealed that 85 respondents (34.00%) were between the ages of 18-20 years old, 83 respondents (33.20%) were ages 21-23 years old, and 82 respondents (32.80%) were 24 years old and above. Majority of the students are 18-20 years old, followed by those that are 21-23 years old, and those that are 24 years old and above.

12.2 Level of the Online Commitment of the Students

Table 3: Assessment of the Level of the Online Commitment of the Students in terms of Knowledge Construction

Statements	Mean (SD)	Interpretation	Rank
Knowledge Construction			
Set some tasks to help develop critical thinking skills	3.02 (0.80)	Agree	2
Discuss material skills presented in lectures or from resource lists with peers	3.05 (0.77)	Agree	1
I try to recall new information to something I know about the topic	2.90 (0.80)	Agree	5
I solve problems and complete activities that are difficult	2.94 (0.84)	Agree	4
Gather additional information when needed	2.99 (0.81)	Agree	3
MEAN SCORE	2.98 (0.36)	Committed	

SD = standard deviation. 1.00 – 1.75 Strongly Disagree/Not Committed; 1.76 – 2.50 Disagree/Less Committed; 2.51 – 3.25 Agree/Committed; 3.26 – 4.00 Strongly Agree/Very Committed

Table 3 made an assessment of the students' level of commitment in online classes in terms of their knowledge construction. As shown in the findings, the students' responses suggests that they are committed in online classes as regards to their knowledge construction.

The indicator "Discuss material skills presented in lectures or from resource lists with peers" got the highest assessment score of 3.05 which suggests that the student-respondents agree. Meanwhile the indicator "I try to recall new information to something I know about the topic" got the least

score of 2.90 which also suggests that the respondents agree.

The assessment of the students' level of online commitment based on knowledge construction shows that the students are committed in setting tasks to help develop critical thinking skills, discussing material skills presented in lectures or from resource lists with peers, recalling new information to something they know about the topic, solving problems and completing activities that are difficult, and gathering additional information when needed.

According to Amir et al., (2020), since online learning platforms and live streaming are mostly focused on theoretical learning, learners in technical professions are impacted. Online learning results in a low level of knowledge development, with practical training being limited due to the inability to utilize laboratory facilities (Oyedotun, 2020).

13. Summary of Findings

13.1 Level of Online Commitment of the Students

The students were found to be moderately committed in online classes ($M=2.99$). The highest ranked dimension is ability to relate to real life situation with a mean of 3.49 which suggests that the students strongly agree indicating that they are very committed to relate what they learned in online classes to real life situations. Moreover, on knowledge construction, the students are committed with a mean of 2.98, while they are less committed in the application of what they learned to real-life situations with a mean of 2.49.

13.2 Level of Student Engagement in Online Learning

The students were found to be moderately engaged in the online learning ($M=3.03$). Their participation in individual group activities got a mean of 3.50 which indicate that the students are highly engaged. This is followed by their skills in obtaining teaching and learning materials with a mean of 3.49 suggesting that the students are highly engaged in it. The least dimension is their participation in online activities with a mean of 2.09 suggesting that the students are less engaged in participation in online activities.

13.3 Relationship between Online Learning Commitment and Student Engagement

Based on the assessment of the relationship between online learning commitment and student engagement, there is no significant relationship between online learning commitment and student engagement.

13.4 Challenges Met by the Students Related to their Online Learning Engagement

Some of the identified challenges based on the thematic analysis are lack of immediate feedback and interaction, uncondusive learning environment, the feeling of confusion, frustration and isolation, inability to manage their time effectively, and inability to properly use and navigate the technology and platforms required.

14. Conclusion

Based on the findings of this study, the researcher came up with the following conclusions:

The students are very committed to relating what they're learning in online classes to real life situations, moderately committed to construct knowledge in online classes, and less committed in applying what they learned to real life situations.

The students' participation in individual group activities indicate that the students are highly engaged. Their skills in obtaining teaching and learning materials suggest that they are highly engaged in it. However, they are less engaged in their participation in online activities.

This indicates that the students' level of commitment in online classes does not affect nor have any impact on their level of engagement.

Online classes do not have as much structure as the traditional face to face classes. Students often struggle to manage their time effectively which in turn leads to procrastination. Students are given an amount of time to complete a set of tasks and assignments. Ineffective management of their time causes them to fall behind and procrastinate on the given tasks which in turn affect how committed they are to the class.

Based on the study findings, a strategic plan was proposed to increase the level of engagement in online classes.

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