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Student Language Learning Engagement, Interaction, and Satisfaction in Ubiquitous Learning Environment

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Abstract
Numerous studies have shown that course organization and layout, student engagement, learner interaction, and instructor presence significantly contribute to student satisfaction and perceive learning in online learning environments through various, limited research to assess the existing mediational relationship in online learning environments COVID 19 pandemic era. This study contributed to information about online education and the factors that influence students' success and perceived learning. The researchers investigated the associations between student satisfaction and perceived learning, as well as learner engagement. Results showed that students' participation has a major impact on their aspirations for their learning. It was discovered that student engagement partially mediates the impact of instructor presence on student satisfaction.

The course's design, learner interaction, and instructor presence significantly affect how students perceived their online learning. Additionally, student engagement mediated the relationship between instructor interaction and learner activity and expected student learning. The results of this study will guide educational practitioners to better cater to the needs of the students.

Keywords: *Learning Engagement, Language Learning, Satisfaction, Digital Learning Environment*

Introduction

Distance education's world is shifting. As more colleges deliver online classes, professors must understand the changing characteristics of online learning environments, such as course layout, learner engagement, and teacher appearance, particularly this COVID 19 pandemic era. Although many studies employed several methodologies, one, particularly, served as a blueprint for planning and constructing this study. This study aimed to determine the impact of each of these variables on students' expectations of their learning and satisfaction. Additionally, student participation was speculated to function as a moderating power. This study aims to reassure practices for increasing retention and the standard of online teaching and learning, especially in light of the COVID 19 Pandemic.

Similarly, students who had a positive history of social involvement associated with expected learning performed well on the learning assessment (Juan, 2021, Panigrahi, Srivastava, & Sharma, 2018, Yoon, Lee, & Jo, 2021). They finished by emphasizing the critical nature of the student-teacher partnership. Consequently, supportive learning experiences and active student participation are vital components of student learning and retention. Shah et al. (2021) asserted that openness in course design, communication with professors, and positive dialogue among course participants contributed significantly to students' satisfaction and perceived learning. Though several studies on student participation in online learning environments have been undertaken, it was discovered that students self-reported improved learning, stronger social skills, and increased interest in the learning process (Corcoran et al., 2018, McNaughton, et al, 2018, Qureshi, et al, 2018, Sousa & Rocha, 2019, Tseng, et al, 2019).

Leaners' Interaction

One of the challenges of online schooling is that students feel disconnected from their classmates and instructors. Through addressing a variety of topics related to real-world issues and allowing students to connect the real, in this case, their professional experience, to the theoretical, the course content, students become more involved in the course discussions and assignments, as well as their peers (Darling-Aduana, 2021, Galikyan & Admiraal, 2019, Jung & Lee, 2018, Martin, Wang, & Sadaf, 2018).

Additionally, teachers may build rapport with students by providing constructive feedback that highlights their achievements and points out growth opportunities. Providing students with alternatives or a measure of adaptability may benefit from a more personalized instructional experience. In summary, teachers must have the skills required to structure a classroom that

fosters social interaction, strengthens rigid curriculum standards, and fosters independent learning ability.

Paton, Fluck, & Scanlan (2018) addressed a variety of strategies for enhancing student participation in online classrooms, including promoting critical reflection, delivering engaging and enjoyable tutorials, exchanging biographical posts (both teachers and students), offering positive feedback on student assignments, integrating stories into discussions, and maintaining a consistent course schedule or organization. It is important to model metacognitive skills to motivate students to contribute more comprehensive comments and opinions to online discussions.

As students discuss their perspectives, assumptions, and hypotheses, the instructor should encourage them to investigate various alternative perspectives and research-based methods (Cheng & Xie, 2021, Jill et al., 2019, Xing et al., 2019).

Learners should be given sufficient time to investigate discussion topics, especially when critical thinking is needed to foster and articulate their thoughts deeper. This degree of thought and time commitment enables students to have more sustained interaction with their peers. Another study discovered that the amount of human touch in the classroom was the strongest indicator of student grades; students in low-interaction courses received almost one letter grade fewer than students in high-interaction courses (Atapattu et al., 2019, Kim & Jeong, 2018, McPartlan, et al., 2021, Weinhardt & Sitzmann, 2019).

Learners' Satisfaction

Numerous surveys have been undertaken to assess student satisfaction in conventional and online settings. It was hypothesized that students might assign acceptable grades to courses and instructors if they believed their professors interacted appropriately, facilitated or respected their learning, structured the course effectively, showed involvement in and appreciation for students' learning and success, and correctly evaluated their work (Coussement, et al, 2020). It was classified student satisfaction into many categories, including the educational value of the content, the teacher's excitement, rapport, organization, engagement, coverage, and appraisal. Another research discovered that students who were paired with their peers and offered thorough input and involvement from teachers reported being satisfied with their educational experiences (Almaghaslah et al, 2018, Shoufan, 2019). Four variables contribute to student success in online courses: engagement and contact with peers and teachers, time spent on tasks, productive and committed learning, and peer cooperation (Bdair, 2021, Johnston, et al, 2018, Subhash & Cudney, 2018, Zarzour, Bendjaballah, & Harirche, 2020). Another research linked students' experiences of group and instructor involvement in online classes to audio feedback received asynchronously (Noguera, et al, 2018). They compared their findings to those obtained from students who received feedback via text and received feedback via audio. Students expressed greater satisfaction for embedded asynchronous audio feedback when opposed to text-based evaluations (Huang & Hew, 2018). Students rated audio input as more successful than written feedback because the nuance of conversation was more apparent. Their teachers seemed to care more for them. They were three times as likely to incorporate the material or make

improvements to this form of feedback. Numerous studies have shown that course organization and layout, student engagement, learner interaction, and instructor presence all significantly contribute to student satisfaction and perceive learning in online learning environments through a variety of mechanisms (Al Mamun, Lawrie & Wright, 2020, Chenet al, 2018, Cohen, et al, 2018, Panigrahi, et al, 2018, Tsai, et al., 2018, Wang, 2017, Zhang & Liu, 2019), but no research has been performed to assess the existing mediational relationship.

Research Objectives

Generally, this study is guided with the general objectives of ascertaining the interplay of Student Language Learning Engagement and Satisfaction in a Ubiquitous Learning Environment. It specifically aims to address the following research objectives: (1) determine students level of language learning engagement; (2) assess the language students satisfaction in a digital learning environment; (3) explore the relationship between students' language learning engagement and satisfaction. Lastly, (4) ascertain the mediating factors of students' language learning engagement in a ubiquitous learning environment.

Hypotheses

It is asserted that perceived interest in learning and student satisfaction are inextricably linked. Student encouragement is a function of learner interaction and instructor engagement, which results in perceived student achievement and happiness. This study aimed to ascertain how these variables affected student learning and satisfaction. Finally, it sought to determine if student involvement served as a moderating force. Consequently, we hypothesized that (1) student engagement mediates the impact of learner interaction and instructor participation on perceived student learning and student satisfaction, and (2) learner interaction has a statistically significant effect on both perceived student learning and student satisfaction.

Methodology

Research Design

To achieve a better understanding of the relationships between course structure, learner engagement, student performance, and instructor presence, as well as student satisfaction and perceived student learning, a measurement-of-mediation design was used in conjunction with the bootstrap mediation studies performed by Baron and Kenny (1986) and Shrout and Bolger (1994). The researchers conducted their analysis using a cross-sectional design and a survey methodology. Independent variables included course design and organization, learner engagement, and instructor presence. The dependent or outcome variables in this analysis were improved student learning and achievement, with the idea being that student presence acted as a mediating variable.

Sample

Graduate students studying in an online educational learning program in an Asian University were the study participants. 243 students out of 654 invited to participate were the respondents of the survey. To ensure students' safety and confidentiality, the researchers made the academic adviser for the program give them an email address. The studies included participants who completed at least 85 percent of the questionnaire. Multiple regression techniques were used to fill in some missed values for residual assets. The researchers employed a method known as systematic random sampling for their study. After submitting a formal request to the administration, requesting the official list of teachers was quickly granted. Calculated with a 5-percent margin of error and 95 percent confidence level, the sample was calculated using the free online Raosoft sampling calculator. The distribution rate was calculated using a 50-percent distribution rate.

Meanwhile, the systematic sampling method was used to choose the research samples. Three were the random start number for instructor replies and five being the random start number for student answers, as shown by the table below. Participation in the study was voluntary for both groups of individuals, who gave their informed permission before participating. Participants were eligible to participate in the research if they participated in at least one online course during the first semester of 2020. The study focused on students completing a course online in an Asian university. One hundred of the respondents had taken at least six of the program's online classes. The plurality of participants are female, are between the ages of 25 and 35. Many mentioned that they wanted to graduate during the next school year and chose this curriculum due to its flexibility and ease.

Procedures

The researchers created an instrument by modifying artifacts from different established tools to collect data about user success and learning outcomes from currently enrolled online graduate students. A cross-sectional approach using survey methodology was employed.

Instrumentation

The Student Learning and Satisfaction in Online Learning Environments Instrument (SLS-OLE) was created after a study of a previously developed instrument and analysis (Eom et al., 2006), as well as various studies on online learning environments, student participation, satisfaction, and learning, instructor attendance, and learner interaction. Following the instrument's pilot trials, some components were reworded, and new pieces were introduced. A positively-packed rating system was used to obtain outcomes that did not violate the principle of normality and to increase response variability.

Data Analysis

Our first step of research included calculating descriptive statistics and bivariate associations for each component in our sample. Our sample's informative statistics indicated that the respondents

have very high assessment on their language learning interaction (X=4.87, SD=0.47), Student engagement (X=4.65, SD= 0.15), Student satisfaction (X=4.87, SD=0.13), and Perceived student learning (X=4.34, SD=0.43). The data shows that the students' favorable responses on the identified variables.

Table 1. Relationship of the Variables

	Mean	Std. Deviation	Interpretation
Learner Language Interaction	4.87	0.45	Very High
Student Engagement	4.65	0.15	Very High
Student Satisfaction	4.87	0.13	Very High

Legend: *4.20-5.00: Very High (VH)/ Strongly Agree (SA); 3.40-4.19: High (H)/ Agree (A); 2.60-3.39: Moderate (M)/ Undecided (U); 1.80-2.59: Low(L)/ Disagree (D); 1.00-1.79: Very Low (VL)/ Strongly Disagree (SD)*

As shown in Table 2, it revealed that learners' language interaction and student engagement, and student satisfaction have a significant relationship. All other correlations were significant and moderately strong.

Table 2. Relationship of the Variables

	Learner Language Interaction	Student Engagement	Student Satisfaction
Learner Language Interaction	1	0.58**	0.76**
Student Engagement	0.67**	1	0.65**
Student Satisfaction	0.78**	0.89**	1

** Correlation is significant at the 0.01 level (2-tailed).

Results

The researchers developed hypotheses using publicly accessible scientific evidence. As such, the researchers hypothesized that both student and instructor participation would have a statistically significant impact on student's academic objectives and satisfaction with their education. Furthermore, the researchers hypothesized that student engagement modifies the relationship between learner communication and instructor presence and student expectations of learning and satisfaction. There must be a positive correlation between the predictor and the dependent or outcome attribute for the interaction to continue. Second, the discrete or indicator variable must account for a substantial portion of the variance in the mediating variable. Thirdly, the mediating variable must cover a sizable portion of the dependent or outcome variable's volatility. Finally, given the volatility associated with the mediator and the dependent or outcome variable, the relationship between the predictor variable and the dependent or outcome variable may be even lower. Both techniques were included in this study, as well as mediation experiments. The

researchers discovered that course composition, learner interest, and instructor presence both significantly impact students' expectations and satisfaction with their learning.

Additionally, student perceptions of learning and satisfaction were important statistically. Furthermore, while participation has a statistically significant impact on perceived student performance, it has a marginal effect on perceived student satisfaction, as previous researches have shown (Parahoo, et al, 2016, Gray & DiLoreto, 2016, Kuo, et al, 2014). Finally, instructor participation has a statistically significant impact on students' learning and satisfaction goals (p.001).

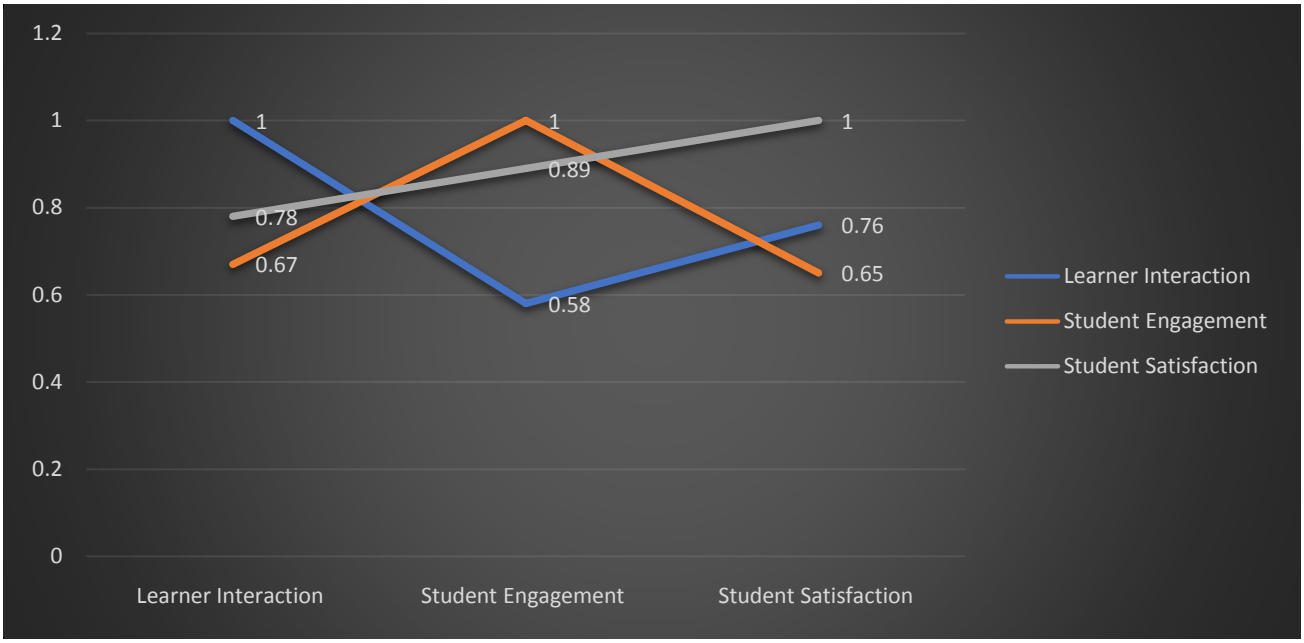

Figure 1. Diagram of Hypothesized Relationships

* significant at .05; ** significant at .01; *** significant at < .01

The aim of this study was to decide, and variables affect students' perceived learning outcomes and satisfaction in asynchronous online learning courses. Amos 23 and data from a group of graduate students were used to test the study model. According to the researchers, many of the study's conclusions were independently checked and supported, except the conclusion that student touch has no discernible impact on student satisfaction. These collaborations exhibited a strong correlation coefficient and a high regression coefficient. According to previous findings, the researchers discovered a strong association between course structure and student satisfaction (Daultani, et al, 202, Geier, 2021, Gopal, Singh, & Aggarwal, 2021, Netoa, et al 201, Ribeiro, et al, 2021, Zhao, et al, 2021).

Additionally, the findings indicate that student participation has a major impact on students' aspirations for their learning. Additionally, the findings indicated that instructor participation has a positive effect on student satisfaction. It was discovered that student engagement partially

mediates the impact of instructor presence on student satisfaction. Additionally, student engagement mediated the relationship between instructor interaction and learner activity and expected student learning. The course's design, learner interaction, and instructor presence both had a significant effect on how students perceived their learning. On the other side, student participation fully mitigated these consequences. Only course structure and instructor involvement had a statistically significant causal effect on student satisfaction. On the other side, interaction with learners has a negligible effect on student satisfaction. "Of the three types of interaction examined (learner-instructor, learner-content, and learner-learner), the interaction between learners was only a weak indicator of student satisfaction. The class engagement has a minor impact on the effect of instructor attendance on student satisfaction.

The significant association between student attendance and perceived student achievement explains that since this university has a robust online community and faculty standards for student engagement are clear, students see this dimension as vital to their learning. On the other side, the findings showed that participants – regardless of whether they participated – did not think their friendship had an impact on their satisfaction. Furthermore, the statistically significant relationship between course design and students' expectations of learning is intriguing. The study's results reflect a significant positive relationship between course structure and perceived student learning. Not only is this a significant statistical interaction, but course design often has the largest effect on the dependent variable, perceived student learning, of any independent variable. One potential reason is that all online courses at this university follow a structured course structure. Due to the consistency of the class structure, students are likely to see this as a necessary component of maximizing their learning.

This finding supports the researchers' hypothesis that student intervention mediates the relationship between learner interaction and student satisfaction; however, it was surprising to discover that student activity only partially mediated the influence of instructor participation on student satisfaction and that learner interaction has no mediated effect on student satisfaction. The researchers cannot explain this discrepancy, but conceptually, the more dedicated an instructor is, the more engaged and happy a pupil becomes. The relationship between the learner and the teacher was the second most important indicator of student satisfaction (Adler, et al 2021, Itasanmi & Oni, 2021, Jiang, et al, 2021, Kalyani & Chathuranga, 2021, Polat ., & Karabatak, 2021). Additionally, graduate students enrolled in online courses are often self-motivated; as a consequence, they can underestimate the vital function of peer participation in establishing a sense of belonging in the class. Additionally, the researchers hypothesized that student engagement influences perceptions of student learning and learner touch. Consistent with their hypothesis, the data did show this mediating impact. This is shown by the fact that as students interact with one another, both consciously or unconsciously, their success improves.

Limitations of the Study

While these results emphasize the vital importance of course design, coordination, training, social networking, attendance, and instructor engagement, we acknowledge that they might not be relevant to all online learning environments. Students were instructed to respond to the survey with a particular goal in mind, which might have limited their answers to the various context

frameworks. Additionally, since the majority of students are enrolled in several courses simultaneously, learners were permitted to complete the online instrument several times by responding to a specific subject. The responses might have inflated the results for specific participants. As a consequence, it is to be noted that understanding the importance of conducting further analysis and evaluation of the data collected using this tool is necessary.

The Study's Contribution to Theory and Practice

This study demonstrates how important course structure and organization are in distance education environments particularly in covid 19 pandemic. Course structure and organization were found to be associated with learner engagement, instructor participation, student interest, student learning, and student satisfaction in a moderate to heavy manner. Students seem to benefit from and enjoy detailed, logical, and user-friendly online classes. Since learning objectives are precise, students have a greater view of the course's success and learning expectations. Instructors must carefully prepare their lessons, coordinate with and be physically present in their classrooms on a regular basis, and inspire student involvement. This would result in a more optimistic attitude about learning and increased student satisfaction. Additionally, there are advantages of providing classrooms that incorporate opportunities for learners to interact with one another in addition to a high level of instructor involvement. Students develop a more positive outlook about their experiences and their overall satisfaction with the course as a result of opportunities to interact with one another and with their instructors.

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