

Research Article

INVESTIGATING BLENDED-LEARNING ENGAGEMENT OF FRESHMEN IN HIGHER EDUCATION

* Huyen Huyen Ton Nu Quynh Mai and Nguyen Thanh Tuan

Hong Bang International University, 215 Dien Bien Phu Street, Gia Dinh Ward, Ho Chi Minh City, Viet Nam.

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ABSTRACT

In the context of digital transformation of higher education, the blended-learning model is being applied more widely to enhance educational quality and meet students' learning experience. This study aims to investigate freshmen's feedback on attending blended-learning classrooms at Hong Bang International University (HIU). A cross-sectional survey design is used with questionnaires based on theoretical frameworks of technological approval and learning satisfaction. The data is collected from about 120 freshmen from different training fields at HIU. The data analysis is conducted through descriptive statistics and exploratory factor analysis based on SmartPLS4. The expected results will provide empirical evidence of learners' satisfaction, engagement, effectiveness, and the factors affecting students' feedback on blended-learning classrooms. The study contributes a scientific basis for design improvement and expands the blended-learning classroom model in higher education in Vietnam.

Keywords: blended-learning classroom, students' feedback, higher education, blended learning engagement.

INTRODUCTION

Rapid technological development has significantly changed teaching and learning approaches in higher education. Blended learning, a combination of face-to-face instruction and online learning activities, is considered a flexible alternative that can utilize the advantages of both teaching methods (Garrison & Kanuka, 2004). Since the COVID-19 pandemic, many universities in Vietnam have maintained and expanded this solution as a sustainable development strategy. For freshmen, the transition from high school to university often comes with many academic and psychological challenges (Tinto, 1993). Students' engagement in blended-learning classrooms creates many flexible opportunities to study but also requires self-study skills, digital capacities, and better time management (Broadbent & Poon, 2015). Therefore, investigating freshmen's feedback on blended-learning classrooms is vital for evaluating implementation efficiency and proposing suitable improvements. At Hong Bang International University, blended-learning classrooms are applied in many general and specialized courses. However, there are no systematic studies evaluating freshmen's feedback on this model. The present study aims to fill that gap through a large-scale survey and empirical analysis. Therefore, the research questions offer (1) how is freshmen's feedback on the experience in blended-learning classrooms? (2) What factors affect students' satisfaction in blended learning classrooms? (3) Does technology acceptance predict satisfaction and continued intention to participate in an integrated classroom?

LITERATURE REVIEW

This section aims to present crucial definitions and context, discuss fundamental theories of the study involving technological use, students' feedback, and satisfaction as pivotal indicators for assessing engagement and improving the quality of blended-learning classrooms.

Definitions & Context

Blended Learning is a purposive integration of both traditional learning approaches and online learning activities to optimize learners' experience and learning results (Garrison & Vaughan, 2008). Especially, the outstanding advantages of the direct social interaction in the traditional classroom, and the flexibility and rich resources of the digital environment. This model's nature is not only the combination of the two teaching approaches but also a process of systematic course design with close integration of content, methodology, learning activities, and assessment. This allows lecturers to take advantage of online flexibility and maintain direct interaction with students (Graham, 2006). In the context of English language teaching (EFL/ESL), blended learning is not simply about using computers in the classroom, but a methodological shift where technology plays a crucial supporting role in language acquisition (Garrison & Kanuka, 2004).

The study shows that blended learning classrooms can improve learning outcomes, increase interaction levels, and create opportunities for personalizing the learning process (Means *et al.*, 2013). Especially in higher education, this model supports students in developing self-study skills and improving digital competence, which are important factors in the digital transformation context nowadays. However, the effect of blended-learning classrooms depends much on course design, technical support, and learners' adaptability (Hrastinski, 2019).

Community of Inquiry (CoI)

Garrison, Anderson, and Archer (2000) have highlighted three core factors of the CoI model: cognitive presence, social presence, and teaching presence. Cognitive presence reflects the extent to which learners can construct and validate meaning through reflection and discussion. Social presence shows learners' ability to express themselves as real members of the learning community. Teaching presence refers to designing, operating, and instructing the learning process. However, in the integrated learning environment, the balance among these three factors plays a decisive role in the learning quality. Shea and Bidjerano (2009) have pointed out that

*Corresponding Author: Huyen Huyen Ton Nu Quynh Mai,
Hong Bang International University, 215 Dien Bien Phu Street, Gia Dinh Ward, Ho Chi Minh City, Viet Nam.

they tend to feel satisfied and improve their learning results when they perceive lecturers' clear methods and supportive environments for positive social interactions. Therefore, the CoI model provides an important theoretical framework for analyzing learners' feedback on blended-learning classrooms.

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) of Davis (1989) has shown that technology use behavior is influenced by two main factors: perceived usefulness and perceived ease of use. In the context of blended learning classrooms, the learning management system (LMS), the online learning foundation, and digital supporting tools play important roles in the teaching and learning process

According to Venkatesh and Davis (2000), if students realize that technological tools help them study more effectively and do not cause problems in use, they will have a more positive attitude toward this model and be ready to use it in the future. On the contrary, technical barriers and poor user experience can reduce adoption and negatively affect satisfaction. Therefore, TAM is an adaptable foundation for explaining the relevance between technological experience and freshmen's feedback in blended learning.

Student Engagement

According to Fredricks *et al.*, (2004), student engagement is considered a significant factor in enhancing students' achievement and maintaining learning motivation. Engagement includes three aspects: behavioral, emotional, and cognitive. In a blended learning classroom, participation can be accessed through online discussion, on-time submitted assignments, and exchange with lecturers, and cooperation with classmates. In addition, Kahu (2013) has shown that learning participation is influenced by individual factors (motivation, self-study ability) and environmental factors (course design, lectures' support). For freshmen in the adapting and transferring stages to the university environment, engagement in blended learning classrooms is especially important for increasing feelings of belonging and reducing the risk of quitting class.

Students' Feedback and Satisfaction

According to Eom & Ashill (2016), students' feedback and satisfaction are important indicators in reflecting training quality in higher education. Satisfaction is considered a synthetic result of learning experience, including content quality, teaching methodology, interaction rate, and technical support. In the integrated environment, course design with clear structure, on-time feedback from lecturers, and a stable technological system has a considerable influence on students' satisfaction (Kuo *et al.*, 2014).

In addition, some studies have shown that satisfaction also refers to the intention to continue participating in online or integrated courses in the future (Alqurashi, 2019). So, analyzing freshmen's feedback not only helps evaluate the present effectiveness of the blended learning model but also offers a solid base for sustainable innovation and development of a training program.

Synthesizing previous studies has shown that blended learning classrooms are a potential model to enhance university education quality, but their effect depends on many factors, such as pedagogical design, technology acceptance, and student engagement. Theoretical frameworks like CoI, TAM, and student engagement can provide a solid foundation for analyzing feedback and freshmen's satisfaction in this study context.

METHODOLOGY

This section clarifies how to implement the research process by designing the study, determining participants, selecting data collection instruments, and describing the procedure of data collection and analysis. This work aims to create a solid theoretical foundation systematically and ensure reliability and validity.

Research Design

This study used a cross-sectional survey design (Creswell & Creswell, 2018) to collect freshmen's feedback on blended-learning classrooms at the time of the survey. This design was quite suitable for measuring awareness, satisfaction levels, and influencing factors at a fixed time. At the same time, it allowed testing the relationships between variables in the research model.

Participants

The study subjects were the freshmen who followed integrated modules at Hong Bang International University. Convenient sampling was used because of its feasibility in reaching participants. The sample size was estimated to be about 120 students, which ensured meeting the minimum demand for factor analysis and multivariate regression. The choice of freshmen aimed to focus on students who were in the transition period to the university environment and had initial experience with the integrated learning model.

Instruments

The data collection tool was a self-administered questionnaire that was formed on the previous study and theoretical frameworks, including the Technology Acceptance Model (Davis, 1989), the theory of learning engagement (Fredricks *et al.*, 2004), and the study of freshmen's satisfaction in blended learning (Eom & Ashill, 2016).

The questionnaire consisted of five main parts: (1) personal information; (2) Perceived Usefulness; (3) Perceived Ease of Use; (4) Engagement; and (5) Student Satisfaction & Intention. The questionnaire was measured by a 5-level Likert scale from levels: 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree.

The questionnaires were adjusted to suit a blended-learning classroom context. For example, perceived usefulness variables included items such as "Blended learning helps me learn more effectively" and "Online learning has helped me review effectively." Perceived Ease of Use variables were measured by some items, such as "LMS is easy to use" and "I have little difficulty in using technology when participating in blended learning". Student engagement was reflected in behaviors such as online discussions and completing academic tasks on time. Finally, student satisfaction and intention were reflected in statements such as "I feel satisfied with the blended learning experience" and "I desire to participate in the blended learning courses in the future." Additionally, SPSS was used to code, enter, and clean data before analysis using SmartPLS4.

Procedure of Data Collection and Analysis

The data was collected through Google Forms, an online survey done in the processing semester. Before taking part in the survey, students were provided with information about the study's aim and the guarantee of information security. Participation in the survey was

completely voluntary, and participants could withdraw if they felt unsatisfied at any time.

The data were handled and analyzed by using suitable statistical software (SmartPLS4). First, Descriptive statistics were used to present the characteristics of the research sample and the general response trends of the students. Next, the study assessment was based on some criteria of the measurement model, which was carried out to evaluate the structure of latent variables and check reliability and validity through the outer loading (≥ 0.7), composite reliability ($Rh-c \geq 0.7$), AVE (≥ 0.5), and HTMT < 0.85 .

Finally, measurement analysis was used to test the extent to which perceptions of usefulness, ease of use, and learning engagement affect satisfaction and intention to continue participating in integrated classes. This analysis procedure aimed to ensure both the validity and reliability of the study's results and provide an empirical basis for improving the integrated classroom model in higher education.

DATA ANALYSIS – RESULTS AND DISCUSSIONS

Freshmen are expected to respond positively if the learning environment is student-friendly and instructors provide timely support. Perceived usefulness may be the strongest predictor of satisfaction (Davis, 1989). The study's results also show that learning engagement acts as an intermediary between technological acceptance and satisfaction.

Table 1: Outer Loading Matrix

	PEU	PU	SCP	SE	SSI	TP
PEU1	0.858					
PEU2	0.862					
PU1		0.867				
PU2		0.868				
PU3		0.795				
SCP1			0.786			
SCP2			0.749			
SCP3			0.861			
SE1				0.874		
SE2				0.857		
SE3				0.886		
SSI1					0.890	
SSI2					0.802	
TP1						0.904
TP2						0.888

Table 1 shows the outer loadings of latent variables. Generally, observed variables were larger than 0.7. It proved that the latent variables PEU (Perceived Ease of Use), PU (Perceived Usefulness – TAM), SCP (Social & Cognitive Presence), SE (Student Engagement), SSI Student Satisfaction & Intention), and TP (Teaching Presence) were acceptable to analyze the SEM model.

Table 2: Path Coefficients - Matrix

	PEU	PU	SCP	SE	SSI	TP
PEU				0.763		
PU	0.661					
SCP		0.683				
SE					0.819	
SSI						
TP			0.723			

Table 2 illustrates Path Coefficients. The coefficients reflected the impact level of variables: SE-SSI (0.819: very strong), PEU-SE (0.763: strong), TP-SCP (0.723: strong), SCP-PU (0.683: average), and PU-PEU (0.661: average). Positive coefficients indicated that variables had the same-direction effect. Noticeably, SE played a central role in the SEM model.

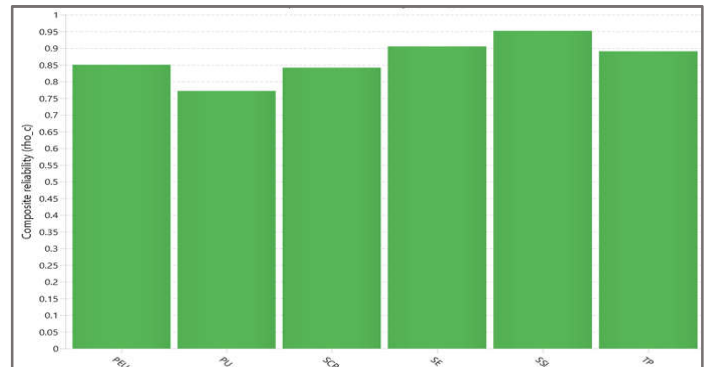


Figure 1: Composite reliability (rho-c)

Figure 1 shows composite reliability in the study. The latent variables reflected high reliability, consistency, and stability of scale. The fluctuation was from 0.77 to 0.95, exceeding the recommended threshold of 0.7.

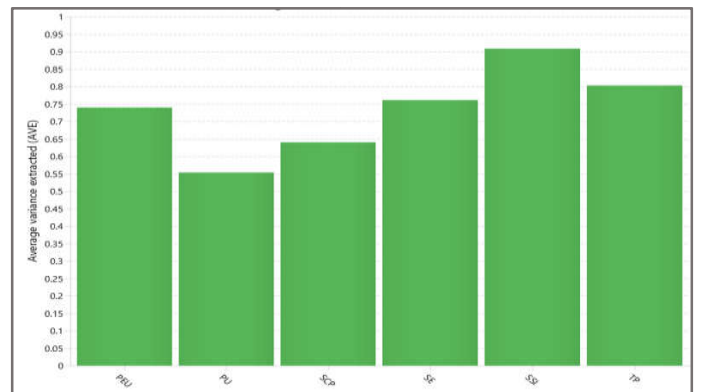


Figure 2: Average Variance Extracted (AVE)

Figure 2 indicates the AVE coefficients of variables. Most of the latent variables exceeded 0.5, compared with the recommended standardization. SSI reached the highest coefficient (0.91), TP (0.80), SE (0.76), PEU (0.74), SCP (0.63), and PU (0.55).

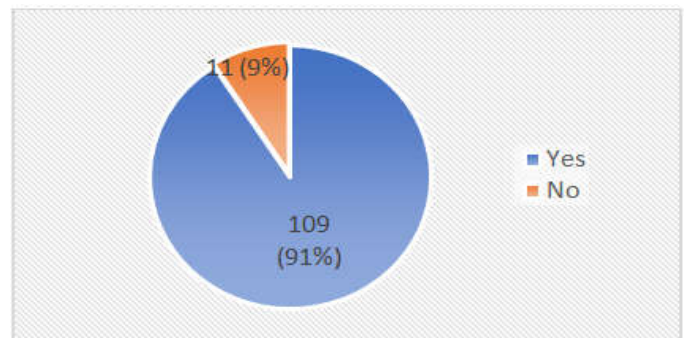


Figure 3: Interest in Blended-Learning Engagement

Figure 3 presents students' interest in participating in blended-learning classrooms. Most of the students supported the blended-learning model and took up 91%, while 9% disagreed. This percentage is significant for implementing and expanding blended-learning initiatives.

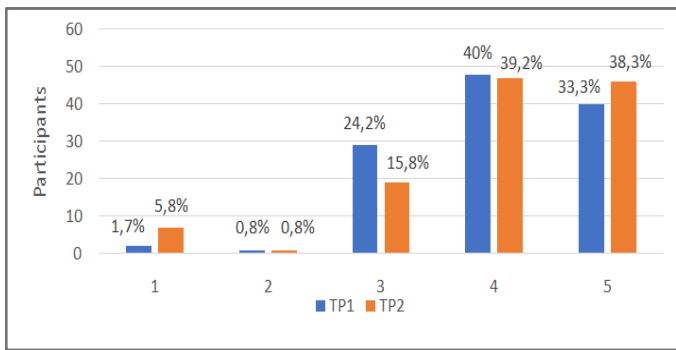


Figure 4: Teaching Presence

Figure 4 demonstrates teaching presence in blended-learning classrooms. 73,3% of the students agreed that lecturers designing clear and structured blended learning (TP1), while 24,2% were neutral, and 2,5% disagreed. Similarly, 77,5% of the students received timely feedback from the instructors in both in-person and online activities (TP2). However, 15,8% were neutral, and 6,6% were unsatisfied.

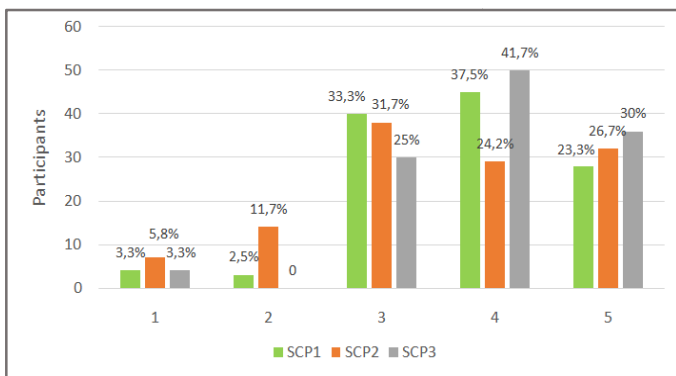


Figure 5: Social & Cognitive Presence

Figure 5 points out the social and cognitive presence in blended learning. Over half of the students (60,8%) felt engaged with a blended-learning community in an online class (SCP1), but 33,3% kept neutral, and 5,8% students were not well-disconnected. Next, the online discussion (SCP2) helped students understand the lesson better. Half of the students (50,9%) highly appreciated the online discussion, 31,7% couldn't decide, and 17,5% were unpleasant. Besides, 77,7% of the students expressed that blended learning activities stimulated their critical thinking (SCP3), whereas a quarter of the students had no idea, and 3,3% completely disagreed.

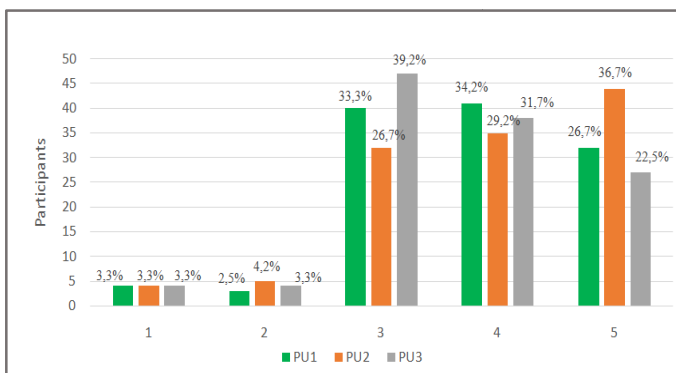


Figure 6: Perceived Usefulness

Figure 6 demonstrates perceived usefulness. Over half of the students (60,9%) found that blended learning was more effective

(PU1). 5,8% did not concur, and 33,3% were unbiased. In comparison, 65,9% of the students quite approved that the online learning model supported me in managing time better (PU2). However, 26,7% were even-handed, and 7,5% were unacceptable. In contrast, only 54,2% of students quite assented that blended learning improved their learning outcomes (PU3), while 39,2% were uninterested, and 6,6% were against.

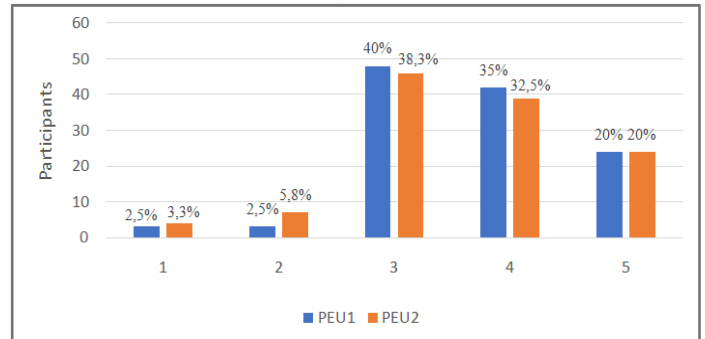


Figure 7: Perceived Ease of Use-TAM

Figure 7 shows perceived usability. 55% of the students found it easy to use LMS (PEU1), but 40% were neutral-minded, and 5% completely disagreed. Similarly, 52,5% of the students had little difficulty in using technology when participating in blended learning (PEU2), whereas 38,3% were unbiased, and 9,1% were unsatisfied.

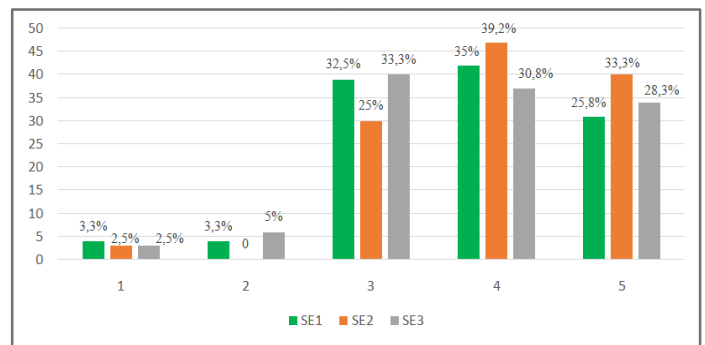


Figure 8: Student Engagement

Figure 8 depicts students' participation in blended learning. 60,8% of the students expressed that they actively participated in online learning activities (SE1). 32,5% were neutral, and 6,6% were uninterested. Besides, 72,5% of the students confirmed that they performed the online assignment on time (SE2), 25% couldn't make up their mind, and 2,5% were quite unfavorable. Additionally, 59,1% of the students found it interesting to participate in blended learning (SE3), while 33,3% were unbiased, and 7,5% rejected.

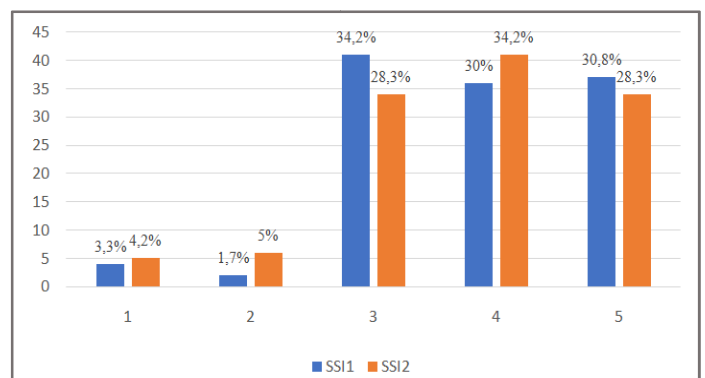


Figure 9: Student Satisfaction and Intention

Figure 9 describes student feelings and experiences in blended-learning classrooms. 60,8% of the students felt satisfied with the blended learning experience (SS1). However, 34,2% were fair, and 5% disagreed. Potentially, 62,5% of the students desired to participate in the blended learning courses in the future (SS2), but 28,3% were impartial, and 9,2% were unfavorable.

CONCLUSION AND RECOMMENDATIONS

In conclusion, investigating students' feedback on blended learning classrooms is an important step in improving training quality. This study clarifies factors that affect satisfaction and acceptance of the blended learning model in higher education. Some main findings are drawn from the study. First, students have positive attitudes toward blended learning, and lecturers are successful in organizing content and guiding them to structured blended learning. In-time feedback proves that lecturers' interaction is effective. Generally, teaching presence is quite favorable for blended learning. However, lecturers need to have solutions for neutral students by maintaining a clear lesson structure to determine specific issues and adjust teaching design. Second, students have positive social and cognitive presence in blended-learning classrooms, creating online community engagement. Online discussion assessments have contributed to understanding lessons, and blended learning really stimulates critical thinking, although a small percentage is limited. Third, a blended-learning classroom is really useful because it can help students manage time better, facilitate learning, and improve learning outcomes. Positively, lecturers need to increase interaction and feedback to enhance learning outcomes. Fourth, the majority of students find LMS easy to use and have little difficulty when participating in blended learning. Nevertheless, lecturers need to support students with techniques for using digital technology. Finally, although students have positive attitudes toward participating in an online classroom, it is essential to increase the attractiveness of online content, encourage students to submit assignments in time, and support students with low motivation.

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