



## Prospects of Blended Learning Implementation at FPT University Can Tho, Vietnam

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### ABSTRACT

Drawing on the evaluations of students' attitudes toward learning aspects the mixed-method research aims to examine the prospects of Blended Learning at FPT University in Can Tho. Four hundred sixty-seven students partook in the study by providing answers for a 30-item questionnaire with open-ended questions. The results showed that most students have positive attitudes towards factors constructing their Blended Learning adaptability, including (1) Study Management and Online Learning, (2) Classroom Learning, and (3) Learning Flexibility. The results of Binary Logistic Regression also clarified the good promise of Blended Learning implementation and the discovery of other concerns that hindered informants' willingness, namely Worryment about Learning Effectiveness, Online Learning Barriers, and Learners' Ego. The research findings served as a reference for FPT University and other higher institutions to better grasp how students perceive Blended Learning to develop strategies for successful practices.

## 1. INTRODUCTION

The successive advancement of information technology in the era of digitalization has imposed particular impacts on many fields of science and psychology, and education is included. In addition to traditional teaching, many institutions have implemented online learning, especially since the COVID-19 pandemic. Previous studies pointed out that online learning provides creative instruction appropriate to each individual's abilities and learning styles and involves students in active learning with a variety of interactive source materials (Cho & Cho, 2014; Sydnor et al., 2014). Face-to-face learning, however, is also highlighted by its unique features that virtual learning seems to be unable to afford for learners. One of the pieces of evidence is social perspectives such as the level of human relationships, social interaction, and spontaneous comments, which cannot be found in a distance learning environment (Bonk & Graham, 2012). The combination of both online and offline learning forms becomes the so-called Blended Learning, being one of the solutions to make use of the strengths as well as overcome the limitations of each form of learning and teaching (Wakefield et al., 2008). Upon that expectation, BL has been applied by many colleges worldwide, where its benefits could be summarized as a flexibility in using resources for the students and offers more time for faculty members to spend with learners in small groups or even individually (Oh & Park, 2009). Even BL enables the transformation of education approach, the creation of knowledge in collaboration with colleagues and understanding of how to use information in a particular context (Lepe & Jiménez-Rodrigo, 2014).

In some Asian countries like Thailand, Malaysia, Indonesia, and Vietnam, BL is gaining more popularity and being considered as a form of support learning (Tham & Tham, 2011). Some higher institutions in Vietnam implemented BL as a response to the policies of the government to reach the 21st-century education trend. However,

“little is known about BL” (Hoang, 2015), and the number of studies on E-learning as well as BL environment is also limited (Huynh & Le, 2014; Nguyen et al., 2020a; Nguyen et al., 2014; Vu et al., 2011).

In the context of FPT University (FPTU), BL has been applying in the form of online learning on Coursera combined with offline mentoring from lecturers. It is, however, merely applied to a few subjects, with specific courses. Researching students’ readiness for BL implementations (BLI) becomes one of the preliminary steps for educators to decide its massive application. This particular study focuses on exploring the likelihood of BLI at FPT University by examining students’ attitudes. The findings are hoped to provide an overview of students’ reactions toward BLI and its prospects in undergraduate education.

## 2. LITERATURE REVIEW

### 2.1. What is Blended Learning?

Blended Learning (BL), or Hybrid Learning, is defined variously among researchers. Nevertheless, Hrastinski (2019) believes these terms are regarded as two sides of the same coin. To be specific, Graham (2006) defined BL as a combination between face-to-face and computer-mediated instructions.

Having a bit differential definition, Allen and Seaman (2013) supported face-to-face learning and online instructions. Still, there is a typical rise in the use of online discussion and a significant reduction in in-class meetings. It is pretty similar to the one proposed by Graham (2006), yet clarify the substantial proportion of online course delivery, which fluctuates from 30% to 79%.



Figure 1. An illustration of “How is Blended Learning?” (Alammary et al., 2014)

Being from another perspective, Alammary et al. (2014) and Tshabalala et al. (2014) rooted for BL as the list of components according to its involving ingredients in online and offline learning. To be precise, online learning is related to e-learning, webinars, conference calls, live or online sessions with instructors, and other media and events, for example, Facebook, e-mail, chat rooms, blogs, podcasting, Twitter, YouTube, Skype, and web. In contrast, offline learning involves lectures, group discussions, apprenticeships, and experiential learning. The above definitions generally agree that the main contributors of BL are the appearance of both face-to-face and online instructions.

### 2.2. Why is BL?

BL is one of the prioritized options of teachers and institutions due to a plethora of reasons. First and foremost, it strengthens flexibility, high autonomy and develops skills required for research while reducing the costs associated with learning materials (Poon, 2013). Additionally, BL provides effective pedagogical practices (Caner, 2012), flexibility in time-space for learning (Singh, 2021), as well as effortless access to learning resources (Ellaway & Masters, 2008). In particular, in higher education, BL enables the transformation of the education approach, creating knowledge in collaboration with colleagues and understanding how to use the information for a specific context (Lepe & Jiménez-Rodrigo, 2014).

Another advantage of BL is its potential to change students’ experiences and outcomes through learning (Davis & Fill, 2007), thanks to enhancing learners’ confidence and competence (Azizan, 2010), as well as increasing motivation and decreasing dropout rates among students compared with fully online and even fully face-to-face courses (Kaur, 2013). In a specific context of Physics teaching for high school students, Nguyen et al. (2020b) concluded that BL was suitable for improving self-study competence, which also contributed to enhancing teaching quality in that subject.

It is, however, noticing that BL still has its adverse aspects (Caner, 2012). Particularly, Vaughan, (2007) stated that the outstanding challenge is students' misconception that fewer face-to-face meetings mean less work and less responsibility for learning. Additionally, the application of BL models still has a growing concern for students, lecturers and institutions. For instance, some students lack literacy skills and motivation (Garrison et al., 2003); some students struggle to adapt from traditional to virtual classrooms (Sanchez-Gordon & Luján-Mora, 2018). Other discouraging factors are involved in the operation of the learning management system (Islam, 2014), the workload, and the highly time-consuming that instructors faced during the preparation process (Caner, 2012).

### **2.3. Blended Learning in Higher Education Context**

In Vietnamese context, blended learning is little known (Hoang, 2015). The number of studies on e-learning and BL environments is also limited (Huynh & Le Thi, 2014; Nguyen et al., 2014; Vu et al., 2011). Notwithstanding, to reach the 21<sup>st</sup> century and develop the Vietnamese education policies' government, some higher institutions utilize BL in their teaching and learning.

In response to the worldwide trend, four blended courses were operated by Hanoi Open University, with 80% delivered online and around 20% for face-to-face components (Vu et al., 2011), following a clear category of learning to classify learning into blended learning by Allen and Seaman (2013).

### **2.4. Student readiness for BLI**

In the BL setting, students' readiness is the key concern and an influential factor for its successful implementation (Mirmoghtadaie et al., 2020). According to Winarso (2016), learning readiness is when students are willing to perform activities to gain particular results in knowledge, understanding, skills, habits, values, and attitude through new learning experiences, which are closely related to students' learning outcomes. Winarso (2016) emphasizes that the students with more readiness for learning were more likely to achieve higher learning results and vice versa.

### **2.5. Related studies**

Yulia (2017) carried out a study in the Faculty of Information and Technology, Satya Wacana Christian University. The findings reported that students were entirely ready for the BL approach. It also highlighted that technology was not a concern to its successful implementation. Adams et al. (2020) conducted non-experimental quantitative research in Malaysia's private higher education institution. The samples of 235 undergraduate and 131 postgraduate students were collected and analyzed. The findings revealed that the students were ready for BL, and gender had no effects on student readiness. In a study conducted by Tang and Chaw (2013), it was suggested that student readiness could be investigated through their attitudes on six learning aspects, including (1) Online Learning, (2) Online Interaction, (3) Learning Flexibility, (4) Study Management, (5) Classroom Learning, and (6) Technology. Two hundred one students who were learning at a private university joined in the research. The findings showed that students who had a positive attitude towards the first four aspects were more likely to adopt BL. On the other hand, there is a negative relationship between attitude towards Classroom Learning and the Readiness for BL. The stronger desire for learning in the classroom, the less ready students will feel for implementing this learning model. Also, it was proven that attitude towards Technology was not a concern.

## **3. MATERIALS AND METHODS**

### **3.1. Research Design**

A mixed-method study was conducted, where there is a combination of both quantitative and qualitative approaches. This research design will be collected in parallel, analyzed separately, and merged to completely understand research problems (Creswell & Creswell, 2017). Moreover, Hurmerinta-Peltomäki and Nummela (2006) believe it helps gain a deeper and broader understanding of the phenomenon than a study taken only with a qualitative or quantitative approach. Moreover, that integration also helps to strengthen readers' confidence in the findings and conclusions being drawn from the studies (O'Cathain et al., 2010).

Regarding the quantitative approach, in search of students' attitudes toward learning aspects that construct the BL adaptability, an adaptation of Tang and Chaw's conceptual framework would be used with the support of Exploratory Factor Analysis (EFA). Prospects of BLI would be evaluated based on the use of Binary Logistic Regression and the percentage of students who say "Yes" or "No" when being asked whether they want to study with BL or not. In the qualitative phase, the content analysis would be applied for collected answers from open-ended questions, which primarily concentrate on why students decide to be for or against BLI.

### 3.2. Participants

516 participants aged from 18 to 24 were invited to complete the web-based questionnaire. All of them were learning on campus and had experiences in online learning throughout the Covid-19. Among them, 273 students used to take BL courses at the university in the form of learning on Coursera with offline mentoring from the lecturers. After the pre-processing period, data was selected carefully by removing faults (those who marked all items 1 or 5) or duplicated ones. The final of 467 informants was valid to be processed by SPSS. Details about them would be presented as follows:

Table 1. Descriptions of participants in the study (N=467)

		Number	Percentage
Gender	Male	229	49%
	Female	238	51%
Courses	C13	95	20.3%
	C14	103	22.1%
	C15	116	24.8%
	C16	153	32.8%

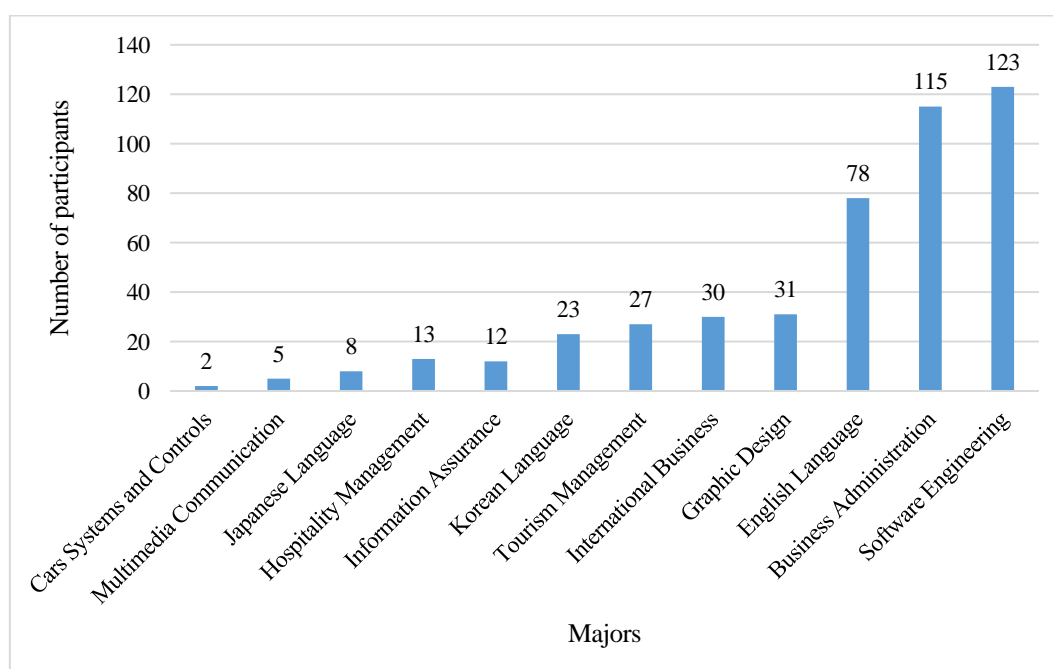


Figure 2. Statistic on the number of participants by their majors

### 3.3. Research instruments – An adaptation of Tang and Chaw’s conceptual framework (2013)

The research instrument from Tang and Chaw’s study (2013) comprises the 37 research items, being categorized into the six learning aspects that were proved to contribute to learners’ adaptability toward BLI. Hence, it positively becomes a base for further prediction about the prospects of BLI. In this study, the removal of the last three items belonging to the aspect of “Readiness for BL” was made due to the hope of generating a differentiated data processing method for the current study. Instead, an open-ended question was added like “Would you like to study with BL at FPTU Can Tho?” with the two options “Yes” or “No” is accompanied by the call for their explanations.

After the pilot study, the remaining 34 items accepted the dropping out of the other four variables due to its blurred meanings to the participants, causing misunderstanding and affecting the reliability of the whole aspects. A web-based questionnaire was then created in Vietnamese with three sections. Section 1 calls for participants’ personal information. Section 2 includes open-ended questions, and the last one covers 30 1-5 Likert items. With this part, participants are asked to rate each statement in one of the five options that suit them the best, ranging from (1) completely disagree to (5) completely agree. Cronbach’s Alpha was run to check the reliability of the questionnaire.

Table 2 shows that all values are over 0.6, and the Correlated Item-Total Correlations are over 0.3. According to Nunnally (1994), the questionnaire is qualified to be studied in our context.

Table 2. Cronbach Alpha of each learning aspect

Learning aspects	Number of items	Cronbach's Alpha
Learning Flexibility	04	0.87
Online Learning	06	0.8
Study Management	05	0.9
Technology	04	0.92
Classroom Learning	05	0.91
Online Interaction	06	0.91

#### 4. RESULTS AND DISCUSSION

This section firstly reported FPTU students' attitudes toward BLI by providing results from the EFA. Subsequently, prospects of BLI at FPTU would be presented as the result of Binary Logistic Regression and students' sharing from the open-ended questions.

##### 4.1. FPTU students' attitudes toward BLI

An EFA was used with Principal Component Analysis extraction (PCA) and Varimax rotation. Factor analysis results accepted the elimination of nine variables being loaded into more than one factor or variable with factor coefficients less than 0.5. The remaining 21 variables were loaded into three factors, which were somehow different from Tang and Chaw's initial six learning aspects. To be specific: (1) The first factor included ten variables coming from the initial three learning aspects from Tang and Chaw (2013); they are Study Management (five items), Online Learning (four items), and Online Interaction (one item). It was then renamed as Study Management and Online Learning to suit the current study context; (2) The second factor comprised eight variables that mainly came from Classroom Learning (five items), Technology (one item), Online Learning (one item), and Online Interaction (one item); (3) Accidentally, all variables from the third group are solely related to Learning Flexibility.

The name of the last two factors remained unchanged as in Tang and Chaw's study, being defined as Classroom Learning, and Learning Flexibility. See Table 3 for details.

Table 3. Rotated Component Matrix<sup>a</sup>

Components	1	2	3
Online learning motivates me to prepare well for my studies.	0.845		
I would like to have my classes online rather than in the classroom.	0.828		
I like online learning as it provides richer instructional content.	0.809		
Online learning makes me more responsible for my studies.	0.802		
Online learning encourages me to make plans.	0.784		
I organize my time better when studying online.	0.738		
I would like lecture time in the classroom to be reduced.	0.682		
I do not resist having my lessons online.	0.676		
I can collaborate well with a virtual team in doing assignments.	0.658		
I can study over and over again online.	0.590		
I learn better through lecturer-directed classroom-based activities.		0.865	
I like the fast feedback when I meet my lecturer in person.		0.862	
I find learning through collaboration with others face-to-face is more effective.		0.813	
I have a sense of community when I meet other students in the classroom.		0.750	
I believe face-to-face learning is more effective than online learning.		0.746	
I learn better when someone guides me personally.		0.694	
I think we should use technologies in learning.		0.664	
I would like to interact with other students outside of the classroom.		0.657	
I like to study at my own pace.			0.790
I would like to decide when I want to study.			0.756
I would like unlimited access to lecture materials.			0.654



*Extraction Method: Principal Component Analysis.*

*Rotation Method: Varimax with Kaiser Normalization*

***Rotation converged in 5 iterations***

The results of factor analysis for 21 variables noted the results in Table 4 of Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO). In this study, KMO was 0.95 and the initial eigenvalues were greater than 1, which are considered significant. Bartlett's test has a substantial level at 0.000; therefore, all variables are correlated. They all accounted for 66.7% of the overall variance. According to Hair et al. (2006): "...in the social sciences, where information is often less precise, it is not uncommon to consider a solution that accounts for 60% of the total variance (and in some cases even less) as satisfactory" (p. 104).

*Table 4. Total variance explained*

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
Study Management and Online Learning	9.832	46.819	46.819
Classroom Learning	3.151	15.006	61.825
Learning Flexibility	1.024	4.875	66.701

To evaluate students' attitudes toward the three learning aspects, statistical means were run and give the result as in Table 5. It can be seen that Learning Flexibility is the most positive aspect (M=3.91, SD=.92). It means that students almost "agree" with all related issues, and they are flexible enough to balance their learning with both online and classroom environments. Meanwhile, the Classroom Learning aspect has closely-ranked second with M=3.86 and SD=.8. It can be inferred that students also have a high evaluation for their traditional learning on campus. Finally, ratings for attitudes toward Study Management and Online Learning is at the last position (M=3.3, SD=.86). However, it still showed a pretty positive signal from students for things related to virtual learning.

*Table 5. Statistic on means of each learning aspect*

Learning aspects (N = 467)	Mean	SD
Study Management and Online Learning	3.30	0.86
Classroom Learning	3.86	0.8
Learning Flexibility	3.91	0.92

#### **4.2. Prospects of BLI at FPTU**

The present study applied Binary Logistic Regression to explore the effects of students' attitudes towards learning on their decisions to take future BL courses. The dependent variable is the prospect of BLI being given only two values 0 (No) and 1 (Yes). As resulted from EFA, the independent variables are three groups of learning aspects, reduced from an original six aspects in Tang and Chaw's model. They are (1) Online Learning and Study Management, (2) Classroom Learning and (3) Learning Flexibility. The 21 items constructing these factors were measured by a five-point Likert scale, ranging from 1- Completely disagree to 5- Completely agree. Omnibus Tests of Model Coefficients was used to evaluate regression coefficients of independent variables. Table 6 showed that the sig of Step, Block and Model are 0.000, lower than 0.05 (reliability level is 95%) so the regression model was statistically significant.

*Table 6. Omnibus Tests of Model Coefficients*

	Chi-square	df	Sig	
Step 1	Step	68.315	3	0.000
	Block	68.315	3	0.000
	Model	68.315	3	0.000

##### **4.2.1. Student readiness on the reception of BLI**

Data of students' ability to welcome BLI was elicited from 467 responses in the web-based survey with two options Yes and No. The results show that there are 339 students (72.6%) choosing. Yes, which indicates that they would like to attend BL courses. In contrast, 128 students (28.4%) choose No, which means they do not want to study with BL. Overall, most of the students are likely to be ready for BLI at FPTU. To test the percentage correct of this model, further analysis has been made by applying Binary Logistics Regression.

The results in Table 7 revealed the ability to take and not take future BL courses based on two criteria: factual analysis and prediction. Specifically:

- Among 339 participants who said they want to study BL Courses in the future, 320 of them are predicted to take the future BL courses; the percentage correct is 94.4%.

- Among 128 participants who said they do not want to study BL courses in the future, 35 of them are predicted not to take the future BL courses. The percentage correct is 27.3%. Reasons for that low correctness will be discussed in detail through the qualitative analysis.

The percentage correct of the whole model is 76.0%.

Table 7. Classification Table

		Predicted			
		Ability to take future BL courses		Percentage Correct	
		Yes	No		
Step 1	Ability to take future BL courses	Yes	320	19	94.4
		No	93	35	27.3
Overall Percentage					76.0

Note. The cut value is 0.500

#### 4.2.2. The correlation between students' attitudes and the prospect of BLI

Table 8 reported the correlation between students' attitudes towards the three learning aspects and prospects of future BLI. According to the table, sig. values of Study Management and Online Learning and Classroom Learning were lower than 0.05, which means that these two factors have particular impacts on the decisions of taking BL courses in the future. Specifically, Study Management and Online Learning positively affect students' decision-making toward BLI ( $B=1.223$ ), while the latter has adverse impacts ( $B=-.729$ ). It can be concluded that:

- The higher students' attitudes are perceived in Study Management and Online Learning; the more possibilities they welcome BLI.

- The higher students' attitudes are perceived in Classroom Learning; the more possibilities they refuse BLI.

Learning Flexibility, however, has no influence on learners' intention when its sig. value is greater than 0.05, indicating that it is not statistically significant.

Table 8. Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 <sup>a</sup>	Study Management and Online Learning	1.223	0.174	49.333	1	0.000	0.294
	Classroom Learning	-0.729	0.186	15.438	1	0.000	2.073
	Learning Flexibility	-0.014	0.163	0.007	1	0.934	0.987
	Constant	0.152	0.574	0.070	1	0.791	1.164

Note. Variable(s) entered on step 1: Study Management and Online Learning, Classroom Learning, Learning Flexibility

These correlations can be written as follows:

$$\text{Log}_e = (p_i \text{ (likelihood in taking future online courses)} / 1 - p_i) = 0.152 + 1.223 \times \text{Study Management and Online Learning} - 0.729 \times \text{Classroom Learning} - 0.014 \times \text{Learning Flexibility}$$

After removing irrelevant variables in the research, the re-analysis results of the data analysis are presented in Table 9.

Table 9. Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 <sup>a</sup>	Study Management and Online Learning	1.223	0.174	49.333	1	0.000	.294
	Classroom Learning	-0.729	0.186	15.438	1	0.000	2.073
	Constant	0.152	0.574	0.070	1	0.791	1.164

The binary regression equation is rewritten:

$$\text{Log}_e = (p_i \text{ (likelihood to take BL courses)} / 1 - p_i) = 0.152 + 1.223 \times \text{Study Management and Online Learning} - 0.729 \times \text{Classroom Learning}$$

### 4.3. Qualitative analysis on students' attitudes towards the prospect of BLI

#### 4.3.1. Towards students' attitudes on the learning aspects

##### Learning Flexibility

After taking Statistic Means on the three learning aspects, the results showed that students' attitudes towards Learning Flexibility were the highest ( $M=3.91$ ,  $SD=.92$ ). 142 students agreed that time efficiency and study location

convenience were benefits to make the prospect of BL more possible because they could be more active and engaged in learning at any time or anywhere. Informant No. 190 said, "If a subject is taught in both forms of online and offline to make the program easier, I recommend this way of learning, and I prefer to study online because it saves me a lot of time." Moreover, students could access learning materials on the Internet when needed (Informants No.347, No.388, and No.428). In addition, online learning helps to reduce the commuting time or minimize the cost (Informants No.34, No.42, No.187, No.240, No.243, and No.403). Informant No.470 confidently stated, "...*Save a lot of money. Be proactive with my own time. I love self-study.*"

#### ***Classroom Learning***

Students' attitudes toward Classroom Learning were ranked positively in the second position ( $M=3.86$ ,  $SD=.8$ ), in which 32 students stated that it would be more effective in absorbing lectures and having direct interactions (Informants No.146, No. 259, No. 46, No. 276). Informant No. 46 believed studying face-to-face with an instructor gave the best results while learning online was just for extra homework. This was also found in other responses in favor of face-to-face learning, and they thought only the traditional form of education was suitable for them (Informants No.199, No.171, No.84, No.110, No.164, No.186). Informant No.146 expresses: "*I feel that when joining in classroom learning, it will be easier to absorb knowledge because it has the interaction between teachers and students. As for online learning, I see that most students just leave it there for attendance, they do not focus on studying.*"

#### ***Study Management and Online Learning***

Students have a quite positive attitude toward the last learning aspect, namely Study Management and Online Learning ( $M=3.3$ ,  $SD=.86$ ). Regarding Study Management, 29 students thought they have stronger learning motivation and better time management when studying (Informants No.72, No.200, No.232, No.244, and No.446). Some believe that BL can provide autonomy for them to be more responsible in their learning (Informant No.53, No.56, and No.266).

Relating to Online Learning, 14 students claimed that it was hard to pay attention to lessons and difficult to understand. Thus, they could not gain more knowledge in online learning (Informant No.51, No. 324, No.356, No.357, and No.337). Moreover, some obstacles were found that prevented students' interests from this form of learning. Informant No.54 strongly opposed to online learning by sharing: "...*There are many inconveniences when using online learning such as a weak Wi-Fi connection, lacks of laptops or laptops being without webcams, and lacks of headphones. I even felt hard to find a quiet place to learn, and the place is also not bright enough. It is, moreover, difficult to interact with teachers. I just felt it a waste of time.*"

#### ***4.3.2. Students' perspectives on the prospects of BLI***

Table 7 showed details about prospects of BLI through the results of Binary Logistic Regression. It is noticeable that there is a big discrepancy in the percentage of correctness between the predictability of Yes and No options, which figures are written down with 94.4% and 27.3%, respectively. Explanations would be provided through the results of qualitative analysis as follows.

#### ***Explanations for the low correctness of the prediction model***

##### ***a. Worryment about Learning Effectiveness***

Among 128 participants who answered "No" when asked for their willingness to take BLI, only 35 students are predicted to refuse to study with BLI honestly. The other 93 are still believed to have more ability to take it based on their high attitudes toward learning. Tracing back to their explanations, the results show that most have considerable suspicion about learning effectiveness. They all agreed that learning off-campus was more effective when 14 blamed them for lacking many exciting activities that engaged them in learning in cyberspace. Online Learning Barriers.

Having different reasons, 34 students complained about the lack of interactions with teachers and friends with the undesired absence of group or pair works. "I feel that learning in class will make knowledge more solid and have more activities," said Informant No. 184. Other reminded barriers involving the Internet connection and computer skills.

##### ***b. Learners' ego***

Learners' ego explains students who are rigid in front of changes and tend to refuse to take risks due to their receptions. 17 students wrote that they felt inconvenient and difficult to concentrate when blending their study with online and offline forms. Especially, Informants No.404 and No.170 said they only wanted to focus on one to achieve the best results. In the same vein, 25 students believed distance learning was unsuitable or just because they felt dislike. Informants No.102 and No.127 felt wasted and annoyed when experiencing this way of learning. "*It was unnecessary to implement a new form of learning because the traditional one has provided enough knowledge,*" said



Informant No.213. In this study, Learners' ego has a two-way impact on learners' decisions. Being apart from what has been mentioned above, 19 students had negative attitudes toward their BL adaptability. Still, they finally wanted to join it just because they liked it and they wanted to try. *"Each learning style has its benefits, so if it is combined in some subjects, it will create more results."* said Informant No.162.

#### ***Students' adaptability in the context of the Covid-19 Pandemic***

18 students confessed their decisions in taking BL or not depending on the context of the Covid-19 pandemic. Though they did not have a high attitude towards the three learning aspects, they still agreed on BLI because of their safety, convenience, and flexibility in the moments that social distancing or lockdown may come unpredictably. They stated: *"Blended learning will make learning more flexible and especially safer during the current pandemic."* said Informant No. 284. *"Because the Covid-19 is spreading fast, and, likely, we will not put it under control. We should learn BL to limit travel and limit contact to minimize the possibility of Covid-19 infections."* said Informant No.430.

## **5. CONCLUSION**

The research findings indicated the good promise of BLI at FPTU thanks to students' evaluations on the three learning aspects, including (1) Study Management and Online Learning, (2) Classroom Learning, and (3) Learning Flexibility, which were rooted in the conceptual framework of Tang and Chaw (2013). Interestingly, learners have the highest attitudes on Learning Flexibility in the FPTU context ( $M=3.9$ ,  $SD=.92$ ), but it has no effects on learners' decisions, while in Tang and Chaw's study (2013), it is the most decisive factor on BLI potential. Otherwise, the other factors agree with Tang and Chaw (2013) when they imposed different influences on the prospect of BLI. Specifically, while the higher students' attitudes toward Study Management and Online Learning symbolize the better premise of BLI, the higher students' attitudes toward Classroom Learning constrains the ability to take BLI.

Results from the qualitative phase helps to reason a lot of ambiguities related to students' ratings on the delivered questionnaires. In particular, this is the mismatch among some students with positive attitudes, but unexpected to try BLI. Three valuable explanations had been discovered, involving in (1) Worryment about learning effectiveness, (2) Online learning barriers, (3) Learners' ego. The coincidence was compatible with the mainstream of Van and Thi (2021a) and Van and Thi (2021b) when students confessed more suspicions about virtual teaching and learning quality and the existence of certain online learning barriers, particularly the issues of social interaction. In addition, Learners' ego had a two-way impact on the prospects of BLI. It was understood when some students insisted on their decisions just because they liked it, or disliked it. Some felt exited to try, while some felt satisfied with the reality and did not want to waste time trying the others.

The study once confirmed Tayebinik and Puteh (2013) and Aboderin (2015) conclusion for Technology-related issues. Wi-Fi connection, electronic equipment, and computer skills may cause a wide range of hesitations when learners think of distance education; Aboderin (2015) admitted those challenges in developing countries.

Another distinguished finding from the current study is students' adaptability in the context of the Covid-19 pandemic though they almost gained negative attitudes toward learning aspects, some still decided to support BLI for safer learning and living conditions.

The present study supports a new perspective of BL and BLI in teaching-learning practices that could be used as a reference for institutions that intend to implement BL in the future. Although the combination of online and offline learning has been proven to benefit the learning and teaching experience, it might lead to unexpected failures when students are not ready for this new learning mode. The investigations into students' attitudes can evaluate the probability of BLI, then ensure its future success. The qualitative data revealed that students' sense of inconvenience and unwillingness to study in new learning settings hinders their adaptability in the BL environment. However, active preparation and appropriate learning strategies can help them be more ready and willing to adapt to new forms of learning. Thus they can take the best advantage of it to improve the learning outcomes.

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## **REFERENCES**

Aboderin, O. S. (2015). Challenges and prospects of e-learning at National Open University of Nigeria. *Journal of Education Learning*, 9(3), 207-216. <https://doi.org/doi.org/10.11591/edulearn.v9i3.1728>

- Adams, D., Tan, M. H. J., & Sumintono, B. (2020). Students' readiness for blended learning in a leading Malaysian private higher education institution. *Interactive Technology Smart Education*, 18(4), 515-534. <https://doi.org/10.1108/itse-03-2020-0032>
- Alammary, A., Sheard, J., & Carbone, A. (2014). Blended learning in higher education: Three different design approaches. *Australasian Journal of Educational Technology*, 30(4), 440-454. <https://doi.org/10.14742/ajet.693>
- Allen, I. E., & Seaman, J. (2013). *Changing course: Ten years of tracking online education in the United States*. ERIC. <https://files.eric.ed.gov/fulltext/ED541571.pdf>
- Azizan, F. Z. (2010). *Blended learning in higher education institution in Malaysia*. Proceedings of regional conference on knowledge integration in ICT, 454-466.
- Bonk, C. J., & Graham, C. R. (2012). *The handbook of blended learning: Global perspectives, local designs*. John Wiley & Sons.
- Caner, M. (2012). The definition of blended learning in higher education. *Blended learning environments for adults: Evaluations frameworks*, 19-34.
- Cho, M. H., & Cho, Y. (2014). Instructor scaffolding for interaction and students' academic engagement in online learning: Mediating role of perceived online class goal structures. *The Internet Higher Education*, 21, 25-30. <https://doi.org/10.1016/j.iheduc.2013.10.008>
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Davis, H. C., & Fill, K. (2007). Embedding blended learning in a university's teaching culture: Experiences and reflections. *British Journal of Educational Technology*, 38(5), 817-828. <https://doi.org/10.1111/j.1467-8535.2007.00756.x>
- Ellaway, R., & Masters, K. (2008). AMEE Guide 32: e-Learning in medical education Part 1: Learning, teaching and assessment. *Medical teacher*, 30(5), 455-473. <https://doi.org/10.1080/01421590802108331>
- Garrison, D. R., Anderson, T., & Archer, W. (2003). A theory of critical inquiry in online distance education. *Handbook of distance education*, 1(4), 113-127.
- Graham, C. R. (2006). Blended learning systems. *The handbook of blended learning: Global perspectives, local designs*, 1, 3-21.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. (2006). *Multivariate data analysis*. Uppersaddle River, NJ: Pearson Prentice Hall.
- Hoang, N. T. (2015). *EFL teachers' perceptions and experiences of blended learning in a Vietnamese university*. Queensland University of Technology.
- Hrastinski, S. (2019). What do we mean by blended learning?. *TechTrends*, 63(5), 564-569.
- Hurmerinta-Peltomäki, L., & Nummela, N. (2006). Mixed methods in international business research: A value-added perspective. *Management International Review*, 46(4), 439-459.
- Huynh, Q. L., & Le, T. T. L. (2014). The mediating role of the perceived usefulness in the acceptance of e-learning. *International Journal of Humanities Social Science Invention*, 3(2), 37-42.
- Islam, A. N. (2014). Sources of satisfaction and dissatisfaction with a learning management system in post-adoption stage: A critical incident technique approach. *Computers in Human Behavior*, 30, 249-261. <https://doi.org/10.1016/j.chb.2013.09.010>
- Kaur, M. (2013). Blended learning-its challenges and future. *Procedia-social behavioral sciences*, 93, 612-617.
- Lepe, E. M., & Jiménez-Rodrigo, M. L. (2014). Project-based learning in virtual environments: a case study of a university teaching experience. *International Journal of Educational Technology in Higher Education*, 11(1), 76-90.
- Mirmoghtadaie, Z., Kohan, N., & Rasouli, D. (2020). Determination and Comparison of the Factors Related to Effective Blended Learning in Medical Sciences from the Viewpoints of Instructors and Learners. *Advances in medical educationpractice*, 11, 205.
- Nguyen, N. T. L., Le, H. T. T., Nguyen, N. T., & Dang, T. M. (2020a). Using blended learning model in improving self-study competence in Physics subject of high school students. *Vietnam Journal of Education*, 4(1), 53-60. <https://doi.org/10.52296/vje.2020.8>
- Nguyen, N. T. L., Le, H. T. T., Nguyen, N. T., & Dang, T. M. (2020b). Using blended learning model in improving self-study competence in Physics subject of high school students. *Vietnam Journal of Education*, 4(1), 53-60.
- Nguyen, T. D., Nguyen, D. T., & Cao, T. H. (2014). *Acceptance and use of information system: E-learning based on cloud computing in Vietnam*. Information and Communication Technology-EurAsia Conference.

- Nunnally, J. C. (1994). *Psychometric theory 3E*. Tata McGraw-Hill education.
- O’Cathain, A., Murphy, E., & Nicholl, J. (2010). Three techniques for integrating data in mixed methods studies. *Bmj*, 341. <https://doi.org/10.1136/bmj.c4587>
- Oh, E., & Park, S. (2009). How are universities involved in blended instruction? *Journal of Educational Technology Society*, 12(3), 327-342.
- Poon, J. (2013). Blended learning: An institutional approach for enhancing students’ learning experiences. *Journal of online learning teaching*, 9(2), 271-288. <http://hdl.handle.net/10536/DRO/DU:30057995>
- Sanchez-Gordon, S., & Luján-Mora, S. (2018). Research challenges in accessible MOOCs: a systematic literature review 2008-2016. *Universal Access in the Information Society*, 17(4), 775-789. <https://doi.org/10.1007/s10209-017-0531-2>
- Singh, H. (2021). Building effective blended learning programs. In *Challenges and Opportunities for the Global Implementation of E-Learning Frameworks* (pp. 15-23). IGI Global. <https://doi.org/10.4018/978-1-7998-7607-6.ch002>
- Sydnor, S., Sass, M. S.-M., Adeola, M., & Snuggs, T. (2014). Qualitative analysis of multidisciplinary college students in an international alternative break course. *The Online Journal of Quality in Higher Education*, 1(1), 27-34.
- Tang, C., & Chaw, L. (2013). Readiness for blended learning: Understanding attitude of university students. *International Journal of Cyber Society Education*, 6(2), 79-100.
- Tayebinik, M., & Puteh, M. (2013). Blended Learning or E-learning?. *International Magazine on Advances in Computer Science and Telecommunications*, 3(1), 103-110.
- Tham, K., & Tham, C. (2011). Blended learning-A focus study on Asia. *International Journal of Computer Science Issues*, 8(2), 136.
- Tshabalala, M., Ndeya-Ndereya, C., & van der Merwe, T. (2014). Implementing Blended Learning at a Developing University: Obstacles in the Way. *Electronic Journal of E-learning*, 12(1), 101-110.
- Dao, T. H. V., & Ha, H. Q. T. (2021a). Gender Discrepancies in Online English Learning in Vietnam Amidst the COVID-19 Pandemic. *IAFOR Journal of Education*, 9(5). <https://doi.org/10.22492/ije.9.5.01>
- Dao, T. H. V., & Ha, H. Q. T. (2021b). Student Barriers to Prospects of Online Learning in Vietnam in the Context of Covid-19 Pandemic. *Turkish Online Journal of Distance Education*, 22(3), 110-123. <https://doi.org/10.17718/tojde.961824>
- Vaughan, N. (2007). Perspectives on blended learning in higher education. *International Journal on E-learning*, 6(1), 81-94.
- Vu, C. T. M., Nguyen, V. Q., & Lin, C.-C. (2011). *Student e-learning acceptance of join academic graduate programs in a developing country*. Global Learn.
- Wakefield, A. B., Carlisle, C., Hall, A. G., & Attree, M. J. (2008). The expectations and experiences of blended learning approaches to patient safety education. *Nurse Education in Practice*, 8(1), 54-61. <https://doi.org/10.1016/j.nepr.2007.04.007>
- Winarso, W. (2016). Assessing the readiness of student learning activity and learning outcome. *Jurnal Pencerahan*, 10. <http://doi.org/10.13170/jp.10.2.5246>
- Yulia, H. (2017). Readiness for Blended Learning viewed from the Students Attitude towards Learning Aspects. *International Journal of Active Learning*, 2(1), 15-26.