



Research Paper

Influence Of Blended Learning On Students' Performance - The Case Of Thai Nguyen University Of Economics & Business Administration

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Abstract

This study aims to determine the factors that affect student learning outcomes when universities implement the blended learning method. Using a convenient sampling method, the study surveyed 350 students from many training majors at Thai Nguyen University of Economics and Business Administration. The multiple regression model was used to analyze the data. The results show that perceived usefulness, academic motivation, interaction between lecturers and students, and interaction among students have a positive influence on learners' learning outcomes. Based on the research results, recommendations are made for universities as well as for students to improve learning outcomes when widely applying the blended learning model.

Keywords: Blended learning, learning outcomes, perceived usefulness, academic motivation, digital, interaction

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I. Introduction

Digital transformation is an inevitable trend that is increasingly taking place in all areas of life (Vial, 2019). In the world, digital transformation started to be mentioned a lot around 2015, popularly since 2017. In Vietnam, digital transformation started to be mentioned a lot around 2018 and the Prime Minister approved the Program of National Digital Transformation on June 3, 2020.

Digital transformation is the process of overall and comprehensive change of individuals and organizations in the way of living, working and production methods based on digital technologies. This is a process related to many different aspects of the organization, such as organizational structure, resources and capabilities, operational processes, and the influencers of the organization (Gong và Ribiere, 2021). The COVID-19 pandemic makes the digital transformation process more urgent than ever. Social distancing forces organizations, especially commercial and educational ones, to apply digital technologies if they want to operate. This not only affects the organization itself but also affects related parties.

This study is limited to digital transformation in higher education in terms of student learning outcomes. After the COVID-19 pandemic ended, higher education institutions continued to operate their digital transformation process. Currently, universities apply blended learning methods. This method has been developed for many years but exploded during the COVID-19 pandemic and has been developing until now. So, how does blended training impact learners' learning outcomes?

II. Literature review and hypothesis

Firstly, we need to mention traditional learning methods. Traditional learning methods have been around for thousands of years and have several important characteristics, such as physical conditions and methods of interaction between teachers and learners. In the traditional teaching method, the teacher and learner communicate directly. Teachers transmit knowledge to learners through the teaching process. This teaching and learning must take place in a specific location and according to a specific timetable. This learning process also allows learners to communicate directly with each other (Friesen, 2012).

Blended learning is the seamless combination of carefully selected online modules with face-to-face instruction (Francis & Shannon, 2013). The blended learning method is only born and developed with the support of information technology, specifically the development of the Internet and online platforms (Garrison

& Kanuka, 2004). In this method, the teacher and learner do not need to appear in the same location, in the same physical space. Individuals using computers or Internet-connected devices with audio and video support software can participate in online classes. Learning materials are stored in cyberspace so learners can study anywhere as long as they have a computer with an Internet connection. Besides, learners are not bound by space and time but can proactively build their schedule that is most convenient and suitable for them. Currently, there are several forms of blended learning, which are (i) teachers and learners communicate through online meeting room systems such as Google Meet, and Zoom or (ii) teachers and learners interact through private online training software systems of higher education institutions.

The transition from traditional learning to blended learning requires certain conditions. The first condition is the information technology infrastructure for digitizing document storage, learning materials, and platforms for operating the teaching and learning system. Teachers and learners participating in this process need to have appropriate equipment such as computers connected to the Internet and other necessary peripheral devices. Instructors and learners need to master the skills to use the devices during blended training. This blended learning process also changes the testing and assessment process. When learners start the blended learning process they must adhere to a certain flexible schedule (study progress, take online tests). Learners have different experiences and feelings compared to traditional learning methods (Panigrahi, Srivastava, & Sharma, 2018).

This study evaluates the impact of perceptions of the usefulness of blended learning, blended learning motivation, and interaction during blended learning on student learning outcomes at higher education institutions.

Perceived usefulness of blended learning

User perception of the usefulness of a technology application is an important factor in user behavior. Perceived usefulness (PU) is defined as “a user's subjective feeling that using a certain application system will increase their work efficiency” (Davis, 1989). The intention to use a technology application is formed when that application is effective for the user. In other words, even if users do not like a certain technology application (negative attitude), they still intend to use it (positive behavioral intention) because they believe that the application is effective on the job (perceived usefulness) (Davis, 1989).

In blended learning, information technology platforms and applications are used to provide learning materials to learners, help learners interact with teachers and other learners, and manage the learning process by themselves. Previous studies on blended learning have provided evidence that learners' perceived usefulness of technology in blended learning is positively related to student learning outcomes (Gao, Jiang, & Tang, 2020)

From the above arguments, this study proposes the following hypothesis:

H1: Perceived usefulness has a positive impact on learners' learning outcomes.

Motivation in blended learning

Personal motivation is an important factor affecting learners' learning outcomes (Støen Utvær & Haugan, 2016). Learners with a positive psychological state, happy attitude, and excitement when learning often achieve better learning results. Many studies confirm that learners' higher intrinsic motivation causes them to have more active learning behavior and achieve higher learning results when participating in blended learning (Joo, So, & Kim, 2018), (Eom, 2020).

This study proposes the following hypothesis:

H2: Motivation to participate in learning has a positive impact on learners' learning outcomes.

Interaction between teacher and learner

According to Gilbert & Moore, 1998, social interaction in learning includes two types: (i) interaction between teacher and learner and (ii) interaction among learners. In the first type of interaction, the teacher performs the role of teaching, guiding, discussing, and motivating learners. In the second type of interaction, learners participate in discussions and support each other in the learning process. These two types of interaction have a great influence on learners' learning outcomes. No matter how much the content of lectures, methods, teaching aids and all elements in the teaching process change and progress, one crucial factor that determines the quality of a teaching program is teacher-learner interaction. The teaching and learning process is not simply a process of transferring professional knowledge but also a communication process for both the teacher and the learner to learn from each other, transfer emotions, experiences, skills, and potential and positive energy sources to promote the positivity of both teachers and learners to achieve optimal results in this process. Educator's presence in the online environment, interactions between students, teachers, and content, and designed connections between online and offline activities and practice-related activities have an important influence on learners' learning outcomes (Nortvig, Petersen, & Balle, 2018). The interaction of teachers and learners is reflected in interaction in program design, interaction through online learning sessions, forums, learning support activities, and offline interactions.

Besides, learners' interactions with each other also significantly impact learning outcomes. Academic performance is influenced by learning ability and the number of new posts in online discussion forums (Palmer, Holt, & Bray, 2008). Psychological studies have shown that learners learn best in interaction with peers of the same age. Interaction in groups also helps develop collaborative and social competencies. Learners need to be trained in teamwork techniques and mobilize the positivity of all members.

From the above arguments, the study proposes two hypotheses as follows:

H3: Interaction between teachers and learners in blended learning has a positive impact on learners' learning outcomes.

H4: Interaction among learners in blended learning has a positive impact on learners' learning outcomes.

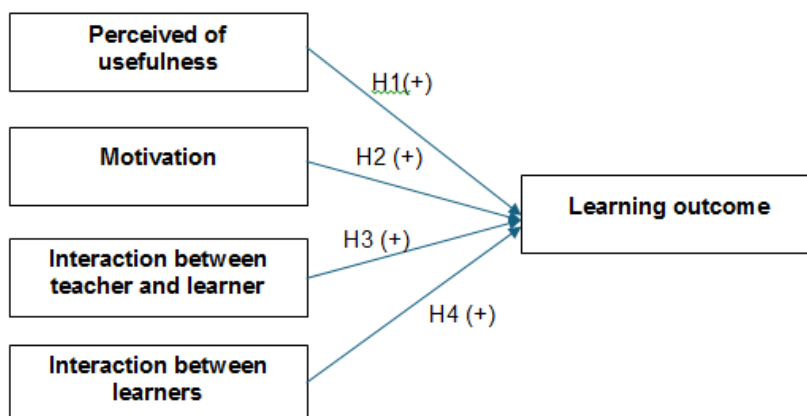
Learning outcomes

The purpose of education is the progress of the learner. This is the final result of the learning process to change learners' behavior. Accordingly, learning outcomes are the level of implementation of set goals. Viewed from this perspective, the initially determined goal can be accomplished with three levels: incompleting, completed, and over-achieved. (Gronlund, 1990).

According to Kieu (2005), no matter what meaning is understood, learning outcomes are expressed in the level of achieving the goals of teaching, which include three major goals: awareness, action, and emotion. Or we can say, that learning outcomes are the level of knowledge, skills, or awareness of learners in a certain field (subject). Learning outcomes are the level of achievement that a learning subject has achieved following effort, time spent, and determined goals; this is the level of achievement achieved by a student compared to other students.

Thus, when we talk about learning outcomes, we are talking about the achievements achieved through the learning process, not about the process itself. Therefore, the author believes that learning outcomes are the learning achievements of learners, reflected in the specific goals that learners achieve in the cognitive field after a learning process. In this study, the author chose to classify student learning outcomes according to TUEBA's training regulations. Students' academic results are classified into Excellent, Good, Fair, Average, and Poor.

Research models



Source: Suggested by author

III. Methodology

This study uses quantitative methods, collecting data from a sample of 350 students of all courses (including 89 are 1st year students, 92 are 2nd year students, 95 are 3rd year students and 74 are 4th year students), in many majors (135 students majoring in Accounting, 115 students majoring in Business Administration, 64 students majoring in Marketing and 36 students majoring in other majors) at Thai Nguyen University of Economics and Business Administration and performing regression analysis to test research hypothesis.

The variables in the research model are inherited from the scales of previous research models on blended learning. Specifically:

The independent variable in the model includes 4 variables: perceived usefulness, motivation to learn, interaction between teacher and learner, and interaction among learners.

Perception of usefulness is inherited from Davis's research, 1989 with 6 items (blended learning helps learners find information quickly, blended learning helps learners easily access lectures, learners easily find useful information, blended learning helps save time and costs, blended learning makes it easy to compare

lesson content, blended learning provides rich information). This scale has a Cronbach's Alpha coefficient of 0.81.

The Academic Motivation Scale (AMS) (Vallerand, et al., 1992) includes internal motivation, external motivation, and negative motivation (Towards Awareness, Towards feeling achievement, Orientation to stimulating experiences, Demonstrating self-importance and worth, External pressure and punishment, Negative consequences or rewards, Negative motivation to learn). This scale has a Cronbach's Alpha coefficient of 0.75.

The scale of interaction between teachers and learners is represented by 5 items (interaction in program design, interaction in the classroom, interaction in forums, interaction in learning supports, offline interaction). This scale has a Cronbach's Alpha coefficient of 0.79.

The interaction scale between learners is represented by 4 items (interaction in group activities, interaction on forums, interaction in the online classroom, interaction in extracurricular activities). This scale has a Cronbach's Alpha coefficient of 0.85.

The explanatory variable is the learning outcome variable. Academic results are determined by the average results of subjects in the combined method of the first semester of the 2023-2024 school year of the surveyed students. Academic results are graded according to the regulations in the Training Regulations of the University of Economics and Business Administration: Excellent (from 3.6 points or more), Good (from 3.2 to under 3.6), Fair (from 2.5 to under 3.2), Average (from 2.0 to under 2.5), Poor (under 2.0).

IV. Results and discussion

Table 1: Results of linear regression analysis

Model	Standardized Coefficients	P-value	VIF
	Beta		
(Constant)	0,024		
POU	0,234	,000	1,675
MO	0,345	,000	1,578
ITL	0,197	,000	1,763
ILL	0,283	,000	1,643
Adjusted R-squared coefficient: 0,712			
P(Anova): 0,000			
Durbin –Watson: 1,948			

Source: Author extracted from SPSS 22

The analysis results according to Table 1 show:

- The largest variance inflation factor (VIF) value is 1.763; The values are all less than 2, so there is no multicollinearity phenomenon between independent variables in the multiple regression model built.
- The R-squared coefficient helps measure the model's fit, meaning how much of the variation in the dependent variable the independent variables explain. The adjusted R2 coefficient of 0.712 means that the independent variables in the model explain 71.2% of the variation in the dependent variable. Thus, the regression model is completely suitable.
- The statistical significance of the P factors is all less than 0.05, meaning the statistical significance level is over 95%.
- The results of the above regression analysis show that the Durbin - Watson coefficient is equal to 1.948 (less than 3 and greater than 1), thus allowing to conclude that there is no autocorrelation between the residuals. That is, this assumption is not violated.

In summary, the above test results show that the assumptions in the linear regression model are not violated. Therefore, it is allowed to confirm that the regression model was tested in this study and accepted. From the above quantitative analysis, we have a standardized regression model:

$$LO = 0,024 + 0,334 POU + 0,115 MO + 0,197ITL + 0,183 ILL$$

V. Conclusion

The results of testing the research hypothesis show that the variables of perceived usefulness, academic motivation, interaction between teachers and learners, and interactions between learners have a positive influence on learning outcomes.

Table 2. Summary of results of testing research hypotheses

Hypothesis	Conclusion
H1: Perceived usefulness has a positive impact on learners' learning outcomes.	Accept
H2: Academic motivation has a positive impact on learners' learning outcomes.	Accept
H3: Interaction between teachers and learners in blended learning has a positive impact on learners' learning outcomes.	Accept
H4: Interaction among learners in blended learning has a positive impact on learners' learning outcomes	Accept

Source: Author's compilation

Research results have shown that using blended learning in higher education has a positive effect on student performance. Currently, universities are focusing on implementing blended learning methods. However, during this process, schools need to focus on designing the curriculum to emphasize the values that students will receive. This may include increasing the ability to autonomously access learning management systems, plan learning, and track progress flexibly, without constraints on study location and time. For the training program to be implemented effectively, interaction between lecturers and students needs to be promoted so that students can absorb knowledge in the best way. In addition, students' academic motivation and interactions among students also need to be encouraged to actively participate in the blended learning process.

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