

# Factors influencing blended learning adoption in higher education

Bui Thi Ngoc Thuy

## Abstract

The article presents an overview of the results of various studies on factors influencing Blended Learning (BL) adoption in higher education and refers to the current implementation of blended learning in Vietnamese universities. The research results indicate that the adoption of blended learning in higher education depends on factors such as institutional and technological readiness, as well as the attitudes of both instructors and students toward this type of training. In Vietnam, many universities are making a strong transition from traditional learning to blended learning; however, this process faces certain limitations that hinder its adoption in practice. The article also provides some recommendations to enhance the adoption of this approach and highlights gaps and areas for future research.

**Key words:** adoption, blended learning, e-learning, factors, higher education

## 1. Introduction

Higher education is closely associated with specialized knowledge and academia, which is often perceived as difficult to access, requiring a significant investment of time and effort from both instructors and learners, as well as from the entire education system. Consequently, for a long time, it has been confined to the traditional form of direct education. It is for this reason that those seeking advanced education had to leave their homeland or study abroad. This incurred substantial costs and hindered people's access to higher education.

However, with the development of information technology and communications, especially the widespread use of the Internet, various new forms of education have emerged, such as distance education, online education, and blended learning (collectively referred to as technology-imbedded education). Distance education and online education in higher education are often criticized for their educational quality. The primary reason for this criticism is the lack of direct interaction between instructors and students, as well as among students themselves in their learning activities.

To address these limitations, many universities have shifted from exclusively using either traditional education or entirely online or distance education to adopting a combined approach, known as blended learning. Blended learning is expected to leverage the strengths and mitigate the weaknesses of both traditional and modern forms of education. In other words, blended learning not only maintains direct communication and ensures educational quality in a traditional setting but also allows universities to harness modern educational technology to enhance teaching effectiveness, increase student engagement, and keep pace with the trends of the fourth industrial revolution.

In response to the demand for modernizing higher education with the application of advanced technology, and amidst the ongoing debate about online higher education, the adoption of such blended learning approach is a reasonable solution. It represents a necessary transition from traditional education to technology-enhanced education. Implementing blended learning has become a popular trend, drawing the interest of many universities in Vietnam and around the world. Particularly, after the Covid-19 pandemic, this trend has gained even more momentum, compelling institutions to swiftly and decisively shift towards blended higher education.

However, the rapid transition can lead to a sense of compulsion among all parties involved in this approach, including instructors, students, and educational administrators. Implementing blended learning also demands changes in how instructors teach, how students learn, how educational programs are managed, and the integration of 2 modes of higher education training named as traditional education and e-learning within a common framework. According to a study by Taylor & Newton (2013), blended learning in higher education requires a shared vision, perspective, and systemic approach throughout all aspects of the educational institution. Conversely, a feeling of coercion can result in a lack of voluntary effort from all parties to make the necessary adjustments to fit the new learning modality. This leads to the moderate effectiveness of blended learning in higher education. Hence, as the benefits of blended learning in higher education have been recognized and this has become an irreversible trend, addressing the barriers to voluntary adoption of this learning approach becomes a critical issue.

In theoretical terms, many studies have demonstrated the benefits and factors influencing the quality of blended learning in higher education. However, only a few have focused on the factors influencing the adoption of this type of learning. In Vietnam, domestic research on this topic primarily concentrates on the advantages of this approach, as well as the content and methods of its implementation in some universities in Vietnam, rather than delving deeply into the factors influencing the adoption of this learning format. Such an in-depth exploration can encourage individuals to voluntarily adapt and change their perspectives and skills to align

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with the new learning modality. In summary, there is a limited amount of research on the factors affecting the adoption of blended learning in higher education. Therefore, researching this topic is essential to help fill the theoretical research gap.

In the following section of the article, the author will present the following aspects: Theoretical Framework, Current Situation and Some Proposals for the Development of Blended Learning in Higher Education in Vietnam, and Conclusion.

## 2. Theoretical Framework

### 2.1. Concepts and theories

#### 2.1.1 Concept of Blended Learning

There are various definitions of blended learning. In the Cambridge Dictionary (managed by the University of Cambridge, often considered one of the first organizations to introduce this concept), blended learning is the combination of traditional classroom lectures with computer technology-based lectures that can be delivered over the Internet. Graham (2013) defines blended learning as a combination of face-to-face instruction and computer-based instruction. Garrison and Kanuka (2004) describe blended learning as the merging of in-person classroom learning experiences with online learning experiences. In simple terms, blended learning can be defined as the combination of traditional face-to-face learning and e-learning. Different educational institutions and countries may choose various combinations based on their perspective on the necessity of each form and the appropriateness of the combination, often expressed in percentages such as 50-50, 40-60, 30-70, and so on.

#### 2.1.2 Theory of Technology Adoption

To investigate the barriers to accepting blended learning, the Theory of Planned Behavior (TPB) proposed by Ajzen in 1991 can be based on. According to TPB, the adoption of blended learning is driven by the intention to engage in this behavior. However, this intention is influenced by three fundamental factors: (i) the individual's attitude towards blended learning, (ii) the subjective norm or the attitude of people surrounding the individual towards blended learning, and (iii) the awareness of behavioral control, which refers to the individual's perception of the advantages and disadvantages when carrying out the behavior.

In addition to the TPB theory, the Technology Adoption Model (TAM) with its three versions: TAM 1, TAM 2, and TAM 3, a unified theory of adoption and use of technology by Venkatesh (2003), is often used in research on factors influencing the adoption of new technology. In this context, blended learning can be considered as the application of modern technology in education. Therefore, using this theory to examine and explain the factors influencing the adoption of blended learning in higher education is logical.

According to TAM, the adoption of new technology is typically influenced by two fundamental factors: perceived usefulness and perceived ease of use. Additionally, certain individual characteristics such as age, experience, and culture also influence technology adoption.

Basically, the two theories mentioned above are in agreement with each other. Therefore, it is possible to combine both of these theories in research on the factors influencing the adoption of blended learning in higher education. Specifically, the adoption of blended learning depends on the subject's intention to accept it, with the intention of adoption being contingent upon: perception of

roles and benefits of blended learning, attitudes of relevant parties towards blended learning, and the perception of the feasibility of blended learning.

Based on these theories, the next section of the article will summarize specific factors that have been examined in experimental research on this topic.

### 2.2 Factors Influencing the Adoption of Blended Learning in Higher Education

#### 2.2.1 Factors Related to Instructors

##### - Instructors' Attitudes Toward Blended Learning:

Instructors' attitudes, whether supportive or oppositional, toward blended learning stem from several factors:

(i) Instructors' Perception of the Importance and Benefits of Blended Learning in Higher Education:

When instructors have a full understanding of the importance and benefits of blended learning, they are more likely to have confidence in the future and quality of this learning approach. This motivates them to actively and willingly accept blended learning. In other words, they will make efforts to engage with the system and implement necessary changes to adapt and support students in adapting to this learning format [9].

(ii) Instructors' Confidence in the Quality of Blended Learning in Higher Education: Instructors often believe that lack of communication in blended learning at the university level may hinder the quality of this learning format. This belief leads to unsupportive attitudes or a refusal to accept blended learning if they have the choice.

- Instructors' Perceived Behavioral Control or Instructors' Perception of the Feasibility of Blended Learning:

Perceived feasibility of blended learning in higher education essentially pertains to instructors' perception of the ease of using educational technology. Instructors often doubt their ability to work with new technology, lack confidence in the value of technology, worry about their own ability to incorporate technology into their teaching, and feel pressured by the dual responsibilities of teaching and having to guide students in becoming familiar with educational technology platforms. These concerns may stem from their limited experience and past interactions with technology [9], [10].

Additionally, blended learning also demands different pedagogical skills compared to traditional teaching. This necessitates instructors to update, refine, and enhance their teaching skills to align with this new learning format. This challenge can lead to instructors' resistance to change and hinder their adoption of this learning approach.

Furthermore, instructors' awareness of the challenges they commonly encounter when implementing blended education also affects their adoption of blended learning in higher education. Instructors often complain about the lack of time for preparation, reduced face-to-face interaction with students, work pressures, lack of motivation, and financial support [11]. These challenges can impede instructors' adoption of blended learning in higher education.

##### - The attitudes of related parties:

The attitudes of related parties toward blended learning in higher education also influence the attitudes of instructors towards this format, subsequently affecting their intention and adoption behaviors. Those parties in this case include students, educational administrators, and other instructors.



**Figure 1. Determinants of Blended Learning adoption [10]**

Instructors will assess the attitudes of these related parties during their interactions with them before and during the implementation of blended learning.

Additionally, instructors assess the attitudes of those related through the necessary support they receive from them in implementing blended learning. This support can include technical assistance, training in educational technology usage and that in adaption to new technologies, policies that encourage instructors to implement blended learning, clear and comprehensive implementation strategies and plans, etc. The supportive or oppositional attitudes of those related directly influence instructors' intention to accept blended learning in higher education.

#### 2.2.2 Factors Related to Students

Students' attitudes toward blended learning influence the adoption of this learning format at the university level. On one hand, a supportive attitude will encourage them to participate and make efforts to overcome challenges in adapting to this learning format. On the other hand, their supportive attitude also impacts the attitudes and behaviors of others, especially instructors. This, in turn, helps instructors have more confidence in blended learning and promotes their voluntary and positive adoption of this format.

Students' supportive or opposing attitudes are influenced by their technological readiness and their perception of the ease of use of this learning format. Specifically, these factors can be reworded as the ease of using educational technology in blended learning and adapting to learning methods in blended learning, and more [10].

#### 2.2.3 Factors Related to Educational Administrators

Educational administrators bear the responsibility for institutional readiness regarding blended learning in higher education. Institutional readiness is primarily reflected in the availability of strategies, plans, policies for designing and developing blended learning [10], [11]. Institutional readiness has several effects, including:

(i) Establishing a blended learning management system to facilitate coordination among various parties and departments to achieve the goals set out in blended learning. This system also aids in handling and addressing issues that may arise during implementation, ensuring the continuous quality of this learning format.

(ii) Institutional readiness for blended learning in higher education also contributes to building confidence among instructors and students regarding this learning format, as well as reducing difficulties in implementation due to a lack of direction, policies, and related procedures. This helps

foster a supportive attitude and enhances the adoption capacity of those related toward blended learning.

In summary, the factors influencing the adoption of blended learning in higher education can be summarized in the framework proposed by Antwi-Boampong as Figure 1.

### 2.3 Strategies to Enhance the Adoption of Blended Learning in Higher Education

In essence, strategies to enhance the adoption of blended learning in higher education

stem from the factors influencing the adoption of this learning format, as discussed in the previous sections. This means that to promote the adoption of blended learning, the factors influencing its adoption are to be addressed. In this section, the author will present strategies based on a systemic approach viewed from the management perspective of educational institutions towards the practices of different parties within the system, including instructors and students.

#### 2.3.1 Establishing and Improving the Framework for Blended Learning in Higher Education

The process of establishing and improving the framework for blended learning in higher education generally follows two fundamental stages [11]:

##### - Stage 1: Raising Awareness of Blended Learning

During this stage, there is no formal framework on blended learning yet. However, educational administrators recognize the role and importance of this format. They provide initial support to academic departments to encourage them to explore ways to integrate blended learning into traditional classroom settings.

##### - Stage 2: Establishing and Enacting Preliminary Frameworks for Blended Learning

In this stage, a formal framework has been adopted, which includes strategies, plans, and policies to support the implementation of blended learning in practice.

##### - Stage 3: Refining Frameworks Linked to Enhanced Implementation of Blended Learning in Practice

In this stage, educational administrators need to complete and fully integrate the framework related to blended learning, including strategies, structures, and the necessary support for implementing blended learning effectively in practice.

#### 2.3.2 Enhancing Accessibility and Technological Familiarity for Both Instructors and Students

Blended learning often requires basic hardware devices such as computers and internet-connected smartphones, as well as supportive educational software. These devices are typically expected to be self-provided by individual instructors and students. In some cases, educational institutions invest in building computer labs on their campuses, which students and instructors can use for blended learning purposes using the institution's equipment.

Additionally, in blended learning, instructors often need to play a supportive role in helping students become familiar with the educational technology used in blended learning. However, many instructors may not be proficient

in technology, especially information technology. Therefore, to support instructors, educational institutions are often recommended to provide training and workshops for instructors in dedicated labs to help them understand and troubleshoot basic technical and technological issues that may arise during blended learning.

Simultaneously, alongside instructor training, guiding and training students to become familiar with and practice using the educational technology is also encouraged. Furthermore, educational institutions are advised to keep their educational technology up to date and upgrade new software functions to help both students and instructors effectively implement blended learning [9].

These solutions related to guiding and training students and instructors to use technology in blended learning also help improve the perceptions of both students and instructors regarding the ease of technology use and the feasibility of blended education. This, in turn, makes them more comfortable with this learning format and increases their adoption capacity.

### 2.3.3 Enhancing Pedagogical Skills Relevant to Blended Learning in Higher Education for Instructors

According to Nelson et al. (2005), pedagogy, rather than technology, is the decisive factor for the success of online higher education [12]. Therefore, while applying information technology is a prerequisite, improving pedagogical skills is a sufficient condition for developing blended learning in higher education. Enhancing pedagogical skills is primarily the responsibility of instructors, but educational institutions should also support instructors through measures such as providing pedagogical training suitable for blended learning, encouraging instructors to share their experiences and pedagogical skills in blended learning, and having policies that incentivize instructors to propose and successfully apply new pedagogical skills to blended learning.

## 3. The Current Situation and Some Proposals for the Development of Blended Learning in Higher Education in Vietnam

### 3.1 Institutional Readiness

First and foremost, regarding the institutional aspects related to blended learning in higher education in Vietnam, a common issue in the implementation of blended learning is inadequate pre-planning. Vietnamese universities appear to be fairly dynamic in adopting new technologies, but the execution is often not well-prepared. Consequently, instructors often complain that they are not adequately informed or briefed about the significance and expected effectiveness of new technologies before their adoption by the institutions. Tight deadlines for completion of tasks further exacerbate this situation. This lack of readiness and the rushed nature of implementation can lead to instructors being less willing to accept blended learning.

This reality often results in many instructors lacking adequate preparation when transitioning to blended learning, both in terms of content delivery and suitable pedagogical styles and methods for this format. In other words, many instructors simply digitize traditional lecture materials into e-learning formats, while their teaching styles and pedagogical approaches remain largely unchanged as they transfer from traditional to blended learning. Challenges related to limited interaction between instructors and students, as well as among students themselves in the

blended learning format, require instructors to research and employ strategies for improvement. However, due to factors such as time constraints and work pressure, instructors often complain that they lack adequate preparation and investment, leading to these limitations in blended learning not being well-addressed.

Furthermore, the issue of institutional regulations is also linked to the requirements imposed on all participants in blended learning. A common issue is that learners often feel that they do not receive timely feedback and support from instructors during the blended learning process. This issue primarily falls under the responsibility of instructors. Many instructors may not fully realize the seriousness of this matter in terms of the quality of online higher education, and most importantly, they may not feel compelled to address it.

Therefore, in the author's opinion, this issue, in addition to instructors' responsibilities, is also related to the fact that institutions currently lack regulations and sanctions to compel instructors to provide timely feedback to students. In practice, according to the author's survey, some universities, beside developing blended learning programs, have also enacted regulations with penalties that require instructors to provide timely feedback to students. Additionally, in the initial stages, there are staff members in educational support departments who remind instructors to adhere to these regulations. These are positive signals showing that these universities are showing greater interest in coordinating relevant departments to enhance the effectiveness of blended learning in higher education in Vietnam.

Finally, the issue of assessing the quality of blended learning is also a limitation of this training mode in universities in Vietnam. Many students have provided feedback that they feel the assessment methods in blended learning are not adequate and do not accurately reflect their performance. This situation primarily arises from the fact that curriculum designers and program managers often simply copy criteria and assessment methods from traditional programs into blended learning programs. Adjustments are made, but they are often insufficient and not suitable. Therefore, program managers and curriculum designers need to address this issue to promote the adoption of blended learning in higher education in Vietnam.

### 3.2 Technology Readiness

Concerning the issue of technology in blended learning in higher education in Vietnam, even though Vietnamese universities have made certain investments in technology infrastructure, educational support software, and training for both faculty and students to become familiar with and proficient in using technology in blended learning, the reality is that faculty members' comfort and proficiency with technology varies with age. Older faculty members often feel reluctant to stay updated and change, especially when it comes to technology. Engagement in blended learning also requires faculty members to take on a supportive role and explain technological aspects to students, which can further discourage some faculty members from embracing this learning format.

Besides, despite continuous improvements, in many places, students still complain about the inadequacy of physical facilities and information and communication technology infrastructure to meet the requirements of blended learning. Students also often lack timely technical support from the support departments, and the responsibilities of

providing timely feedback to students and faculty members are not clearly defined among these departments. This leaves students feeling that blended learning is challenging, hindering their adoption of this learning format.

To address this limitation, universities in Vietnam should continue upgrading and improving their information and communication technology infrastructure to meet the growing demand for blended learning by students in the future. Additionally, university administrators need to establish and strictly implement clear sanctions that specify the responsibilities for providing timely technical support and feedback for students' technical and technological requirements within the functional departments of the university.

### *3.3 Pedagogical Skills Relevant to Blended Learning in Higher Education for Instructors*

In terms of the issue of pedagogical skills that are suitable for blended learning in higher education in Vietnam, it is important to note that the extensive adoption of blended learning in Vietnam only became more pronounced after the prolonged Covid-19 pandemic from 2020 to 2022. This has meant that the preparation of pedagogical skills among instructors to adapt to this form of learning is still not sufficient. As a result, instructors tend to apply traditional pedagogical skills mechanically when implementing blended learning. The outcome of this approach includes various issues in blended learning such as limited communication, reduced interaction between instructors and students, as well as among students themselves, decreased student interest and motivation, and a decline in academic performance compared to traditional learning.

It is safe to say that, compared to the technological and institutional issues, the matter of pedagogical skills for instructors in implementing blended learning is equally crucial. The duty of resolving this issue is to be firstly born by instructors themselves. Instructors should proactively enhance their pedagogical skills to meet the teaching requirements in this new format and ensure they don't fall behind as blended learning has become more widespread in higher education in Vietnam. Beside the instructors' responsibility, academic departments and educational institutions should also support instructors in improving their pedagogical skills by organizing training programs and workshops on pedagogical skills in blended learning. Additionally, they can encourage instructors to participate in relevant courses by offering financial incentives or other forms of support.

## **4. Conclusion**

Firstly, the article has summarized the factors influencing the adoption of blended learning in higher education. These factors can be divided into three groups, corresponding to the three participants in blended learning in higher education: administrators, instructors, and students. Corresponding to these factor groups are solutions aimed at promoting the adoption of blended learning in higher education. The specific research results are as follows:

(i) Factors related to institutional structure under the responsibility of educational administrators: This group includes elements such as development strategies, implementation plans, procedures, regulations for blended learning, and management policies that support and promote blended learning in higher education.

The studies also highlight that the process of building and perfecting blended learning should follow a series of steps, starting from awareness, moving towards implementation, and ultimately advancing to blended learning in practice. This process is to be accompanied by the fact that administrators should effectively communicate the benefits, importance, and strategic direction of blended learning to instructors and students. They should also guide them on how to effectively engage in blended learning. These efforts help strengthen the supportive attitudes and adoption of blended learning among instructors and students.

(ii) Factors related to instructors' attitudes and perceptions regarding their roles, how to overcome challenges when implementing blended learning, and the pedagogical skills that align with this learning format: to promote the adoption of blended learning in higher education, appropriate solutions are needed to enhance instructors' awareness of these issues. This, in turn, fosters supportive attitudes and adoption behaviors among instructors.

Specific solutions to be proposed is the comprehensive communication from educational institutions to instructors about the role of blended learning, the future trends of this format, thus supporting them to overcome barriers related to technology usage through training. Institutions should also encourage instructors to proactively research and update the necessary pedagogical skills for this new learning format. Additionally, they may have policies that alleviate job pressure, incentivize instructors to apply new pedagogical skills, and offer appropriate rewards.

In addition to the support policies, educational institutions should also establish regulations to compel instructors to provide timely feedback to students. Moreover, institutions should listen more attentively to instructors' opinions when designing.

(iii) Factors related to students' attitudes toward blended learning in higher education: This group of factors includes two elements. The first is the availability of technological devices and students' ability to use technology to engage in blended learning. The second element is students' perception of the ease of participating in blended learning. If students have high levels of access to and a perception of ease regarding technology use, their adoption of blended learning is higher. Furthermore, students' supportive attitudes toward blended learning positively influence instructors' attitudes toward this mode of learning, thus enhancing instructors' adoption of blended learning.

Solutions to influence students' attitudes include investing in physical infrastructure and information technology facilities to meet the technological needs of students who are not technologically ready, providing training and encouraging students to use technology proficiently in their learning, and offering timely technical support for any technical issues that may arise. Additionally, designing blended learning programs that ensure quality while aligning students' capabilities is crucial, preventing students from feeling overwhelmed by

Secondly, based on the theoretical foundation of the influential factors and solutions to enhance the adoption of blended learning in higher education, the article reviewed the current state of blended learning implementation in Vietnamese universities. The review revealed several noteworthy points, including:

(i) Regarding technology: Blended learning is becoming a trend and is being implemented by many universities.

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are designed to ensure that educational standards and curricula align with the specific requirements and industry standards of the furniture sector.

In practice, the adoption of a business-academia partnership model necessitates flexibility. The progression can begin with individual partnership arrangements and evolve into more comprehensive collaborative efforts.

Ultimately, the objective is to transform universities into institutions dedicated to "technology transfer training," eventually evolving into "research and implementation universities." This progressive approach is vital for shaping the future of education and the symbiotic relationship between academia and industry./.

### References

1. Seungpok, Choi. (2010). *Effective shared process and application of knowledge management (KM) in interior design service industry*. *International Journal of Contents*, 6(3):65-70. doi: 10.5392/IJOC.2010.6.3.065
2. Anne, E., Creigh, Tyte. (2010). *Design Training in the Professions: A Policy Proposal for the UNITED KINGDOM*. 7(3):61-66. doi: 10.1111/J.1948-7169.1996.TB00497.X
3. Terri, L., Maurer, Katie, Weeks. (2010). *Interior design in practice: case studies of successful business models*.
4. Shannon, Tew. (1991). *The Role of Business and Communication Skill Preparation for Interior Design Graduates*. *Journal of Interior Design*, 17(2):51-58. doi: 10.1111/J.1939-1668.1991.TB00038.X
5. Christopher, Budd. (2011). *Valuing the Intuitive: Reintroducing Design Into Interior Design Education*. *Journal of Interior Design*, 36(3) doi: 10.1111/J.1939-1668.2011.01059.X
6. Pham Van Quan (2019). *Building a school-enterprise linkage model in training and scientific research at training establishments*. *Education and training website gdn.edu.vn*, Thursday, October 19, 2023, 11:44
7. *The Bayh-Dole Act, signed into law in 1980, gives universities rights to intellectual property (IP) generated from federal funding. It was never intended to be used to control drug prices.*
8. *Center for Educational Communication (2022). Propose policies to support and promote university-enterprise cooperation. https://moet.gov.vn/. Thursday, October 19, 2023, 11:44*

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Therefore, universities recognize the importance of investing in technological infrastructure, such as computer labs, network connectivity, and educational support software. They also provide guidance and training for both instructors and students to familiarize them with and master the use of technology for blended learning. However, during the implementation of blended learning, various technical issues arise, causing difficulties for students who then blame instructors for not supporting them timely.

(ii) In terms of institutional structure: Implementing blended learning in higher education is not a new concept in Vietnam, especially after the COVID-19 pandemic. Universities have established relevant institutional structures; however, due to the rapid expansion of blended learning, the institutional quality of blended learning remains limited. Specifically, the implementation is often inadequately prepared, leading to rushed plans. Policies and mechanisms to support instructors and students are lacking, and regulations and procedures for blended learning are not yet complete. Communication aimed at enhancing awareness of blended learning for

both instructors and students is still insufficient. This results in apprehension and hinders the adoption of this form of learning.

Thirdly, there are research gaps and potential future research directions. In general, to enhance the adoption of blended learning in higher education, four factors need to be considered: technology, institutional structure, the role of instructors, and student participation. Technology and institutional structure have been extensively researched, while the roles of instructors and students have received less attention. However, instructors and students are directly involved in blended learning and play a crucial role in its adoption. In particular, domestic research on this topic has primarily focused on improving technological and institutional factors. Therefore, future research could delve deeper into the pedagogical skills of instructors and the needs of students in blended learning. This can lead to more comprehensive proposals to improve the adoption of these participants towards blended learning in higher education in the future./.

### References

1. Taylor, Janet A., and Diane Newton, "Beyond blended learning: A case study of institutional change at an Australian regional university", *The Internet and Higher Education* 18 (2013): 54-60
2. Graham, Charles R. "Emerging practice and research in blended learning." *Handbook of distance education* 3 (2013): 333-350.
3. Garrison, D. Randy, and Heather Kanuka, "Blended learning: Uncovering its transformative potential in higher education", *The internet and higher education* 7.2 (2004): 95-105.
4. Venkatesh, V. and Davis, F.D., "A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies", *Management Science*, (2), 2000, 186-204.
5. Venkatesh, V. and Bala, H., "Technology Acceptance Model 3 and a Research Agenda on Interventions", *Decision Science*, (2), 2008, 273-312.
6. Thabet, R., Christopher, H., and Eman G., "Perceptions and barriers to the adoption of blended learning at a research-based University in the United Arab Emirates", *Recent advances in intelligent systems and smart applications*, 2021, 277-294.
7. Antwi-Boampong, A., "Towards a faculty blended learning adoption model for higher education", *Education and Information Technologies*, 25(3), 2020, 1639-1662.
8. Porter, W., et al. "A qualitative analysis of institutional drivers and barriers to blended learning adoption in higher education", *The internet and Higher education*, 28, 2016, 17-27.
9. Hồ Ngọc Khuong, "Mô hình Blended Learning trong giáo dục đại học và thực tiễn áp dụng ở các trường đại học", *Tạp chí Khoa học Giáo dục Việt Nam*, 45(9), 2021, 6-11.
10. Trần Thị Huệ, Nguyễn Kim Oanh, "Các nguyên tắc cơ bản để thiết kế khóa học ở đại học theo mô hình Blended Learning hiệu quả", *Tạp chí Giáo dục*, 477, 2020, 18-22.