Research Paper

A systematic review: online learning aspectof learning inVietnam

Thi-Thanh-Thuy Nguyen[1],Thi-Van Pham[1*],Xuan-An Nguyen[1], Dinh-Hai Luong[1]

[1]Vietnam National Institute of Educational Sciences, Vietnam,
Corresponding author(s): Thi-Van Pham

Abstract
With the development of science and technology, online learning has become popular all over the world. Especially, online learning has shown remarkable growth over the last decade.The topic of online learning components in Vietnam education has also attracted the attention of domestic and foreign researchers. Various topics such as distance education, blended learning, flipped classroom, online learning, e-learning, and mobile learning were mentioned in different studies. Hence, it is necessary to get a landscape so as to review the research findings on this topic. This article aims to review publications on learning forms, which have used online mode to carry out the instruction, in Vietnam education in the period of 2001 - 2020 by using systematic review method. By gathering datafromthe Scopus databaseand checking the eligibility, the final dataset for content analysis consisted of 22 papers.The study highlights the development of publication quantity and the research results of online learning in the Vietnam context, including aspects such as research category, research sample, analytical methods, findings, limitations, and further research. In this study, the findings may be useful in exploring potential research areas and identifying neglected areas in the field of online learning modes in Vietnam.
Keywords: Distance education, blended learning, online learning, e-learning, mobile learning, Vietnam.

I.   INTRODUCTION

With the development of science and technology, online learning has become popular all over the world (Huynh, 2020). Especially, online learning has shown remarkable growth over the last decade (Koksal, 2020). This trend brings new opportunities based on its potential, simultaneously poses challenges such as requirements for further research and experimentation (Liang & Chen, 2012).

Although online learning is common around the world, it remains unfamiliar in Vietnam (Linh Ha, 2020). This type of learning is mainly applied in some universities, but it is absent in general education. It has only been used by schools since the Covid-19 pandemic broke out, and students had to stay at home. However, the topic of online learning components in Vietnam education has also attracted the attention of domestic and foreign researchers. Various topics such as distance education, blended learning, flipped classroom, online learning, e-learning, and mobile learning were mentioned in different studies. Accordingly, relevant issues have been explored such as designing an online learning environment (T. A. Bui et al., 2020; Churton, 2011; Lewis et al., 2012; Trinh et al., 2019), proposing competence framework for online lectures (Tran, Bui, & Bui, 2020), studying the positive as well as negative effects of this learning environment (L. De Jaegher, 2020; Lan et al., 2020; Lewis et al., 2016; Ngoc Thuy Thi Thai et al., 2017; T. S. Thai, 2001; Vo et al., 2020b, 2020a), exploring perceptions and attitudes of learners towards online learning (Khoa et al., 2020; Lin et al., 2020; N. L. Nguyen & Bui, 2020; Q. T. Pham, 2018; N. N. K. Tran, 2016; Vuth et al., 2007), at the same time analyzing the current situation of implementing online learning in Vietnam educational institutions in the context of Covid-19(T. H. Bui et al., 2020; Pho et al., 2020) to clarify the advantages and disadvantages of teachers and students when participating in this type of learning (Chu, 2020; Dinh & Nguyen, 2020; Le & Cao, 2020).However, the previous studies mainly focus on different aspects of online learning in Vietnam education.Therefore it is necessary to get a panorama view so as to review the research findings on this topic.

The purpose of this article is to review publications on online learning in Vietnam education in the period of 2001 - 2020 by using a systematic review method. The following research questions need to be clarified:

RQ1: How did the number of publications of online learning in Vietnam education develop over the past two decades, from 2001 to 2020?

RQ2: What topics about online learning in Vietnam education were discussed over the past two decades, from 2001 to 2020?

Background

Collectively, revolutionary advances in information and communications technology (ICT) offer the potential to open doors and build bridges by enlarging access to quality education, facilitating communication between instructors, learners, and families, and enhance equality in education (Escuenta et al., 2017). It plays an important role in the emergence of non-traditional learning methods such as distance education, blended learning, flipped learning/flipped classroom, online learning, e-learning, and mobile learning, which not only helps increase the opportunities to access education for many different groups of learners in society but also provides useful and timely solutions to ensure teaching and learning during times of crisis. Diseases, natural disasters, etc. The section discusses terms of historical development, definitions, and overlapping terms.

Distance education

Distance Education (DE) has existed for nearly 300 years (Oliveira et al., 2018; Spector et al., 2014) since Caleb Phillips from Boston, USA, offered training in shorthand via weekly lessons communicated via US mail (Clark, 2020) and reflects an egalitarian approach to education (Casey, 2008). According to Bozkurt (2019), the history of DE can be classified under three ages at the macro level and under-five generations at the microlevel. These generations and ages generations were shaped and determined by the dominant communication technologies adopted by DE (A. W. Bates, 2005; Bozkurt, 2019)(as shown in Figure 1). The different ages had different definitions of DE based on the technologies used at the corresponding period.ss
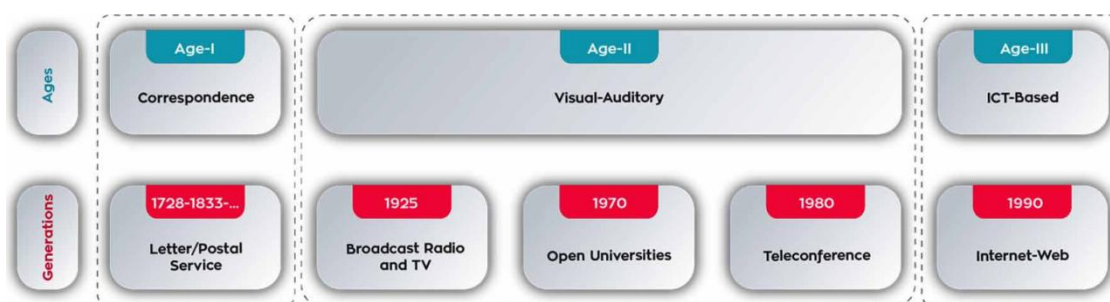
Figure 1. Ages and generations of distance education (cite to Bozkurt, 2019)

In the 3rd age, which is based on the rapid growth of ICT, DE has been fulfilled through the Internet-Web during the current century with the two primary modes exist including synchronous and asynchronous (Clark, 2020). Synchronous education is scheduled educational sessions which may be or not be interactive. Asynchronous education is not scheduled with online materials, oral exams, tests, and interactive activities available on an ad hoc basis. Today, classroom activities focus on activities best suited to the live classroom, which led to a significant movement to the blended or hybrid learning and the "flipped" classroom (Clark, 2020). Thus, DE can be understood most collectively as some form of instruction occurs between two parties (a learner and an instructor) who are connected through ICT achievements without face-to-face consist of the two modes: synchronous education and asynchronous education (A. W. Bates, 2005; Moore et al., 2011; Seaman et al., 2018). It is characterized by the distance in time and/or space between learners and learning resources, and uses varying forms of instructional materials (A. Bozkurt & Sharma, 2020; Moore et al., 2011).

Online learning

Online learning is a term that was used for first used in 1995 when the web-based WebCT was developed as the first learning management system (LMS), then it becomes a Blackboard application (A. W. Bates, 2001; Singh và Thurman, 2019). Since then, the concept of online learning has been mentioned with the inclusion of many separate and coinciding terms such as e-learning, blended learning, online education, and online courses… (Singh và Thurman, 2019) and sometimes the same with distance learning or distance education (Martin et al., 2020; Moore et al., 2011). In the current discussion about the concept of "online learning", scholars around the world have also shown misperception and obstruction around even the most basic idea of the description of the term (Singh và Thurman, 2019). Therefore, the presentation of a common and widely accepted definition in the academic world is still a deliberation that has not terminated.

By using the method of qualitative content analysis method of search results, Singh và Thurman (2019) identified the crucial elements used primarily to define online learning, namely: the use of technology; time

element: synchronous or asynchronous; synonymous terms and overlapping concepts, physical distance; education context. Based on the criteria that are proposed from the research result, these authors advocated new definitions of online learning. In this article, we selected the 3rd definition of Singh và Thurman (2019) to identify the aspect of online of the other learning modes as follows: "Online education is defined as education being delivered in an online environment through the use of the internet for teaching and learning. This includes online learning on the part of the students that are not dependent on their physical or virtual co-location. The teaching content is delivered online, and the instructors develop teaching modules that enhance learning and interactivity in the synchronous or asynchronous environment".

E-learning

The term "electric learning" (acronym: e-learning or E-learning) has a vague origin, though the term is mentioned in the 1980s, in the same scope and time frame as the online learning method (Moore et al., 2011). The definition of e-learning develops with the development of the Web (from Web 1.0 to Web 4.0)) (Choudhury & Pattnaik, 2020). There are also many opinions and definitions of e-learning that are well-defined and particular, but there are also ambiguous understandings. Some definitions are inaugurated based on conflicting perspectives on other definitions, others from simply comparing defining attributes with other terms (Moore et al., 2011). Some authors even think that e-learning is a type of online learning (Triacca et al., 2004). Likewise, a systematic review of the definition of "online learning" in articles published from 1988 to 2018 by Singh and Thurman (2019) revealed that e-learning is used in eleven publications when defining online learning.

Because there are still main debates as to which technologies should be used so that the term can be referenced, some authors provide either a clear definition or a fuzzy definition to these other terms such as online courses/learning, web-based learning, web-based training, distance learning, ... that believe it is probable to use these terms synonymously (Dringus & Cohen, 2005; Khan, 2001; Triacca et al., 2004; Wagner, 2001). Most of the definition of e-learning found in those documents conveys an idea that e-learning refers to the usage of ICTs to allow access to resources online learning/teaching (Arkorful & Abaidoo, 2015). It is evident that there is uncertainty in the exacting of e-learning terminology features, but it is clear that all forms of e-learning, whether they are applications, programs, objects, websites, ... all can provide an individual learning opportunity.

Therefore, in this paper, our research team pinpoint "e-learning is an innovative web-based system based on digital technologies and other forms of educational materials whose primary goal is to provide students with a personalized, learner-centred, open, enjoyable and interactive learning environment supporting and enhancing the learning processes"(Rodrigues et al., 2019).

Blended learning

As mentioned in the section about *Distance education*, blended learning (BL) is based on asynchronous education of DE (J. T. Clark, 2020; Fidalgo et al., 2020; Garrison & Kanuka, 2004). As a useful solution to the challenges of tailoring learning and development to the needs of individuals, BL offers an opportunity to integrate the innovations and technological advantages offered by online learning with collaboration and participation is proposed in traditional learning modalities (Thorne, 2003; Rasheed et al., 2020; Smith & Hill, 2019). BL has been established in K-12 (Barbour, 2014) and higher education (Smith & Hill, 2019) since the 1990s as a result of the demand for flexibility in learning and the affordances of technology (Mirriahi et al., 2015). BL has become in popularity in the years following, with increasing numbers of HEIs offering one or more curriculums in the blended learning approach (Mirriahi et al., 2015). Consequently, BL has been identified as one of the top ten global trends to emerge in the knowledge delivery industry and educational context (Allen & Seaman, 2006; Rooney, 2003).

Blended learning is often used interchangeably with terms such as hybrid, mixed-mode or flexible learning (J. T. Clark, 2020; Keppell et al., 2010; Mcgee & Reis, 2012), flipped/inverted learning because of mixing online with traditional face-to-face instructions (Rasheed et al., 2020). Therefore, the plurality of names and liberal variations of semantics make misunderstanding and even half-truth about the term (Jones & Sharma, 2021). Despite the multiplicity in definitions of BL during the two decades, generally, the term is constantly defined by the two main components: face-to-face and Internet technology (Fidalgo et al., 2020). With the popularity of e-learning, the most accepted definition is the combination of e-learning and face-to-face instructional designs (Dziuban et al., 2005; Thai et al., 2017). In which e-learning is used as a virtualisation, scaffolded, asynchronous, and solitary learning intervention to learner directly - not through the teacher - discovers the subject matter. While F2F is a humanistic, managed, synchronous, and collective learning intervention where the learner explains the subject matter issues in a designed presentation by the teacher.

Flipped classroom

The flipped classroom, which was developed by American educators Jonathan Bergmann and Aaron Sams in the early-mid-2000s (El Miedany, 2019; Tucker, 2012), is a form of blended learning, and it is one of the many ways to organize blended learning effectively (Capone et al., 2017; De Jaegher, 2020; Evseeva &

Solozhenko, 2015). However, the concept of the flipped classroom has been in use since the late 1990s by some educators who have flipped their classes (eg. Harvard Professor Eric Mazur developed a model of "peer instruction", in which he provided material for students to prepare and reflect on before class) (Baker, 2000; Johnson, 2013).

The term "flipped classroom", which has also been known as an inverted classroom (Akçayır & Akçayır, 2018; Natalie B Milman, 2012; Rasheed et al., 2020), is an innovative pedagogical approach that focuses on learner-centred instruction to ensures learners receive a personalized education tailored to their individual needs (Bergmann & Sams, 2012; Gilboy et al., 2015). Thus, many scholars consent that the flipped classroom can entirely perform ideas of student-centred learning theories (Betihavas et al., 2016) as active learning, peer-assisted learning, and collaborative learning (Akçayır & Akçayır, 2018). According to Bergmann and Sams (2012), the most basic understanding of a flipped class is "traditionally done in class is now done at home, and that which is traditionally done as homework is now completed in class". With rapid developments in technology, defining the flipped classroom approach as "an educational technique that consists of two parts: interactive group learning activities inside the classroom, and direct computer-based individual instruction outside the classroom"(Bishop & Verleger, 2013). Principally, the flipped classroom instructional model (Figure 2) consists of pre-class activity (e.g., viewing videos) before class meetings, and complete individual or group activities during face-to-face lessons in classroom (Abeysekera & Dawson, 2015), then each learner continue checking for understanding of the concept through higher order application and evaluation after class (L. De Jaegher, 2020).
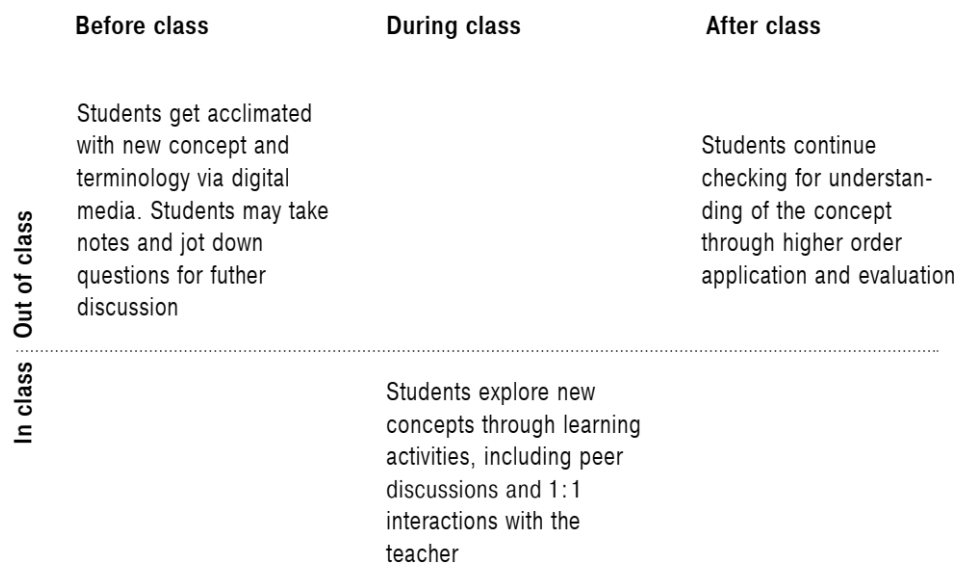
Figure 2. Flipped Classroom instructional model (cited to De Jaegher, 2020)

Flipped learning is a term often referred to in the flipped classroom instructional model. In consequence, in our article, we focus on the papers related to the flipped classroom.

Mobile learning

M-learning was underpinned by the far-sighted Xerox Dynabook project over 40 years ago (M. Sharples et al., 2009). The project proposed a "self-contained knowledge manipulator in a portable package the size and shape of an ordinary notebook" in which the exploring, creation, and sharing of dynamic games and simulations by children are encouraged (Kay, 1972). The hasty development and widespread of mobile devices and technology led to a new concept in education, which is called "mobile learning" (acronym: m-learning) (Al-Hunaiyyan et al., 2018; Crompton & Burke, 2018; Traxler, 2005; Sharples et al., 2009). Generally, m-learning offers a platform to take out geographical obstacles and offers anytime-anyplace learners learning by utilizing portable mobile devices such as smartphones and tablets (Helen Crompton & Burke, 2018; M. S. H. Khan et al., 2019). Therefore, m-learning is also delivering us with new opportunities to give learners a much flexible approach through social and content interactions, which use personal electronic devices (Al-Hunaiyyan et al., 2018; H. Crompton, 2013; Hsieh & Tsai, 2017).

In terms of definition, m-learning has been termed by many researchers. Approaching mobile devices as a tool to support learning (Quinn, 2000; Soloway et al., 2001), the definitions refer to specific technologies that are rapidly changing with the evolution of science and technology, so did not fully denote the learning. Increasing studies of m-learning, researchers focused on the traits in m-learning (Mike Sharples et al., 2007; J.

Traxler, 2009), which discovered four central constructs of mobile learning: pedagogy, technological devices, context, and social interactions (H. Crompton, 2013). Arcoordingly, H. Crompton (2013) defines m-learning as "learning across multiple contexts, through social and content interactions, using personal electronic devices". Some authors pointed out m-learning as e-learning as an extension of e-learning (M Sharples et al., 2005) or as a subset of e-learning (Winters, 2006).

A large number of researches about m-learning refer to the distinction between personal computers (desktop and laptop) and mobile devices due to their miscellaneous features of ubiquitousness and movability (M. S. H. Khan et al., 2019). In this paper, the research team identified m-learning as a learning platform where learners can study anywhere and anytime with Internet connectivity by online mode.

Method

The systematic review was one of the most relevant methods to summarize the information of researchresults of a subject area. This method could be applied to any research field, including education. Forexample, Spelt et al. (2009) represented the relationships among students, learning environment, andlearning process conditions of interdisciplinary thinking in higher education. In this study, we used asystematic review method to seek all the topics of online learning publications of education in Vietnam.

We chose the Scopus database as a source to collect data which its meta-data used to analyse. Scopuswas referred because of two reasons. First, this database provided all the information fields needed toanalyse (Luong et al., 2021), e.g., the title of the paper, published year, funding unit of research. Second, publisheddocuments in Scopus was one of the most recommendations in Vietnam (The State council for Professorship, 2020), which means that they hadthe high qualification and recognised worldwide.

In this scholar, we collected all the documents concerning online learning aspect researches of Vietnameducation. The search terms were used, including online learning, e-learning, distance learning, distanceeducation, blended learning, flipped classroom, education, Vietnam. The initial query was applied at 10AM 26 March 2021 as follow:

TITLE-ABS-KEY (("online learning" OR e-learning OR "distance learning" OR "distance education" OR"blended learning" OR "flipped classroom") AND education AND (vietnam OR "viet nam"))

The initial search showed 96 documents. Within the initial dataset, a set parameter was inputted,including:

Limitation of language: English

Limitation of subject area: Social sciences

Limitation of document type: Article

After the filtering phase, 62 documents were removed from the initial data. Next, 32 left papers werechecked the eligibility by the authors. We read each document and excluded ten papers in which theircontent did not fit this research scope. Therefore, the final dataset for analysis consisted of 22 papers.The meta-data of the final dataset was download from the Scopus database into a Microsoft Excel file.

Resulting, we conducted the analysis based on the final dataset. To answer the research questions, we used thetwo approaches. First, the statistic descriptions were applied for the first question. Meta-data of thefinal dataset were referred to to count the number of documents by their aspects. For example, thenumber of documents overtime was counted based on published year information, the number offunded documents was determined based on funding unit information. Second, we filled in the researchinformation after extracting them from full-text documents (see Table 1). Table 1 showed informationabout the online learning types, the title of papers, document types, research samples, researchmethods, research findings, limitations of researches, and suggestion for further researches. Theanalysis processing was conducted, and data visualized in Microsoft Excel.
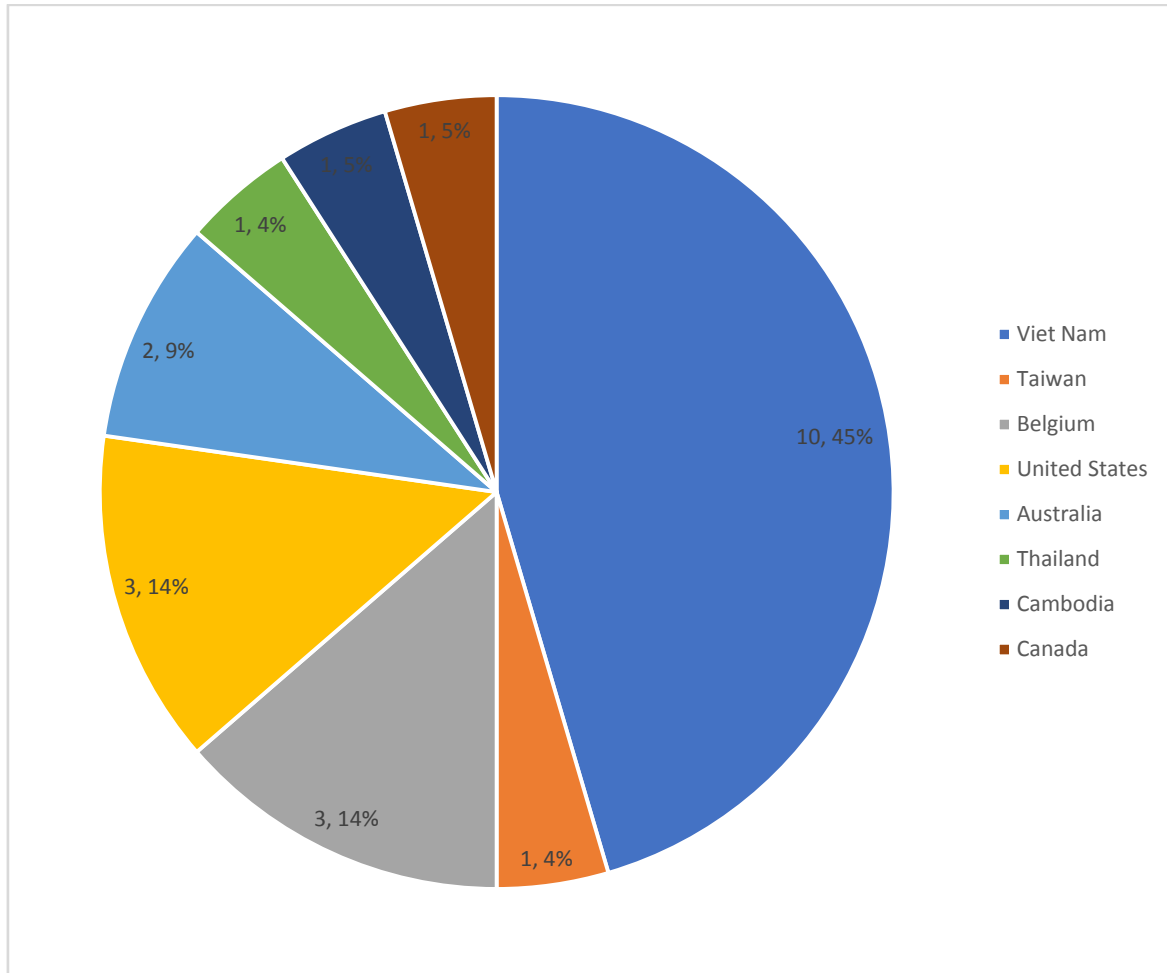
II.   RESULT AND DISCUSSION
Overview of online learning in Vietnam education
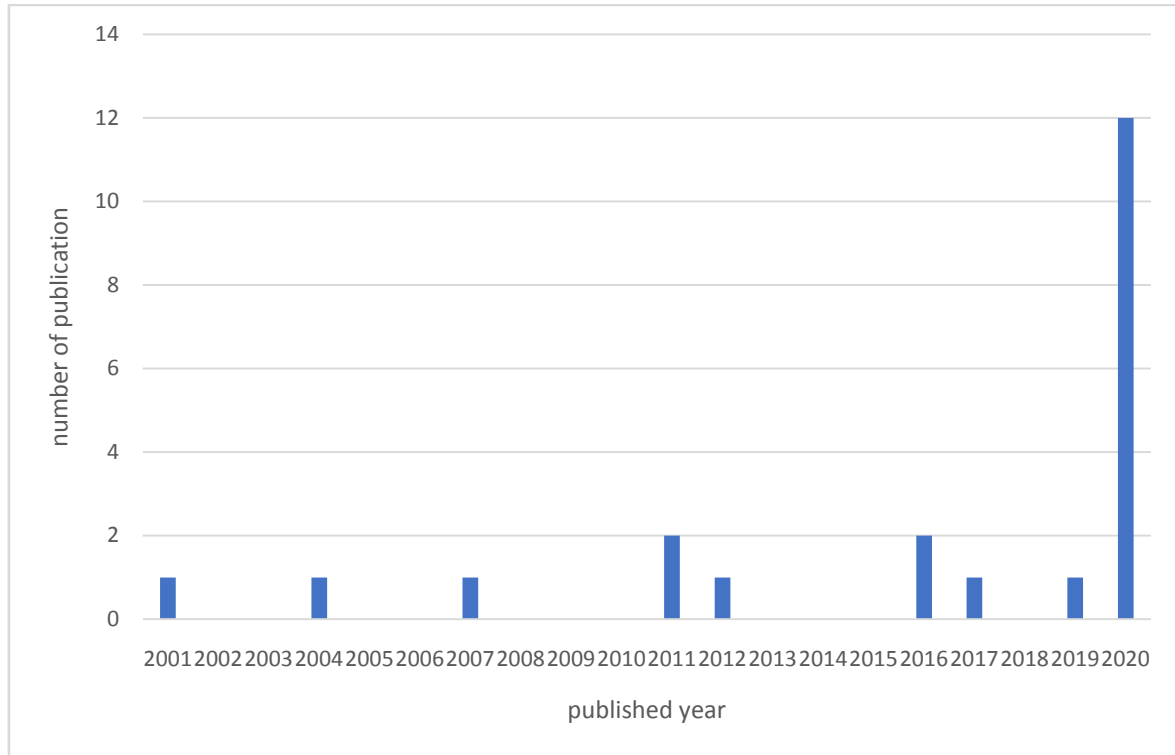
Figure 3. Number of publication of online learning in Vietnam education in the period of time between 2001 - 2020

Figure 3 shows the number of publications of online learning in Vietnam education in 20 years, from 2001 to 2020, with the total number was 22. There were just three publications in the first ten years, from 2001 to 2010, and its quantity was six times higher, with 19 publications, in 10 years later, from 2011 to 2020. However, the average number of publications for the whole period was 1.1 per year, only nine years with publications. The number of research ranged mainly from 1 to 2 publicationseach year, except in 2020 with the peak of publications, accounting for more than half (54.5%) of the total works in the whole period.

Figure 4. Number of publication of online learning in Vietnam education grouped by nationality of the first author in the period of time between 2001 - 2020

Grouping by nationality of the first author, there were eight countries that have researched on online learning in Vietnam education (see Figure 4). Not surprisingly, Vietnam was the country with the most publications, with ten publications, accounting for approximately half of the total publications, 45.45%. The United States and Belgium ranked second with the same three publications, 13.64%. Australia ranked fourth with two publications, 9.09%. Thailand, Taiwan, Cambodia and Canada also started to pay attention to this issue (one publication).
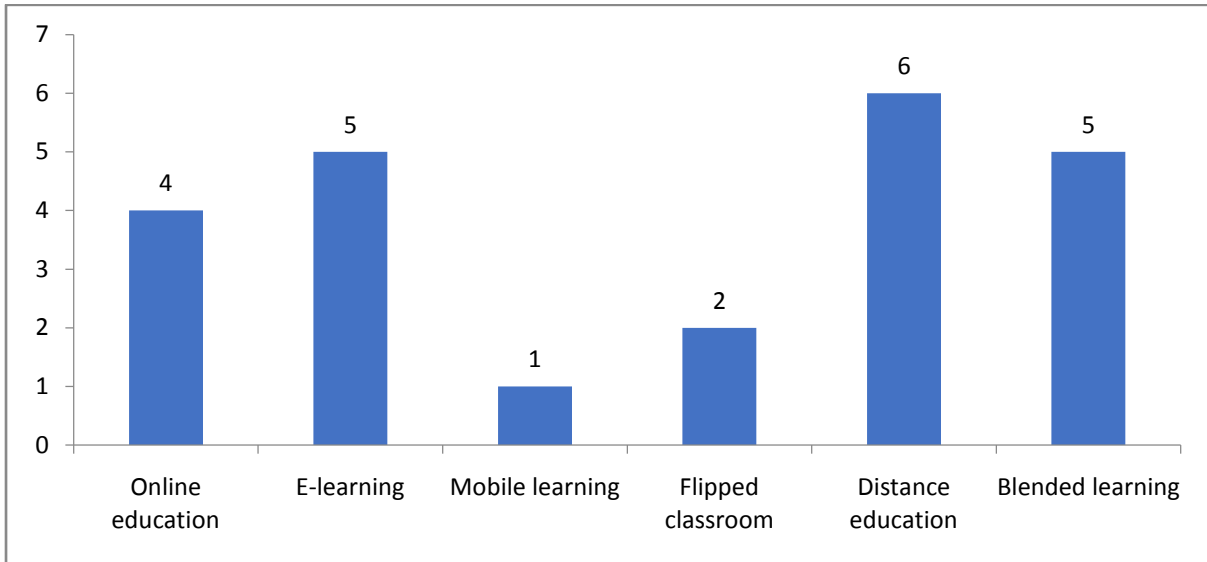
Figure 5. Number of publication of online learning in Vietnam education based on types of online learning in the period of time between 2001 – 2020

*Basing on types of online learning,*six aspects were discussed (see Figure 5). The number of publications of distance education is the highest, accounting for more than a quarter of total publications (26.1%). Followed by blended learning and e-learning together, sharing nearly a quarter (22.7%), online education reaching almost one fifth (18.2%), and the flipped classroom approximating to one-tenth (9.1%). The number of publications of mobile learning is the least, with only one publication.
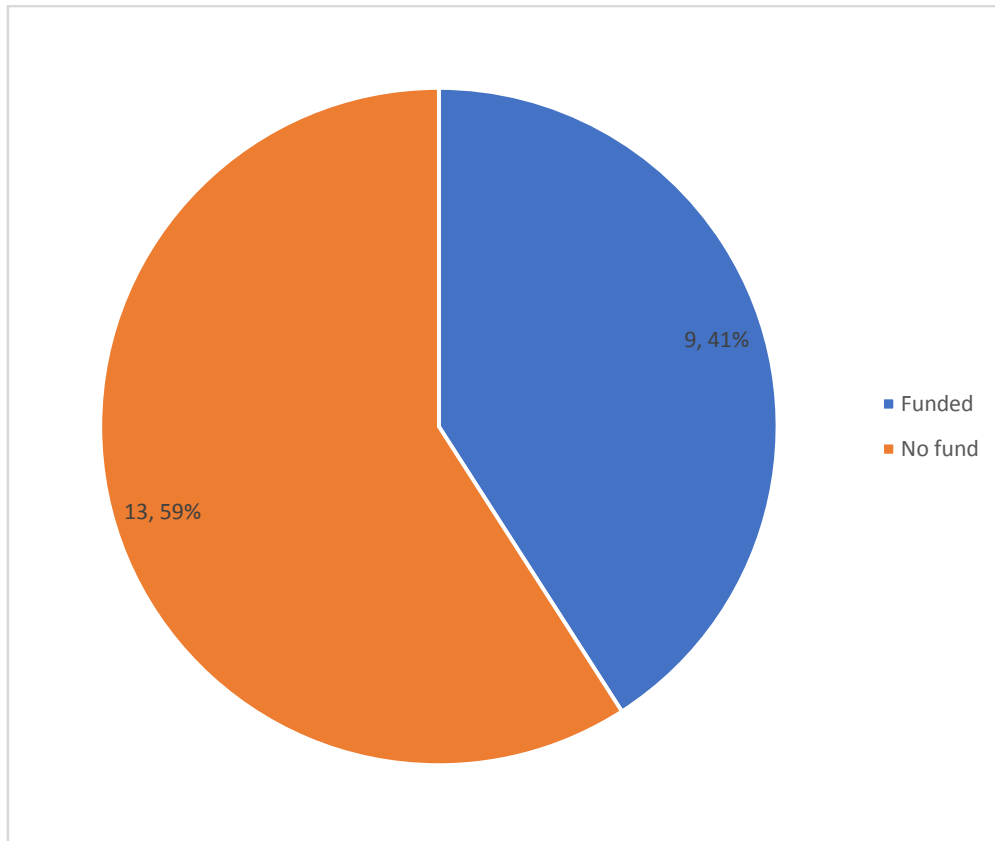

Figure 6. Number of publication of online learning based on funded research in the period of time between 2001 - 2020

Basing on research funding, only nine publications were funded, accounting for less than half of the total number of publications (see Figure 6). Within the group of funded researches, there were seven studies by

the leading Vietnamese authors, respectively accounting for 77.8% of the total sponsored research in which 70.0% of the total studies by leading Vietnamese authors, with the main financial source from the Ministry of Education and Training, and Vietnam universities. The remainder of the sponsored studies belonged to the first American author (Williams et al., 2019) and the first Cambodian author (Vuth et al., 2007).

According to Figure 3 show, the number of publications peaked in 2020, accounting for more than half of all works in the period. This is due to the influence of the Covid-19, the disruption of traditional teaching and compulsory online teaching (H. H. Pham & Ho, 2020). This forced change leads to many problems in practice that need to be solved and research, such as learning attitudes (Lin et al., 2020), teaching methods, discussion methods (Huynh, 2020).

In terms of grouping by nationality of the author, Vietnam is the country with the most publications with 45,5%, United States and Belgium ranked second with 13,6% of total publications, Australia ranked fourth and Thailand, Taiwan, Cambodia and Canada ranked the last position with 4,5%. In addition, only nine projects have been funded, of which seven projects are by leading Vietnamese authors, and the rest are sponsored by leading US and Cambodian authors. This can be easily explained in the context of the Covid-19 pandemic, and more domestic authors pay attention to the current situation and some of the factors barriers or success in online teaching for solutions to improve (Lewis et al., 2012; Lewis et al., 2016) high effective online teaching in the future (Trinh et al., 2019).

Regarding types of online learning at Figure 6 show distance learning publications is the highest, followed by that of e-learning and blended learning, mobile learning publications is the least. The number of publications on distance learning is higher because the remote of Vietnam training system has developed quite strongly in recent times (Dao, 2020), such as the distance education system of Open University, Hanoi University, or combining Topica (D. T. H. Nguyen et al., 2020) with a large number of students and participants, leading to more authors interested in research.

Research topics of online learning in Vietnam education

About online education, all the studies are related to higher education in Vietnam and some Asian countries. These studies assess student satisfaction with online education, behavioural intention towards online education, the positive impact of university autonomy on e-learning, and towards a new normal with e-learning in higher education. Some limitations of the study, such as small sample size; the application of advanced features of e-learning and educational technology to formal universities in Vietnam is still limited; Insufficient national samples; little knowledge of the e-learning market; poor and outdated infrastructure. Further research needs a long-term strategy for online education to improve interactive activities and practices of students; toward the future: how to put online education at the centre of higher education in Vietnam.

Concerning e-learning, these studies study the current situation of e-learning in Vietnam and some other countries in Asia, thereby finding out the positive influences and barriers to the development of e-learning in the future. Some limited of these studies: Small sample size, insufficient countries sample, the sample from undergraduates only or do not account for other effects of external factors... Regarding the future research direction, all the studies are expected to put e-learning at the centre of higher education in Vietnam.

With mobile learning, there is only one study by a group of authors from Taiwan, and this study investigates behavioural intention towards mobile learning in Taiwan, China, Indonesia and Vietnam. The results show that Cognitive Behavioral Control and subjective norm are influential factors in determining the acceptance of mobile learning in tertiary education in Taiwan, Vietnam, China and Indonesia. The limitation of the study is that an insufficient national sample is a limitation: There can be more variables than six factors examined; this study ignores academic acceptance of ML; does not take into account other effects of external factors. And in future tests, it will be more valuable and constructive to test whether the theory of planned behaviour patterns works well with more scholars in a variety of cultural contexts in different countries, both developing and other developed countries.

For distance learning, this is the type of research that received the most attention with six studies. These studies show the versatility of this form of learning for both education and health in today's context. Use a variety of other methods such as quantitative research, qualitative research or group discussion… to develop a curriculum and implement this geometry effectively. Some limited of these studies: Small sample size; Awareness of distance learning is limited; Poor and out of date infrastructure; Learners' ability to use English. Future research should develop from an existing explanatory framework for future trial replication and use a larger sample size to test whether current findings can be confirmed.

Concerning flipped classroom, there are only two studies in the past period (2019 and 2020) looked at what is the impact of the flipping the classroom instructional e-learning model on teachers and the structural equation model of blended learning culture in the classroom. These studies made recommendations that increase the chance of a successful implementation of the flipped classroom method. These results are limited by the fact that most of the existing research and evaluation frameworks and national cultural factors have not been mentioned. Future research needs empirical research in the future, and this model will encourage and

assisteducators to become blended teachers, encourage further discussion of teaching roles, ideas for teaching design, and systematic selection of classroom activities.

Regarding blended learning, there are five studies related to the status as well as influencing factors and student satisfaction about this type of learning in higher education. Through a literature review that combines qualitative and quantitative methods, the research findings provide recommendations for effective blended learning in the future. Limitations of these studies cannot be generalized across all disciplines; as each situation is unique, the results may vary in other contexts where personalities, resources, challenges and learning needs are different; small sample size; insufficient countries sample was a limitation, and maybe more variables factors were exam. Future research may use a more rigorous sampling approach such as multi-stage random sampling to distinguish different factors considered important for student achievement in the learning environment unify, and looking to the future: how to make blended learning the focus of higher education in Vietnam.

Table 1. Research results of online learning publication of Vietnam education in the period of time between 2001 - 2020

Type	Title	Document type	Research Sample	Methods	Findings	Limitations	Further research
Online education	Pandemic, social distancing, and social work education: students satisfaction with online education in Vietnam	Quantitive research	186 undergraduate-level social work students in Vietnam	- Descriptive Statistics; - Paired Sample T-Test	- Social work teachers and students were able to adapt to the sudden change in teaching methods - Interaction among learners has not satisfied students	- Small sample size; - Data were collected after two months of transferring to online education	- Need a long-term strategy for blended learning to improve interactive activities and practices of students
	Toward a new normal with e-learning in vietnamese higher education during the post covid-19 pandemic	Literature review		Historical method	-Describes the history and evolution of online education, namely e-learning before COVID-19 in HE within Vietnam. -Discuss how the pandemic impacted Vietnamese HE and how universities and the government responded to it. -Outline some avenues for the adoption of e-learning in Vietnamese institutions of higher learning in future	The adoption of advanced features of e-learning and educational technology into regular Vietnam university is limited	Toward the future: how to place e-learning at the centre of tertiary education in Vietnam
	Behavioral intention towards mobile learning in taiwan, china, indonesia, and Vietnam	Quantitive research	947 undergraduate	- Descriptive statistical analysis - SEM	Perceived behaviour control and subjective norm were influential factors in determining online learning, namely mobile learning acceptance in higher education in Taiwan, VietNam, China, and Indonesia	-Insufficient countries sample -Maybe more variables six factors were exam -This study ignores academics' acceptance of ML. -Do not account for other effects of external factors. -The TPB model was validated by only one scholar in each country. -The sample from undergraduates only	In future trials, it would be more constructive and valuable to examine whether the theory of planned behavior model works well with more scholars across several cultural contexts in other developing and developed countries
	The positive effects of university autonomy on e-learning under the circumstances of public universities in Vietnam	Quantitative research	Five Public universities organize e-learning	- Descriptive Statistics - Compare and analyse from statistics	Analyze the advantages of university autonomy which help to encourage this new online learning for public universities to decide to enjoy the e-learning market and clarify exactly to whom the program of e-learning will deserve	Limited of study: -Little knowledge of e-learning market -Poor and out of date infrastructure -Many public limits	Specialization is a preparation for the later step: professionalization
E-learning	Toward a new normal with e-learning in vietnamese higher	Literature review		Historical method	-Describes the history and evolution of e-learning before COVID-19 in HE within Vietnam. -Discuss how the	The adoption of advanced features of e-learning and educational technology into	Toward the future: how to place e-learning at the centre of tertiary education in

	education during the post covid-19 pandemic				pandemic impacted Vietnamese HE and how universities and the government responded to it. -Outline some avenues for the adoption of e-learning in Vietnamese institutions of higher learning in future	regular Vietnam university is limited	Vietnam
	Behavioral intention towards mobile learning in taiwan, china, indonesia, and Vietnam	Quantitative research	947 undergraduates	- Descriptive statistical analysis - SEM	In concluded that E-learning acceptance is influenced directly by perceived usefulness and indirectly by perceived ease of use	-Insufficient countries sample -Maybe more variables six factors were exam -This study ignores academics' acceptance of ML. -Do not account for other effects of external factors. -The TPB model was validated by only one scholar in each country. -The sample from undergraduates only	In future trials, it would be more constructive and valuable to examine whether the theory of planned behaviour model works well with more scholars across several cultural contexts in other developing and developed countries
	The positive effects of university autonomy on e-learning under the circumstances of public universities in Vietnam	Quantitive research	Public universities organize e-learning	- Descriptive Statistics - Compare and analyse from statistics	Analyze the advantages of university autonomy which help to promote this new online learning for public universities to decide to enjoy the e-learning market and clarify exactly to whom the program of e-learning will deserve	Limited of study: -Little knowledge of the e-learning market -Poor and out of date infrastructure -Many public limits	Specialization is a preparation for the later step: professionalization
	Application chang's extent analysis method for ranking barriers in the e-learning model based on multi-stakeholder decision making	Data analysis	Literature review some studies	- Chang's Extent Analysis Method	-E-learning success model in Vietnam: infrastructure and technology, human resources, setting, evaluation, management and execution, support and pedagogical aspect. -The proper action plan to promote e-learning development under the resource constraint	Only literature reviews and experts' judgments are conducted	Prudence must be taken in generalizing the research findings in various contexts
	The current status of learning japanese online of vietnamese students	- Gathering and analyzing information from Internet materials, magazines, etc. - Quantitative Research	-100 learners - 20 teachers in Vietnam - Information from the Internet, materials, magazines…	Aggregated, analyzed, and summarized in an easy-to-understand manner with graphs	- Some ways to improve teachers: teaching Japanese online must prepare a curriculum for teaching. Select educational method basing on the target and ability. Teachers listen to each demands and opinions of learner before taking classes that need time and studying the most helpful teaching methods because of differences in gender, age, work, and learning goals. Some ways to improve students Before they start online learning, they must establish them purpose.	Small sample size	Needed to study the most effective method for those who use Japanese online learning methods while studying Japanese now
Mobile learning (ML)	Behavioral intention towards mobile learning in taiwan, china, indonesia, and Vietnam	Quantitative Research	947 undergraduates	-Descriptive statistical analysis -SEM	-Perceived behaviour control and subjective norm were influential factors in determining ML acceptance in higher education in Taiwan, Viet Nam, China, and Indonesia. -aid designers to improve cross-cultural ML programs in Asian higher education settings.	-Insufficient countries sample was a limitation. - Maybe more variables six factors were exam -This study ignores academics' acceptance of ML. -Do not account for other effects of external	In future trials, it would be more constructive and valuable to examine whether the theory of planned behaviour model works well with more scholars across several cultural contexts in other developing and developed

						factors. -The theory of planned behavior model was validated by only one scholar in each country. -The sample from undergraduates only	countries
Flipped classroom	What is the impact of the flipping the classroom instructional e-learning model on teachers	-Qualitative research -Information from the results of the studies		-Analysed qualitative -Descriptive statistics from the others study and put in a spreadsheet and visually presented with graphics.	Made recommendations that increase the chance of a successful implementation of the flipped classroom method	This result is limited by the fact that most of the existing research and evaluation frameworks	A need for esearch in the future
	A structural equation model of blended learning culture in the classroom	Quantitative Research	339 students at the Hanoi University of Science and Technology	-Factor analysis - SEM	-This study achieves its purpose to explore the factors of blended learning culture in the classroom -Explored the core factors of the blended learning culture. -The SEM-values analysis for the existence of blended learning culture in the classroom has showed that they positively affect the acceptance of blended classrooms by students.	National cultural factors have not been mentioned	Teaching roles, ideas for teaching design, and systematic selection of classroom activities.
Distance education	Motivating hiv providers in vietnam to learn: a mixed-methods analysis of a mobile health continuing medical education intervention	Mixed-Methods study	-48 HIV specialists -30 participants	Group discussion	In this randomized controlled trial, study has proven that the intervention (1) improved self-study behaviors, (2) improved medical knowledge, and (3) was acceptable to the target population.	Small sample research	This study also developed an explanatory framework for future trial replication
	The impact of a flipped classroom design on learning performance in higher education: looking for the best blend of lectures and guiding questions with feedback	Quantitative Research	90-second-year undergraduate students at of the School of Education at Can Tho	-Descriptive statistics - Posttest measures - Pretest measures -ANCOVA	-Learning performance was superior in the FC (Flipped Classroom) setting as compared to other learning settings TL (Traditional Learning), EL and BL. -Students in the EL setting had a lower learning performance as compared to the BL -Studying in an FC setting had a positive effect on self-efficacy beliefs and intrinsic motivation, but not on perceived flexibility.	The sample size.	Future research should use larger sample sizes to check whether the current findings can be confirmed.
	Flexible learning: evaluation of an international distance education programme designed to build the learning and teaching capacity of nurse academics in a developing country	Quantitative Research	175 Vietnamese nurse academics	-Descriptive statistics -The online discussions	Describe the design and delivery of a Distance Learning Programme for international nurse academics as well as report on programme evaluation findings (the QUT Distance Learning Programme)	entry to the Distance Learning Programme was predicated upon an ability to speak and write English	While these study results show the DLP to be successful, it will be how Vietnamese academics use and build these skills which will measure the real success of the program in the future.
	The adoption of blended e-learning technology in vietnam using a revision of the technology acceptance	Quantitative Research	396 students in Vietnam.	-Descriptive statistical -SEM	The effects of three factors (the English language capability of individuals, the functionality of BELS, and the interaction between teachers and students) on an attitude of the individual to BELS	It was identified in relation to the numerous forms of reliability and validity that apply to the evaluation of variables and the overall	The four hypotheses that were not supported, which involved influences due to three personality traits

	model				and the ease of using BELS, found to be an important mediator in effects on attitude.	research design.	(Extraversion, Openness, and Neuroticism), be examined again in future studies.
	Bilingual asynchronous online discussion groups: design and delivery of an elearning distance study module for nurse academics in a developing country	Literature review	32 Vietnam Nurse Academics from eight differentcolleges and universities across Vietnam were enrolled in the first iteration of the learning and teaching distance module.	Online discussion group	-Describe the design of a distance learning module for foreign cor-respondents as well as report on its delivery. Specifically it -Examines the lessons learnt and subsequent changes made for the second iteration of the module.	Limited access to educational resource materials and databases	Will apply the teaching strategies that I've learnt from this module for my school
	The positive effects of university autonomy on e-learning under the circumstances of public universities in Vietnam	Quantitive research	Five public universities organize e-learning	- Descriptive Statistics - Compare and analyse from statistics	Analyze the advantages of university autonomy which help to promote this new online learning for public universities to decide to enjoy the e-learning market and clarify exactly to whom the program of e-learning will deserve	Limited of study: -Little knowledge of distance learning, namely the e-learning market -Poor and out of date infrastructure -Many public limits	Specialization is a preparation for the later step: professionalization
Blended learning	Students performance in blended learning: disciplinary difference and instructional design factors	Quantitative Research	571 students at a public university in Vietnam	-CFA -independent t-tests -correlatitoanalysis	Students in hard disciplines obtain lower grades than peers in soft disciplines. Clear expectations and goals, material quality, and collaborative learning are significant predictors of students' performance.	The result cannot be gen-realized across all hard and soft disciplines.	Future studies can employ a more rigorous sampling approach such as multistage random sampling to discern the different factors deemed significant to students' performance in the blended learning environment
	Continuing professional development for rmit international university vietnam library staff: adding value through an international partnership: a case study	Quantitative Research		--Participant feedback on Workshops -A customer survey -A project-end survey of participants' behavioral changes against learning topics as self-reported -Discussion with participants	Explore the effectiveness of blended learning and culturally sensitive program of professional development in an Australian university working in Vietnam. - Design and deliver a continuing professional education program to meet the needs of librarians working at RMIT International University VN	-Limited about context; each situation is unique; learning needs are different	Blended learning was the model is worthy of consideration as a strategy for application in other contexts and in other studies.
	Pandemic, social distancing, and social work education: students satisfaction with online education in Vietnam	Quantitive research	186 undergraduate-level social work students in Vietnam	- Descriptive Statistics; - Paired Sample T-Test	Students' level of satisfaction with online teaching was significantly lower than that of face-to-face teaching on all criteria	- Small sample size; - Data were collected after two months of transferring to online education	- Need a long-term strategy for blended learning to improve interactive activities and practices of students
	Toward a new normal with e-learning in vietnamese higher education during the post covid-19 pandemic	Literature review		- Historical method	-Describes the history and evolution of e-learning before COVID-19 in HE within Vietnam. -Discuss how the pandemic impacted Vietnamese HE and how universities and the government responded to it. -Outline some avenues for the adoption of e-learning in Vietnamese institutions of higher learning in future	The adoption of advanced features of e-learning and educational technology into regular Vietnam university is limited	Toward the future: how to put blended learning at the centre of higher education in Vietnam
	Behavioral intention towards mobile	Quantitative Research	947 undergraduates	-Descriptive statistical analysis -SEM	-Students tend to follow other students' decisions to use or not use	-Insufficient countries sample was a limitation. -	In future trials, it would be more constructive and

				ML. -Facilitated service providers and decision makers in formulating appropriate strategies to enhance the uptake of ML activities. -Help to understand the issues facing ML adoption in different cultural settings and contribute to the design and adequate provisions of ML programs.	Maybe more variables six factors were exam -This study ignores academics' acceptance of ML. -Do not account for other effects of external factors. -The TPB model was validated by only one scholar in each country. -The sample from undergraduates only	valuable to examine whether the theory of planned behaviour model works well with more scholars across several cultural contexts in other developing and developed countries
learning in taiwan, china, indonesia, and Vietnam						

III. CONCLUSION

This article provides an overview of publications of online learning aspect in learning forms in Vietnam education in the period of 2001-2020. Specifically, the study highlights the development of publication quantity as well as the research results of online learning in the Vietnam context, including aspects such as research category, research sample, analytical methods, findings, limitations, and further research. It is found that the context of the Covid-19 in Vietnam prompted authors to do various researches on this topic.

However, the limitation of the study is that gathered information was from a single data source, Scopus, and included only articles in English. This means that articles in other languages (e.g. French, German, Russian, etc.) and other types of document (e.g. data paper, editorials, notes, etc.) in the Scopus database, as well as studies outside the Scopus database are not mentioned. Therefore, future studies should expand the data sourceto get a wider picture of the research results of online learning in Vietnamese education. In addition, the studies can be classified according to the research problem.

This systematic review study can help researchers, educators and education practitioners to more insight about learning online aspect in learning modes in Vietnam.In this study, the findings may be useful in the exploration of potential research areas and identification of neglected areas in the field of online learning modes in Vietnam.

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