Original article

Digital Transformation Trend in Vietnam Higher Education: Blended Learning Model

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Abstract

In the era of digital technology, higher education in Vietnam should plan strategies for developing a blended learning model, in which, besides improving face-to-face learning activities, investing in online learning activities is a strategic goal not only to expand the learners's market share but also to transform the training model to use technology for modifying and improving the quality of education. The paper focuses on the study of forms and levels of combined learning models, discussing the situation and solutions for applying blended learning models to higher education institutions in Vietnam.

<u>*Keywords:*</u> *Face-to-Face Learning, E-learning, Computer-based Learning, Blended Learning.*

1. Research interest.

New technologies, especially digital technology in the modern society has had the big impact on learning abilities in the distribution channel, enable this form of learning to gradually reach the scope that previously belonged to direct channel, increase the level of integration of teaching elements through computers into traditional face-to-face learning experiences. This form of integrated learning has greatly developed and become popular in the world especially in higher education, not only because of the technology available but also because of the benefits itself such as improving pedagogy, increasing access ability and flexibility, cost-efficient. In Vietnam, although applying technology in teaching initially began from distance learning followed the E-learning model, it triggered the transformation of experience in learning from Face-to-Face learning to E-learning creating blended learning environments in some modules. However, to effectively apply this model, higher educational institutions in Vietnam need to have a strategic plan, which, clearly defines the schedules, contents combination, objectives combination, and the concentrated points that need to be invested in, prepared.

2. Literatures reviews.

In the early 1990s, the concept of E-Learning has firstly appeared, which created the introduction of the Blended Learning model (Senge, 1990). Since then, E-learning has developed toward the integration with Classroom learning. Initially, these two learning environments were almost separated because they used different methods and forms to meet the needs of a variety of subjects. While Face-to-Face learning focuses on integration among people in the specified area, E-learning concentrates on integration through learning tools and implement from distance (Figures 1)

Figures 1. Different between Face-to-Face learning and Distance learning

Face-to-Face learning	Distance learning
- Concentrated (Face-to-Face);	- Distributed;
- Time consistent;	- Time lag;
- Interact among learners;	- Interact through tools, machince;
- Based on human senses .	- Based on documents, text.

Technological innovation, especially digital technology has had a huge impact on the ability to learn in a distributed environment, enabling it to gradually reach the scopes that previously belonged to the direct environment. According to Graham (2005), current communication technologies allow us to have synchronized distributed interactions occurred in real-time with the same level of sensitivity as in a direct learning environment. There is a rising concentrate on human interaction with the support of computers, virtual communities, instant messaging, and blogging. Today, the widespread applying of available digital learning technologies has led to an increased level of integration of teaching elements through the computer to the traditional offline learning experiences. Syschronisying technologies with high liability mediated the interactions between instructors and learners through computers have replaced more traditional face-to-face interactions. The forms of blended learning have more developed and popular not only the technology available but also benefits it has: (1) It enables pedagogical improvement; (2) Increase accessibility and flexibility; (3) Increase cost-efficiency.

The term Blended Learning has appeared from the early 21 century and has been widely used in both academic and business until now. Since 2003, the American Society for Training and Development has identified Blended learning as one of the top ten trends in knowledge distribution (Rooney, 2003). To clarify the implications of blended learning, many technology educational researchers have tried to answer the question "What has been combined?". As a result, there are three different answers: (1) Combine Instructional Modalities or Delivery Media; (2) Combine Instructional methods; (3) Combine Online and Face-to-Face Instruction. According to Graham (2005), it is difficult to find any learning system which is not relevant to Combine Instructional Modalities or Delivery Media, therefore, the answers for the research question could not be the first 2 results. Hence, he defined "Blended learning systems combine face-to-face instruction with computer-mediated instruction". However, in 2012, he and his colleagues re-defined "Blended learning is a diverse and expanding area of design and inquiry that combines face-to-face and online modalities". This showed that "Blended learning" is the definition of meaning that continuous development by the time and level of technology implements in training and educational activities.

Forms and level of Blended learning

Based on the objectives that Blended learning aims to, previous studies conducted by Graham, C. R. et al, 2005/ 2012 has indicated 3 different forms as follow:

– Enabling Blends: this helps learners to have learning experiences through different methods. For example, learners can listen to guest speakers present through online meeting rooms instead of participating in a presentation presented by a businessman in the hall.

– Enhancing Blends: this allows us to increase pedagogical activities without changing teaching methods. For example, traditional Face-to-face learning remains the same while learning resources or added experiences could be through online channels.

– Transforming Blends: This allows us to transform pedagogical methods. For example, changing model from passive learners to active learners who actively create their learning schedule, actively access knowledge through interactions as well as use learning advisory facilities/learning results analysis thanks to digital technology.

Besides, many studies related to educational technology have pointed out four levels of combinations: Activity-Level Blending, Course-Level Blending, Program-Level Blending, Institutional-Level Blending:

– Activity-Level Blending: A combination at an operational level occurred when the learning activity contains both forms: Face-to-Face and online.

– Course-Level Blending: Combination at the course level requires the combination of the live activities and online activities separately in the course. The combination could be at the same time, also could be reasonably arrange based on time series.

– Program-Level Blending: Combination at program level normally require learners to choose to combine online course and in-class course or combine both regulated by program providers.

– Institutional-Level Blending: many cooperations (such as IBM) as well as higher education institutions are creating a combination model at the organizational level. Depends on the organization, the combination might be varied. For example, students could take part in online courses in the summer semester when they do not have to go to class or students who have semester begins and finishes directly could join online course during the program. In firms that are out of the field of training, providing online courses is not necessarily come from having scattered staff and workplaces.

3. Discussion and recommendations

In Vietnam, applying technology to training activities from the early years of the 21st century with initial concepts such as Distance Learning or e-Learning. In March 2005, the first time in Vietnam, a seminar on e-Learning "Research and implementation of e-Learning" jointly organized by the Institute of Information Technology - Vietnam National University, Hanoi) and the Faculty of Information Technology - Hanoi University of Science and Technology. Until now, Vietnam has joined Asia e-Learning Network - AEN, (www.asia-elearning.net) with the participation of the Ministry of Education and Training (MOET), Ministry of Science and Technology, Hanoi University of Science & Technology, Ministry of Information and Communications,. ICT department, MOET has launched e-Learning to systematically provide e-Learning information in the world and Vietnam.

MOET has also made many positive actions to encourage applying technology to teaching, transfer knowledge of e-Learning to managers, teachers, those who have education interest, pupils, students, make e-Learning website (http://el.edu.net) to propagate, popularize technology, translating software to Vietnamese with opened source, moodle (to build and manage e-Learning system), used SCORM technology (a standard which the world accredited, be able to cooperate and develop in information technology field) and was implemented to transfer free tools to create lessons that meet international standard and generate types of formats meet SCORM standard such as Exe, Lectora, Violet..., which meet our country's needs.

Higher education institutions in Vietnam have implemented e-Learning to mainly support teaching and study with the Blended Learning model. Open-source learning management system, moodle is being used at most Vietnamese universities, built as called LMS - Learning Management System web application including many different functional modules allowing to manage

completely from the teaching content to the learning process, the process of assessing the learning results of each student in each course. Besides, the system also integrates services to support the process of exchanging information between lectures and students and among students, including services like: Assigning tasks to learners (readings, exercises); Offline interaction (Offline forum, email),… Until now, it can be said that the number of courses opened on the LMS system is rising, but the quality is not high, the scope and participants are limited, lack of interaction, not enough investment in technology facilities. The proportion of online hours between lecturers and students is still low, instruction responses have been done are not signed in the real-time. Assessing the quality of LMS usage is not frequent and not as scheduled. Therefore, many people are skeptical about the quality of online learning (online part), traditional Face-to-Face learning psychology is still deep in the mind of learners.

In the era of digital technology, higher education in Vietnam should plan strategies for developing a blended learning model, in which, besides improving face-to-face learning activities, investing in online learning activities is a strategic goal not only to expand the learners's market share but also to transform the training model to use technology for modifying and improving the quality of education.

Choosing forms and level of Blended learning
Figure 2 below showed that currently, most of the higher educational institutions in Vietnam have just applied at an individual activity level, focusing on providing online lectures or providing learning materials, ebooks instead of traditional paperback textbooks. In some places, some modules, lecturers have taken advantage of the existing facilities of LMS (on Module platform) to be able to perform combination at the course level, such as transferring tasks to learners and assessing the process of working online.
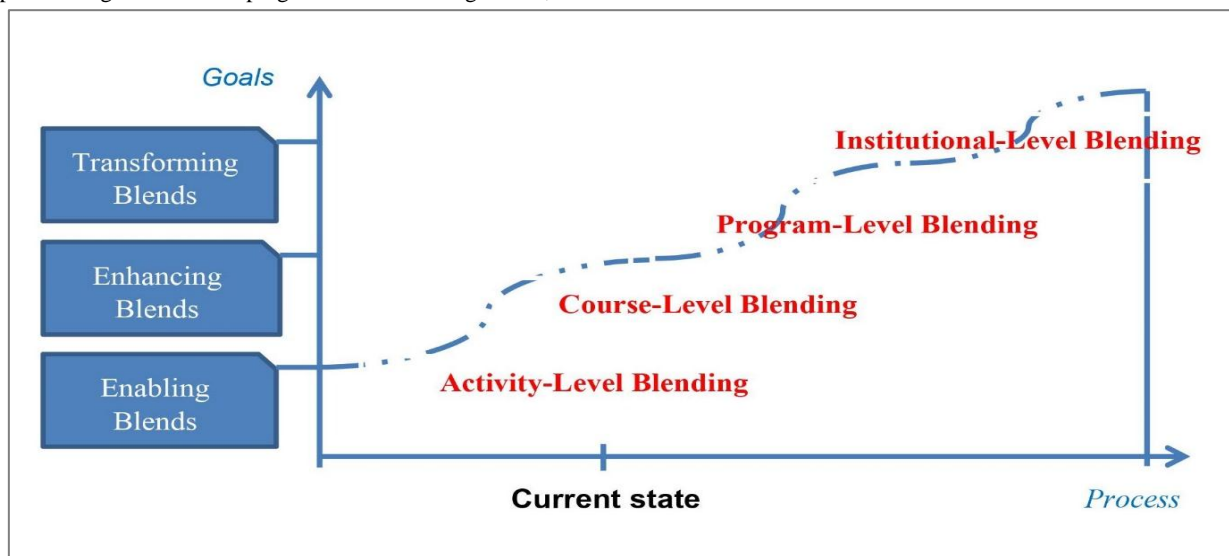

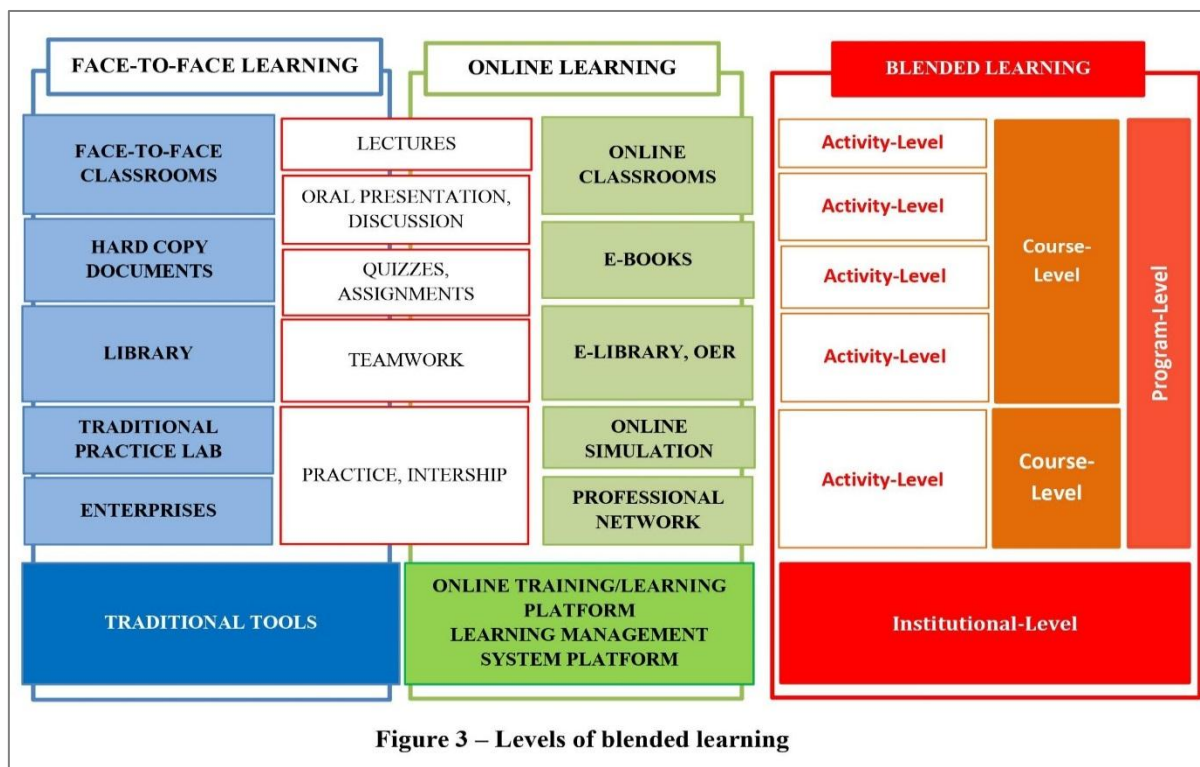**Figure 2 – Strategic goals for developing blended learning models**

Figure 3 – Levels of blended learning

Higher education institutions in Vietnam need to plan strategically to develop blended learning, in which identify the objectives and contents for each combined level in every specific time:

1) At the moment, boost combination at the activity/course level but do not stop at the "activation" level as what previously had been done, aim to "enhance" and provide the learning experiences to learners. Accordingly:
   - In each module, depending on the nature and content, it is necessary to determine which activities are suitable to switch to online, which activities need to remain face-to-face. For example: while lectures are switched online, the course assessment activities remain in class;
   - In every activity of the module, it is also necessary to determine the offline or online forms for each specific content. For example: switching a practical seminar session to online instead of offline in the hall;
   - The online transition should increase the learning experience for students, not just to change the approach. For example, learners will be provided with many reference materials besides the main curriculum, assigned many exercises to be able to self-practice and self-evaluate competencies on LMS to enhance self-study capacity.

2) In the long run, it is necessary to implement blended learning at the program level. Accordingly, the modules and activities of a training program will be re-designed to the blended learning direction: some modules are only face-to-face teaching, some modules are only online, and some are combined with both ways. The implementation can be in many ways:
   - Fixed plan: The learners will register and participate in the modules (face-to-face/online) as a designed program;
   - Flexible plan: Learners can choose flexible plans depending on the reality and individual needs. For example, students can sign up for a distance online course during the summer semester to early accumulate, accumulate extra or resit in failed modules. To implement this plan, institutions should almost be able to organize the training program in both face-to-face and online independently and students will actively plan their learning schedules. In fact, at that time, blended learning model was at the organization level, the institutions invested in not only to transform classroom activities and courses from face-to-face to online but also transfer all activities including registration, academic management, lectures, finance ... to online even though those activities are being taken place in an unscattered area.

Important notes when implement blended learning
(1) Invest to enhance face-to-face learning environment
Although there are more and more learning activities and the course could be switched to the online form, it does not mean that e-learning will be able to completely replace face-to-face learning. Because of the nature and content, some activities, courses can be only delivered in face-to-face learning. However, even if in the case of maintaining the old way, the learning environment should be changed:

- **Professional training and pedagogy for instructors:** The instructors' role will be more vital, shifting from knowledge transfer to the role of guiding students on how to approach and solve problems. The requirements for the instructors are not easy, to be more specific, teachers are required to have a high level of professional knowledge and pedagogical skills that can help students proactively find out, organize, select information and it does not just stop at the level of understanding, it is also required to utilize, analyze, summarize and criticize. The direct interaction between learners and lectures as an important part of the quality of education has a strong impact on learners' emotions, which is the motivation to help learners self-discover and proactive in building personal knowledge and creating new knowledge for society.

- **Redesign offline classroom:** Design traditional classroom to provide seats for learners arranged in rows, with a stage for instructors is in front. This design was shaped by the logic that the main purpose of the classroom is to focus on the presentation of speakers. This design should be replaced by a new design which meets the requirements of encourage the initiative of learners, encourage "participation culture", build and develop knowledge of each learner, instructors work more as consultants instead of presenters. Offline classroom space needs to be designed as a team-based classroom, also known as scale-up or active learning classrooms. Classrooms do not have the "Front" of the stage traditionally. Facilities, technology have been well equipped with active working method: wireless, one or more screens displayed around the room, wireless projectors ensure fast connect from any computer, the power supply is widely available, portable interiors to suit to any customization depending on the objectives and working topics.

Traditional classroom	New classroom
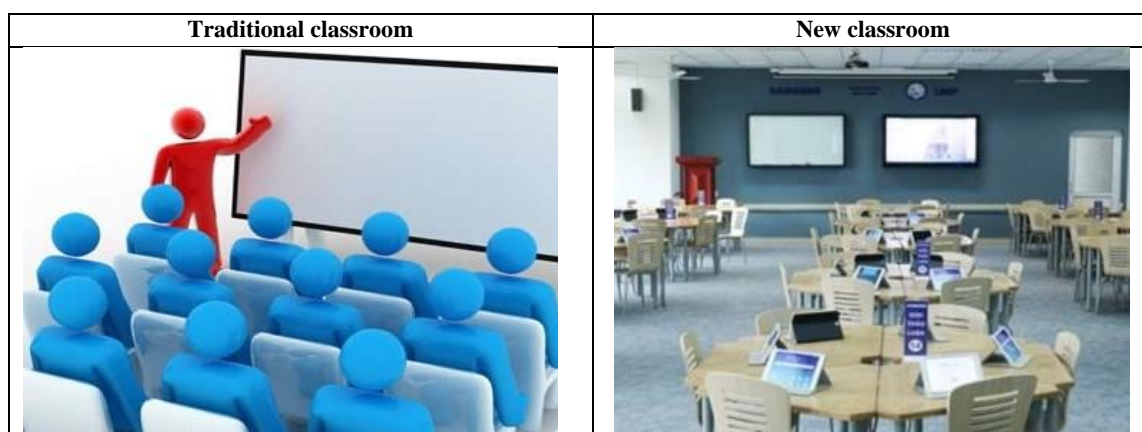
Figure 3: Trend of Face-to-Face learning classroom

(2) Stick to the learning outcomes of the courses, activities and curriculum

The learning outcomes are considered as the commitment and affirmation of the educational institutions to the society, employers, learners about specific tasks that learners will be able to do, knowledge, skills, attitudes that students will obtain after being taught at the school. At the university, in each program or module, the learning outcomes are presented as a list of the knowledge, skills, and attitudes students should obtain (expected to have) after completing modules or the courses. Choosing face-to-face or e-learning or combine both for study activities, a module or the whole course does not purely follow the trend of applying new technology, it has to ensure learners to meet the learning outcomes most feasibly and effectively.

(3) Develop e-Library and using open educational resources

Education researchers have long been predicted the disappearance of traditional textbooks like the disappearance of videotapes and discs in the music industry and movies in the photography industry and the formation of open educational resources (OER). When applying the blended learning model, instead of reading hard-copy materials and textbooks, students taking courses will be provided with ebooks or look up and use OER which is more available on the internet. Today, publishers also have to change their business strategies which gradually shifting from providing learning materials to providing educational services, profits they create are not from the sale of content, instead of providing software and value-added educational services such as assessment support, results evaluation, providing learners' information system and platform to manage the course. Since then, important recommendations for higher education institutions are:

- **Stopped plans to publish paperback materials, textbooks.** Instead, having a plan to cooperate to utilize OER of well-known publishers who have switched to digital. This way, not only learners could access the latest knowledge in the world but also instructors could use added value education services.
- **Having a plan to replace the traditional library**, which occupied a lot of spaces. E-Library model goes beyond space, time, and can integrate many data resources to research and study.

(4) Using Mobile Computing Technologies

It is different from 2 decades, either students or lecturers were able to equip smart devices. In the recent decade, thank to the reduction of devices, everyone could own one or more devices which could connect to the internet (laptop, tablet, smartphone). At the same time, the revolutionary developments of mobile computing have created new trends for teaching, allowing students and instructors to personalize their environment. To create online switching conditions, institutions need:

- **The applications that support interaction** between lecturers and students, between students and other departments in the school;
- **Transforming activities that are adaptable to the mobile environment**: Developing online classes which are compatible with the mobile environment, transferring functions of LMS to run on the mobile environment;
- Corporate with mobile service providers to establish a mobile intranet on the campus to create a "mobile-first approach" mechanism. Students only need to be allowed to log in to the mobile network, they can access services later (access materials, participate in online classes)

within the scope that they have registered or been allowed.

(5) Investing in Learning Analytics application, Integrated Planning and Advising Services

The implementation of a blended learning model at the program and organizational level allows students to be proactive in planning their learning schedules and flexibly implementing it according to their needs and practical circumstances. Educational institutions need to invest in Integrated Planning and Advising Services - IPAS and Learning Analytics to meet personal needs, provide learners more learning experience options, also boost success for learners. Lectures and course managers could provide advisory to the right person timely, help them build-up, and maintain positive learning attitudes.

(6) Prepare psychology and skills for instructors and learners

Despite the advantages that blended learning brings, the unwillingness to change remains a major threat to blended learning at the organizational level (Vaughan, 2007). Blended learning is even considered a dangerous concept (Seife, 2000) in which it threatens the integrity of traditional pedagogy methods when encouraging the use of online and mobile technologies. The blended learning model has affected all levels of education. Therefore, there might be the reactions to blended learning with different reasons:

- For instructors, rising from the lack of technical skills as well as the scare of changing pedagogy methods;
- For learners: Switching to e-learning requires high self-discipline while time management skills of learners have not been well equipped or in completed especially at the early stage of courses, which made the results from e-learning may be unsatisfactory. On the other hand, the implementation of an integrated model at a high level, the amount of online learning experience (knowledge, exercises) increased significantly, if the assessment of the learning process is inappropriate, learners might have no motivation to participate.

Therefore, to boost blended learning, besides investing in technology, step by step in content planning, it is necessary to prepare an appropriate mindset and equip skills that are lacked to all parties. In the long term, an appropriate environment for digital transformation is essential to form a complete system for a blended learning environment.

Data Availability

All data generated and analyzed are available in this paper

Conflicts of Interest

The author(s) declare(s) that there is no conflict of interest regarding the publication of this paper.

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