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Review of Higher Education Policies during Pandemic Covid-19: A Vietnamese Perspective

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ABSTRACT
The pandemic caused by Covid-19 has encouraged significant changes in higher education. Training curricula at universities have been adjusted to adapt to the blended learning model for the past two years in Vietnam. This paper is a qualitative analysis of higher education policies during the Covid-19 pandemic. The authors have based on data collected from universities combined with interviewing experts to evaluate the effectiveness of policies applied in Vietnam. In addition, the paper also analyzes the difficulties that universities face in ensuring the quality of training and enrollment sources during a pandemic. Research results also show that Vietnam is facing fundamental challenges in higher education. The higher education system must build a foundation for reforming online training programs and innovating university governance. Finally, the paper also proposes strategic education policies in developing the higher education system to meet the requirements of the Fourth Industrial Revolution.

Keywords: Covid-19, higher education, online training, blended learning, education policies, digital transformation.

1. INTRODUCTION

Humanity is witnessing dramatic changes in the digital age of the Fourth Industrial Revolution and the far-reaching influence of science and technology on people's lives. The essence of the Fourth Industrial Revolution is the application of technology, data science, and artificial intelligence for production and human life. In general, the revolution is having a profound impact on all aspects and areas of economic, political, and social life in countries around the world, and it will be unlike anything humanity has ever experienced in its scale, scope, and complexity (Schwab, 2016; Phan, 2018). In that general trend, taking advantage of opportunities and overcoming challenges brought about by this revolution, in the end, depends on people. People with enough qualities and capabilities will promote the advantages and overcome the challenges brought by this revolution. The traditional method of education, which has been applied in all countries and most universities in the world in general, and Vietnam in particular, proved ineffective when the Covid-19 epidemic broke out and took place in a highly complex context. Before that, the Fourth Industrial Revolution began to creep into many fields, including education; many universities in Vietnam have started researching to implement digital transformation. However, universities are only interested in digital transformation when the Covid-19 pandemic breaks out and lasts. At the beginning of 2020, the history of the modern world witnessed unprecedented changes in many economic and social fields. Many social activities have been delayed locally, nationally, and globally due to the Covid-19 pandemic. When education, an indispensable need of the people, is met every day, people suddenly have to face how to be educated. When direct education in universities is not possible, the problem of digital transformation becomes the solution at many levels, from micro to macro. Many universities and learners themselves are also met with learning needs.

In December 2019, a pandemic caused by SARS-COV 2 (commonly known as coronavirus) hit the entire planet, causing devastating effects in areas such as health, the economy, and education (Babbar & Gupta, 2021; Geldsetzer, 2020; Pather et al., 2020; Toquero, 2021; Javier et al., 2022). First of all, students are directly affected by the Covid-19 pandemic. Covid-19 has severely disrupted the on-campus learning of most university students. According to UNESCO data, after the outbreak of the disease, nearly 1.6 billion pupils and students worldwide were affected; 188 countries were forced to close schools and universities nationwide, affecting 91.3% of the total number of students worldwide (WHO, 2020). As for the curriculum, most universities have made significant changes in both teaching methods to adapt to the Covid-19 epidemic. According to the International Association of Universities, about two-thirds of higher education institutions in 185 countries have had to close their universities, switching from teaching and learning in the traditional classroom to the online

teaching and learning model. In Vietnam, the Ministry of Education and Training (MOET) issued a regulation that 'stop going to school but do not stop studying' in the early stages of the Covid-19 pandemic. As a result, 110/240 universities in Vietnam have switched from face-to-face classes to distance learning and teaching. According to UNESCO, more than 23.4 million students in higher education institutions are affected (UNESCO, 2020). Particularly in Vietnam, students still cannot return to university after the long Tet holiday due to the epidemic crisis. Students who graduated during the outbreak of the epidemic faced many difficulties in finding a job, possibly even falling into unemployment during the economic downturn. A portion of recent graduates accepts low-paying jobs that have a lasting impact on their careers (Nguyen & Pham, 2022b).

As the pandemic has progressed globally, governments worldwide have implemented a series of measures designed to prevent the spread of the virus. Universities and colleges were among the first to close. As a result, universities have implemented distance learning methods, using different formats and platforms (with or without using technology), support, and mobilization of education and community staff. Universities have had to find ways to adapt and continue their commitment to science and education (Thomas & Foster, 2020; Crawford, 2020). The Covid-19 pandemic has caused negative impacts on most socio-economic fields, in which education is one of the most affected areas, especially the higher education system. In addition to shifting traditional training activities to distance and online, universities worldwide face many difficulties when the economy has declined due to the epidemic. Due to the economic damage that Covid-19 has caused, the financial resources of universities are also negatively affected. Significantly reduced budgets cause higher education institutions to cut costs, increase tuition fees, enroll more students, or even change operating models by merging or closing universities (Blankenberger & Williams, 2020; Darras, 2021). In addition, universities' revenue has also been severely reduced due to having to provide financial support to students who have suffered damage, reducing the value of the university's assets due to severe financial market losses. Housing is damaged due to many students having to return home, cancel their courses, and reduce revenue from charitable activities (Darras, 2021; de Boer, 2021; Javier et al., 2022). Young researchers and teachers looking for work are among the hardest hit by the epidemic. The number of universities frozen in recruitment is rapidly increasing, including top universities (Le, 2018; DeMatthews et al., 2020). Due to financial hardship, many universities also have to reduce staff numbers or reduce staff salaries. The complicated evolution of the epidemic may even push universities to face the risk of permanent closure and bankruptcy, leading to the unemployment of millions of teachers and staff at higher education institutions. In addition, the interruption of learning and teaching will cause a delay in the payment of tuition fees for students and thereby affect the salaries of teachers and staff (Nguyen & Pham, 2022a; Javier et al., 2022).

However, on the positive side, Covid-19 has allowed universities to access more online teaching, learning, and working methods, helping to improve information technology skills for both lecturers and students, encouraging students' self-learning ability and sense of self-study as well as promoting the development of the university's information technology system and digital transformation. Simultaneously, Covid-19 also helps universities improve their sanitation systems and medical and healthcare services to strengthen disease prevention and improve the pedagogical environment more positively. On June 3, 2020, the Prime Minister of Vietnam signed Decision No.749/QĐ-TTg approving the national digital transformation program up to 2025, with orientation to 2030, clearly stating the vision by 2030, Vietnam's goal is to "become a digital, stable and prosperous country, pioneering in experimenting with new technologies and models; fundamentally and comprehensively renovate management and administration activities of the Government, production and business activities of enterprises, people's ways of living and working, developing a safe, humane, and widespread digital environment" (PM, 2020). Decision No.749/QĐ-TTg clarified that for digital transformation in education, it is necessary to (i) develop a platform to support teaching and learning remotely, and thoroughly apply digital technology in management, teaching, and learning, digitizing documents and textbooks, build a platform for sharing teaching and learning resources in both face-to-face and online forms, and (ii) developing technology for education, towards personalized training (PM, 2020). In this Decision, the digital transformation in the field of education also represents the goal of achieving 100% of educational institutions implementing distance learning and teaching, in which pilot training programs allow students to study online at least 20% of the program's content. Using digital technology to assign homework and check students' preparation before going to class. Regulations on training at undergraduate and postgraduate levels promulgated by the MOET also allow courses with up to 30% of the time to be studied online, and higher education institutions can organize for students are allowed to take the exam and defend their graduation thesis in the online form if they meet all the conditions for information technology infrastructure (MOET, 2021c).

Facing the complicated development of the Covid-19 epidemic, the MOET has implemented many important tasks and issued many guiding documents, supporting localities and educational institutions to organize teaching and learning; promulgating the handbook to ensure safety against Covid-19 in schools and universities; guiding the streamlining of the program, preparing the conditions for online teaching to limit the negative effects of the epidemic, persistently pursuing the quality goal; provide electronic learning resources to support online teaching to timely help lecturers, students and students' parents have access to official, quality, diverse and rich learning

materials to effectively serve the online teaching process. Higher education institutions actively organize online learning for students to complete the program volume; actively build and develop an open mass online system and shared online courses to create a platform to connect and share learning materials and promote online teaching in higher education institutions (PM, 2022). Some universities that have sufficient facilities and equipment become concentrated isolation points, ready to receive quarantined people or serve as vaccination sites; many universities have organized delegations of cadres, teachers, lecturers, education staff, and students to volunteer to support epidemic prevention and control, to support provinces and localities affected by the Covid-19 epidemic.

2. METHODOLOGY

The research is analyzed based on documents and guidelines issued by the National Assembly, the Government, and the MOET. The first type of document is the Law on Education, the Law on Higher Education, and the Decree guiding the Law on Higher Education. The second type of document is the regulations, guiding documents of the MOET, and some documents implementing the training organization of higher education institutions. The third type of document is the guidance of the Ministry of Health and localities in implementing Covid-19 prevention and control plans in higher education institutions. All documents analyzed were published between December 2019 and December 2022. In this study, a total of 15 documents were synthesized and analyzed. Policies from 20 universities are randomly selected from nearly 200 Vietnamese public universities.

After the documents were selected, a thematic analysis of the content was performed using the qualitative software Nvivo 12 (Braun & Clarke, 2006). For this analysis, the principles of foundational theory (Glaser & Strauss, 1967) were applied, allowing the identification of a wide range of topics that emerge from reading selected texts. The documents were included in the qualitative software Nvivo 12. After reading the critical content, the main topics related to the training organization policies during the Covid-19 pandemic take place coded based on the nodes provided by this program, such as digital transformation challenges and requirements, university autonomy in the context of digital transformation, online training and blended training organization, assessment in online training. The results of the policy analysis were further consulted by education experts and educational administrators from the universities involved in this research. Then, a comparison matrix is designed in which the topics are listed horizontally, and the content of each document is listed vertically. From there, the authors draw the main results from the document analysis and make some necessary recommendations and conclusions about educational policies for higher education institutions in Vietnam.

As such, this research provides a brief discussion of how universities have responded to the challenges of the pandemic, focusing on the context of digital transformation in higher education. We explored the various statutes, regulations, and guidelines issued by higher education authorities in Vietnam during the pandemic. How have higher education institutions responded to the health crisis caused by Covid-19? What challenges do Vietnamese universities face after the Covid-19 crisis? What role should higher education play from now on? How can universities adapt to the strong digital transformation landscape?

3. RESEARCH RESULTS

3.1. Digital transformation challenges and requirements

According to statistics from the MOET, in Vietnam, only about 50% of the total number of higher education institutions conduct teaching and learning remotely during the temporary suspension of universities due to the Covid-19 epidemic. In addition, the survey results of the Vietnam Internet User Community Charity Fund and VNG Joint Stock Company show that the three biggest barriers for students when learning online are: fee collection (35%); having to connect to the Internet often (24%) and difficult to find the required exam/lecture (16%). The school year plan is interrupted, and the educational program and content must be changed in the direction of only the core; nearly 20 million pupils and students had to temporarily stop going to schools and universities, switch to online learning, study via television for many consecutive months, over 70,000 students could not graduate on time, affecting the supply of human resources for the country. Many essential tasks of the education sector could not be carried out as planned, strongly affecting staff development, finance, teaching and learning, and education quality assurance; to the thoughts and psychology of teachers, children, pupils, students, and their parents (MOET, 2022). Thus, digital transformation has not been widely popular at Vietnamese universities because many difficulties and challenges still need to be solved, especially during the Covid-19 period.

Digital transformation is one of the most popular concepts mentioned in recent years. Digital transformation concepts refer to the application of digital technology in various fields of society. Digital transformation in education represents a change in teaching methods, information technology, and modern devices in teaching (Schwab, 2016). Information technology and modern equipment create conditions to meet the needs of students and teachers, thereby helping learners and teachers maximize their ability to think, be creative, and be proactive in learning and teaching. The application of digital transformation in higher education worldwide has demonstrated many benefits that have resulted in significant savings in time and money (Paul, 2019; Vial,

2019). Simultaneously, it creates favorable conditions to help teachers and learners overcome the barriers of space and time - the most significant barriers to implementing traditional teaching methods due to unexpected events. In particular, digital transformation's benefits are even more evident in unfavorable conditions, such as natural disasters and epidemics. However, in the context of Covid-19, one of the biggest challenges of digital transformation in higher education is the development of infrastructure to best support forms of training and university management through electronic means. In less developed countries or some areas in developing countries, the conditions of the Internet system, telecommunications infrastructure, equipment, and technology solutions are not yet disseminated and operated smoothly. Therefore, the digital learning experience for teachers and learners can present tremendous obstacles (Nguyen, 2017; Phan, 2018). Moreover, the digitization, construction, and updating of digital learning materials, assessment, and sharing of digital learning materials require a large investment in human and financial resources to ensure a complete and high-quality digital data repository, meeting the learning, research and reference requirements of students in all disciplines and subjects. However, presently, the problem of building digital learning materials such as e-books, electronic libraries, multiple choice question banks, electronic lectures, e-learning software, simulation application software, etc., develop spontaneously, have not yet entered into order and become systematic, difficult to control the quality and content of learning (Phan, 2018; Nguyen & Pham, 2022).

With higher education institutions closed due to the Covid-19 pandemic, universities and teachers face the most critical challenge, connecting with students and ensuring the continuity of learning and teaching through online training. In remote areas, many students need a stable Internet connection, making it more challenging to ensure the continuity of education through distance learning. Simultaneously, because face-to-face communication is often more accessible, more convenient, and more interactive in the learning process, the transition to distance learning exposes students to more tremendous obstacles (Miliszewska, 2007; Bilyalova, 2019; El Masri, & Sabzalieva, 2020). Interactivity and communication with faculty and other students are limited to a virtual classroom. Students with low discipline or poor self-study ability will have difficulty without direct support from lecturers. In general, online videos, digital content, and discussion forums cannot produce a positive teaching and learning outcome (Brewer et al., 2019; Rashid & Yadav, 2020). The training of teaching staff to improve teaching information technology skills plays a significant role in the epidemic period, but it is still a big challenge. According to the International Survey on Teaching and Learning (TALIS), before the outbreak of the Covid-19 epidemic, only about 53% of teachers in the world allowed their students to use information technology applications for their projects or assignment regularly. About 60% of teachers received professional development in information technology, while 18% said there was a great need for training in this area. These figures highlight that teachers must constantly upgrade their skills to innovate their teaching methods and adapt to rapid technological changes in the 21st century. This is even more important in the current context when the Covid-19 crisis has prompted teachers/lecturers to adapt very quickly, especially in countries where teachers/lecturers do not have enough pedagogical and technological skills to integrate digital tools into teaching (Sahu, 2020; Camilleri, 2021; Engzell et al., 2021; Moye, 2021).

In the face of complicated developments of the Covid-19 epidemic, the education sector has actively developed a plan for digital transformation in education and training, focusing on implementing some urgent tasks and solutions to support online teaching and teaching on television, such as building an overall solution for online teaching to ensure synchronization and effectiveness in the direction of integration, the synchronous combination of functions for online teaching organization and management; develop illustrative lessons, electronic archives; develop online teaching manuals to support teachers in online teaching with quality assurance. Therefore, universities need to prepare conditions for organizing online teaching such as software, learning materials, and terminal equipment; training and being ready to organize online teaching, testing, and assessment; provide electronic learning resources to support online teaching timely support localities, educational institutions, teachers, students, and their parents to have access to official learning materials, diversity and abundance to effectively serve the online teaching and learning process.

In addition, realizing the benefits that digital transformation brings, Vietnamese government leaders have begun to research and apply digital transformation in education. In Vietnam, before the unpredictable development of the pandemic, the MOET issued the motto “pause to go to school, never stop learning.” Implementing that motto, 85% of schools and 245 universities have organized teaching and learning online, of which 80 higher education institutions organize online teaching and learning. This leads to the education sector fulfilling its school year duties well and ensuring the health of students and teachers during the pandemic. Thanks to the timely application of digital transformation, all activities in Vietnam’s education sector typically take place and achieve remarkable results. Students have completed their semester with good results through online learning with communication applications such as Zoom, Skype, Google Classroom, etc. The university and faculty also complete the predefined teaching plan. Therefore, digital transformation is an undeniable trend in general and higher education in a changing and volatile environment. It can be said that digital transformation plays a vital role in the current 4.0 era. It helps people to be proactive in learning, working, and producing in the changing

conditions of the natural-social environment and is the key to completely changing people's traditional way of working.

3.2. University autonomy in the context of digital transformation

Academic autonomy is one of the most critical factors for implementing the governance model under the autonomy mechanism of all universities worldwide. Although the concept of academic autonomy still has many interpretations and leads to quite different approaches, the system of relevant legal documents in Vietnam has also provided specific standards for implementing the governance model under the autonomy mechanism. It is, in fact, also the legal basis for local public universities to exercise their academic autonomy (VNA, 2018; Government, 2019). This process is taking place more smoothly in that Vietnam is actively implementing a digital transformation strategy in higher education, but also, inevitably, some difficulties and challenges. On the one hand, the actual capacity of many local public universities still needs to be stronger to conduct their research and activities according to their goals, missions, and methods.

On the other hand, the current mechanisms and policies of the state have yet to create favorable conditions for the autonomous governance model in the academic field. The locality is coming to life and bringing the desired effect into play. The scientific and technological capacity, the ability to design training programs, and the skills to organize the implementation of training processes of the local public university system are generally not in a fair comparison with leading universities in the country. Although many achievements of modern technology have been applied and the implementation of digital transformation strategies has been strengthened in recent years, the work entrance enrollment of many provincial public universities still needs to be satisfactory. More specifically, some local public universities have made full use of student attraction schemes in their entrance campaigns, but the wide range of training professions offered by many local public universities are at risk of closing because there are no students in 2019 (Nguyen et al., 2022). Facing that situation, increasing the application of modern educational technologies and promoting digital transformation in higher education to train according to the actual needs of the local economy and according to the orders of a specific address is considered one of the most feasible and promising options. It also strengthens scientific and technological capacity and aims at new international quality goals based on digital technology achievements is the key to the integration process as well as building an autonomous governance model in the academic field of local public universities in Vietnam in the next few years.

The autonomy in planning enrollment still needs to be improved on a national scale. Only 28% of universities exercise autonomy in enrollment, and about 44% have autonomy in training organizations (Nguyen & Pham, 2022). The MOET holds power and directs the admissions work of universities. Therefore, enrollment in universities is dependent on many stages, such as the date of the country's entrance exam, the release of the candidate's registration documents, and the receipt of the application. Therefore, one of the first things to do is to review and adjust the inappropriate regulations that hinder the digital transformation in higher education institutions, such as the regulation on the ratio of floor area for building educational institutions per student, regulations on the proportion of students in lecture halls, or regulations on the maximum ceiling rate of online teaching in training programs. In addition, the State and the MOET need to support universities with a financial mechanism and common guiding frameworks for the digital transformation process, such as building infrastructure to increase collaboration and flexibility for students in a real-virtual learning environment, digitalization of materials, development of digital libraries, reconstruction of the capacity framework of teachers - lecturers - administrators. One of the most critical factors determining the success of the digital transformation is the lecturer, that is, the person who coordinates the online teaching and learning process. Technology only promotes people's flexibility and creativity in online teaching and learning, widening the beneficiaries and reducing investment costs for education, but it cannot replace the human factor. Investment in the digital platform must always be accompanied by training and developing trainers in all three aspects of knowledge, skills, and attitudes.

To create a strong impetus for digital transformation in the early stages, the State needs to focus on supporting pioneering universities, especially non-public higher education institutions, because by autonomously and quickly adapting, these universities will successfully be a model for promoting the common digital transformation in the education of the whole country. The State should also boldly allow many universities that are pioneers in digital transformation to experiment with groundbreaking new training models, such as training models that shorten training time but still ensure content and meet learning outcome standards. In particular, the State needs to build an interactive platform to connect high school students (and parents) with universities; which will help parents and students, especially disadvantaged people in remote areas, have conditions to early access to information about universities, training programs, financial support policies, job prospects, careers, etc., from which they have greater motivation to go to university, as well as to choose the appropriate training major. Toquero's (2021) review also shows that to increase university access rates, it is necessary to effectively implement broader outreach policies. Finally, despite the different guidelines the MOET sets, each university has the autonomy to establish a contingency plan according to its criteria and actual context. This is why, during

this pandemic period, universities in Vietnam have made different decisions based on their principle of autonomy, especially academic autonomy, recruiting lecturers, and financial independence.

3.3. Organize online training and hybrid training

In 2020, university closures and the transition to distance learning significantly disrupted higher education. Universities must adapt their educational processes to an entirely online scenario recommended by the MOET. These recommendations are intended to ensure the quality of training while protecting the health of faculty, students, and university staff. However, the MOET also emphasized the need to maintain traditional classroom teaching as much as possible to ensure training quality: "online teaching is only applicable if universities have sufficient conditions for information technology infrastructure and learning materials to organize online teaching, ensuring that the quality of online teaching is not lower than the quality of face-to-face teaching" (MOET, 2021c). In this regard, the MOET requires universities to commit to society that the quality of online teaching activities must be equivalent to the quality of face-to-face teaching activities, thus leading to the development of the hybrid training model.

Although there are some universities in Vietnam with a long tradition of distance and online education, such as Hanoi Open University, and Ho Chi Minh City Open University, most of them are barely prepared for the development of this type of teaching. Online and distance learning are not new concepts in the higher education system, but they are becoming increasingly popular (Wilhelm et al., 2020; Li, et al., 2021). Online learning is preferred for students who need help to easily travel to cities near the higher education institution of their choice and for international students who wish to attend university while undertaking their business. However, the transition to online learning requires more at university with internet connectivity and access to digital devices. Lecturers and students must be equipped with the necessary skills to make an effective transition to online courses because most lecturers and students primarily experience the traditional classroom with technology integration is quite limited.

Besides, the regulations and guidelines of the MOET in implementing teaching and learning in the context of the Covid-19 epidemic are still temporary and not proactive. Many universities have coordinated with the Ministry of Health to prepare documents, including recommendations and health measures, to coordinate and guide universities in this new scenario caused by the pandemic. Therefore, universities have slight differences in preparing conditions for online teaching with many different options and formats. Many localities lack online learning equipment, especially provinces with ethnic minorities, mountainous areas, and challenging socio-economic areas, affecting the quality of online teaching and learning. In addition, due to free teaching software, the quality could be better; the internet connection is available in many places, sometimes unstable, especially in remote and isolated areas, thus significantly affecting the quality of learning and teaching. The work of educating students on morality, lifestyle, and life skills has not been proactive and timely, especially in the context of the complicated development of the Covid-19 epidemic, so they have to switch to online teaching; support, psychological counseling, skills to prevent and combat violence, bullying, and abuse of children, pupils, and students when studying online and using the network environment are not effective. Many provinces and cities have to organize online teaching. However, due to the limited capacity of the internet transmission system, the teaching software needs to be fixed, many students need more learning equipment, and the support of their families still faces many difficulties, so teaching and learning in many places are ineffective. The MOET implemented the program "Waves and Computers for Students" to support students in Covid-19 epidemic areas with conditions for effective online learning. The program prioritizes computer support and telecommunications services for students with difficult circumstances. In 2021, ensure coverage of all points without internet connection nationwide; mobilize one million computers for poor students; free-to-use online teaching platforms; free mobile internet charges, teaching platforms, package support, and information technology infrastructure. In the year 2022-2023, mobilize all resources in society so that poor students can have computers for online learning. The MOET also requires universities to ensure connectivity and access to different technology resources for all students, avoiding the situation that students need computers and the Internet to study online. To achieve this goal, universities have developed a series of measures such as building scholarship funds and grants to provide students with computer equipment or cards to connect to the Internet; developing computer lending services. In addition, universities have taken measures to reduce tuition fees and organize training courses for students in online learning skills, providing psychological support for students during the Covid-19 pandemic (MOET, 2021b).

Furthermore, most Vietnamese universities have included in their action plans developing three different scenarios depending on the complicated developments of the Covid-19 epidemic in each locality. Possible scenarios are online, blended, hybrid, and face-to-face teaching. However, the MOET also recommends that for teaching content of a practical and experimental nature, it is necessary to organize direct teaching at universities, practice workshops, or enterprises. Since then, the MOET has proposed three fundamental pillars: training in digital competence, development of e-learning resources, and resources to support online teaching. In terms of digital competency training, universities have developed standards for faculty capacity, including plans to foster

online teaching and learning skills, e-lecture building skills, skills of using software to communicate over the Internet, etc.

Regarding the development of learning resources, the MOET has built an electronic repository with 5,000 e-learning lectures, more than 2,000 lectures on television, 200 virtual experiments, and more than 200 e-books for regular use in schools and universities. In addition, universities organize the development of thousands of e-lectures to support online and hybrid training models in the context of the Covid-19 pandemic. Regarding resources to support online teaching, the Government has approved many projects to upgrade information technology infrastructure for key universities, allowing pilot construction of digital universities, developing distance learning programs, and forming learning societies. In particular, the MOET has issued a set of indicators and criteria for evaluating the digital transformation of higher education institutions, which includes a group of criteria for digital transformation in training and a group of criteria for digital transformation in university governance (MOET, 2022). The group of criteria in training requires universities to develop online training regulations, deploy online training software (via software such as Microsoft Teams, Zoom, Google Meet, and similar software), and implement an online learning management system, an online learning content management system. In addition, this group of criteria also requires the number of online courses included in training (minimum of 20 online courses), the implementation of an electronic/digital library system, the organization of computer-based assessments, develop human resources for digital transformation (trainers can use online teaching software, build e-learning materials and e-lectures), build a studio system for producing electronic learning materials and lectures system, develop a system of multi-functional information technology rooms, etc. (MOET, 2022).

The main advantage of a face-to-face classroom environment is that students interact more with learning materials, faculty, and other students for better academic achievement (Bingham et al., 2022; Javier et al., 2022). In addition, academic stress is common in all learning environments. However, it is easier to manage in face-to-face terms because students discuss and solve problems themselves before it affects their spirit. This is something that online training does not offer, which means that learners are more alienated and need more professional support from instructors. Furthermore, the lack of remote learning experiences and disruptions in the home learning environment increased anxiety, and negative moods can affect students' cognitive ability and focus on lectures (Clabaugh et al., 2021; Dial et al., 2021). Therefore, many universities have implemented a training model combining online courses with face-to-face courses to help students achieve better academic results. In addition, when new students return to face-to-face learning, universities need to organize counseling and psychological support and implement safety measures for students transitioning from online learning or learning through television to live to learn at universities; organize the review, consolidate and supplement knowledge content suitable for groups of students; effectively use the remaining time of the academic year to continue teaching basic and core contents under the guidance of the MOET under the conditions of the university and students. Most higher education institutions develop a plan for direct examination and assessment, including summative assessment and formative assessment, to ensure seriousness and compliance with regulations on student examination and regulations to prevent and control the Covid-19 epidemic.

3.4. Assessments in online training

Many universities have different regulations for assessing student learning outcomes in online training. In general, the MOET allows and encourages universities to assess students through the online form, but must fully meet the conditions on information technology infrastructure, with the consent of the students, and not evaluate the knowledge content related to practice, experiment (MOET, 2021a; MOET, 2021d; MOET, 2021e). Commonly used forms in online assessment are multiple-choice questions on online software, online interviews, essays, learning projects, product demonstration videos, etc. However, for some modules related to the assessment of practical skills and experiments, universities still require students to concentrate on attending the assessment directly at the university. As a result, many students are quarantined during their return to university to ensure their safety during the in-person assessment. Some universities run online assessments (including regular and final exams). Hanoi Open University and Ho Chi Minh City Open University are the two universities that apply this form most commonly. Many universities have chosen to replace final exams (in-person or online) with other forms of assessment requiring a student's ability to be assessed. For example, many technical universities assess student learning through practical assignments or real projects, while universities of the humanities and social sciences often use essays to assess students' competencies.

The MOET has developed 35,000 multiple-choice questions to assist universities in online assessment. In addition, the Ministry also has a document allowing universities to organize exams and defend graduation theses in the form of online reports. The recognition of the results of the online graduation defense must be based on an accurate, objective, and fair assessment of the student's defense session and according to the current training regulations. In addition, universities must ensure minimum conditions for facilities, information technology infrastructure, software systems, processes, and manuals for members of the evaluation committee and students participating in the assessment. Universities must ensure network safety, Internet connection, and equipment

used for online graduation protection. The information technology infrastructure serving the online graduation security organization must meet the access needs of users, not allowing the phenomenon of overload; ensure the Internet connection to serve the evaluation board members, students can access, exploit and use the online graduation protection system; ensure that students are equipped with appropriately configured terminal devices (e.g., networked computers, laptops, tablets, smartphones) connected to the Internet.

In short, the assessment of courses in the online form must ensure honesty, fairness, and transparency like face-to-face assessment (MOET, 2016; MOET 2020; MOET, 2021c). Universities actively develop plans to change the form of assessment of modules from face-to-face to online or a combination of both face-to-face and online, enhancing online questioning and answering through support software, online tests, online essays, online assignments, and projects. The content of practice assessment needs to develop an appropriate alternative plan, ensuring that the student's competencies, knowledge, and skills are properly assessed according to regulations. The online form of questioning and answering should be videotaped, fully recorded, and archived to serve the supervision, inspection, and quality assurance of education and inspection in case of request (Government, 2013). Universities must specify the process of building a bank of exam questions, test questions, essays, and assignments, the process of organizing the assessment of modules, necessary conditions for information technology application, storage of assessment evidence and inspection, testing and supervising the assessment of courses in the online form.

4. CONCLUSIONS

This study aims to analyze the mechanisms and policies of higher education authorities to support universities in Vietnam to implement training in the context of the Covid-19 pandemic and digital transformation. Research results show that universities have changed their training models to flexibly adapt to challenging conditions during social distancing due to the pandemic. Essential policies to help accelerate digital transformation, students' internet access, and development of digital educational resources. The online and hybrid training model was developed during the epidemic to help Vietnamese higher education successfully implement the motto "no one is left behind." The global debate on how higher education institutions should act and respond to the impacts of the pandemic, thereby making higher education development policies in the context of digital transformation. Ensuring the safety of the university community, teaching quality, and equal opportunities are some of the impending challenges facing higher education institutions in Vietnam. A university system with a strong concept of social justice, in which students are included with the right to quality education (El Masri & Sabzalieva, 2020; Blankenberger & Williams, 2020; Javier et al., 2022).

The legal system, digital governance capacity, and digital ecosystem (including educational content, teaching, and learning methods, learners and lecturers, information and technology communication infrastructure, digital learning materials and platforms, etc.) are essential factors for universities to implement the digital transformation process for training, in the immediate future, is to deal with the Covid-19 pandemic. However, the legal corridor on copyright, intellectual property, and information security are all significant open-ended signs for the digitization of the higher education sector in Vietnam. All the essential elements to implement a digital transformation are enrollment, classroom management, testing and assessment of students' learning outcomes, granting certificates, and building an open learning system when online training is not regulated by law. Although universities need to digitize documents and build e-learning lectures to serve new forms of teaching, most universities need help in mobilizing funds for digitizing all or most of the materials and lectures. In addition, most universities still need a guiding document system to convert the training form from traditional to online or blended training. Therefore, universities still need help formulating appropriate policies for administrators, lecturers, staff, and students.

The solutions and guidelines proposed by the MOET have yet to mention sustainable education policies to deal with similar situations in the future. The decisions are taken to show that they are urgent and simply a method of responding to the health crisis due to Covid-19 without an overall strategy for digital transformation in universities. Many universities were not ready to transition to online or hybrid training when the pandemic began, and students could not attend university. Many lecturers still need to be more active in converting scripts from traditional classroom lectures to online teaching scenarios on teaching support software. Therefore, universities must train lecturers on the use of pedagogical methods in online and blended training models. In addition, solutions are needed to strengthen the resilience of the education system to achieve equity and sustainable development. It is necessary to build a higher education system capable of adapting to the changing training model in the future. Lessons learned from the Covid-19 pandemic help universities to identify difficulties and challenges and build sustainable development strategies to meet the ever-changing needs of society.

Moreover, universities need to change the way they teach and learn. When there are digital learning materials and the connection of the digital society, lecturers gradually become coaches and leaders. Students have more sources of knowledge to learn and can actively self-study more. In the digital environment, students will be proactive (know what to learn), self-directed (set goals), self-learn (with digital learning materials), cooperate

and be interested (connect). Therefore, digital transformation requires university lecturers to change teaching methods accordingly. It is not only the digitization of lectures or the application of software to prepare lessons but also the transformation of the entire way, teaching methods, classroom management techniques, interaction with students in the digital space, and exploiting information technology to organize successful teaching. This helps students have the opportunity to access modern teaching methods and develop self-study abilities in an open educational environment. Teaching methods commonly used in universities are blended learning or hybrid learning, in which it is necessary to harmonize classroom teaching and to learn with the use of digital technologies and digital learning materials, project-based learning, flipped teaching, adaptive learning, using artificial intelligence to support teaching and learning, and personalize learning. Universities need to identify the trend of blended training as urgent in the current digital transformation context and focus all resources on carrying out this critical task. In other words, online training will be a part of higher education in the future (currently, the training regulations allow online training of 30% of the content of the modules in the training programs of universities). Research results also show that teaching and learning in the future is a harmonious combination between the "real part" and the "digital part" (connection and data) of higher education in the digital environment. Thus, digital transformation in higher education is a revolutionary change that needs to be started with insight and is expected to help maximize training effectiveness.

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