Sự thay đổi vai trò của giảng viên
trong môi trường giáo dục số

TÓM TẮT

Bài báo tập trung phân tích sự thay đổi vai trò của giảng viên trong môi trường giáo dục số dưới tác động của công nghệ và các xu hướng mới trong giáo dục. Vai trò của giảng viên không còn chỉ là người truyền đạt kiến thức mà đã mở rộng thành người hướng dẫn, cố vấn, thiết kế nội dung số và hỗ trợ kỹ thuật. Bài viết sử dụng phương pháp phân tích lý thuyết, mô tả, tổng quan tài liệu từ các nghiên cứu trước đây để làm rõ các yếu tố tác động, kỹ năng cần thiết và thách thức mà giảng viên đối mặt. Đồng thời, nghiên cứu áp dụng phương pháp phân tích tình huống để đánh giá thực trạng vai trò giảng viên trong bối cảnh giáo dục số tại Việt Nam. Qua đó, bài viết đề xuất các giải pháp như phát triển kỹ năng công nghệ, thay đổi phương pháp giảng dạy, tăng cường vai trò cố vấn, xây dựng môi trường hợp tác và cải thiện môi trường chính sách nhằm hỗ trợ giảng viên thích ứng với yêu cầu giáo dục thời đại số.

Từ khóa: *Vai trò của giảng viên,* giáo dục số, học trực tuyến, cá nhân hóa học tập.

The changing role of lecturers
in the digital education environment

ABSTRACT

This article focuses on analyzing the evolving role of lecturers in the digital education environment under the influence of technology and emerging educational trends. The role of lecturers has further expanded beyond being mere knowledge transmitters to encompass guiding, advising, designing digital content, and providing technical support. The study employs theoretical analysis, descriptive methods, and a literature review of previous research to elucidate the influencing factors, required skills, and challenges faced by lecturers. Additionally, it applies a case analysis method to evaluate the current state of lecturers' roles in the context of digital education in Vietnam. Based on these findings, the article proposes solutions such as developing technological skills, adapting teaching methods, enhancing advisory roles, fostering collaborative environments, and improving policy frameworks to support lecturers in adapting to the demands of education in the digital era.

Keywords: *The role of lecturers, digital education, online learning, personalized learning.*

1. INTRODUCTION

In the era of the Fourth Industrial Revolution, the rapid development of information and communication technology has brought profound changes in all fields, especially in education. Advances such as artificial intelligence (AI), big data, machine learning, and online learning platforms (LMS - Learning Management System) not only reshape the way knowledge is delivered but also open up new opportunities for personalized learning. At the same time, they demand a strong transformation in the role of lecturers, shifting from traditional knowledge transmitters to more multifaceted roles in the digital environment.

In the traditional education environment, the lecturer (the teacher) plays a central role in the teaching and learning process, where knowledge is transmitted from the teacher to the students (learners) through one-way methods. These important roles include:

The knowledge transmitter: The lecturer is the primary source of knowledge, responsible for presenting the lesson content in a clear and logical manner. The "knowledge transmission" model has been widely applied in traditional classrooms. According to Freire, this is a method where the lecturer plays the role of the "sender," while the learner is seen as a "container" receiving the information.[1]

The advisor and guide: In addition to teaching, the lecturer also takes on the role of an advisor, helping learners navigate their learning paths and solve problems during the learning process. Knowles emphasizes that, in adult education, the lecturer is not only a provider of information but also a supporter who helps learners discover knowledge on their own.[2]

The evaluator: Another important role of the lecturer is to assess the learning outcomes of students through tests, assignments, and other forms of examinations. According to Biggs and Tang, these assessment tools are designed to measure the students' level of knowledge acquisition and their ability to apply it in real-world situations.[3]

The shaper of values and thinking: In the traditional education environment, lecturers not only transmit knowledge but also contribute to shaping the values, ethics, and critical thinking of learners. Dewey argued that education is not just about receiving information but also a process of character formation through experience and interaction.[4]

However, with the widespread use of digital technology, learners can now easily access a wealth of knowledge from various sources. This not only changes the motivation for learning but also presents significant challenges for lecturers in redefining their roles. Instead of merely transmitting knowledge, lecturers must become designers of learning experiences, advisors supporting personalized learning, and companions in helping students develop critical thinking and self-learning skills.

Many studies worldwide, such as those by

Laurillard [5] and Bates [6], have emphasized that the role of lecturers in digital education is not merely about using technology, but also about creatively integrating it into teaching. However, these changes come with significant challenges, including the pressure to learn new technologies, manage increased workloads, and the lack of direct interaction with learners. Specifically, in Vietnam, this transition is taking place in the context of an education system still faces numerous limitations regarding infrastructure, policies, and the training of lecturers' technological skills.

With these changes and challenges, this article aims to study and analyze the following issues:

(1) The changing role of lecturers in the digital education environment.

(2) The necessary skills to adapt to the new demands.

(3) Solutions to support lecturers in enhancing teaching effectiveness in the context of digitalization.

Through the method of document analysis and theoretical synthesis, the article not only provides a comprehensive view of the lecturer's new role but also offers practical suggestions to support them in meeting the increasingly diverse learning needs of students.

2. RESEARCH METHOD

2.1. Theoretical Analysis

This method is used to build the theoretical foundation for the study, clarifying key concepts such as the role of lecturers in traditional and digital education. The research focuses on digital education theories and modern pedagogy from scholars such as Bates[6] and Collins & Halverson[7]. At the same time, the article analyzes the relationships between influencing factors, including technology, learners, and educational policies, in order to identify trends in the changing roles of lecturers in the context of digitalization.

2.2. Literature Review

The study collects and analyzes scientific literature from reputable domestic and international sources, including monographs, scientific articles, and reports from educational organizations such as UNESCO. The selected literature is related to the changing role of lecturers, the necessary skills in digital education, and the challenges lecturers face. The literature review method not only helps identify research gaps but also provides a basis for comparison with the current situation in Vietnam.

2.3. Analysis of Practical Cases

The study applies the case study analysis method to assess the current status of the lecturer's role in digital education in Vietnam and in the world, under the influence of technology and factors such as the COVID-19 pandemic. Through this method of analysis, the article analyzes the main challenges faced by lecturers, such as the pressure to master technology, manage online classrooms, and personalize learning.

2.4. Descriptive method

- Describing the role of lecturers in traditional education: Lecturers primarily play the role of one-way knowledge transmitters, teaching in physical spaces, and assessing learning outcomes in standardized examinations.

- Describing the role of lecturers in digital education: The role of lecturers is expanded and more flexible, including being digital content designers, learning guides and mentors, learning process managers, and technical support providers.

Based on the description, the study highlights the shift from the role of knowledge transmission to support and accompaniment, emphasizing lecturers' adaptation to technology and new learning demands.

Within the scope of the study, this article is theoretical and applied in nature. It does not employ investigative or experimental methods but primarily relies on document analysis and practical synthesis.

3. CONTENT
3.1. The Traditional Role of Lecturers

3.1.1. The Concept of Traditional Education

Traditional education has existed for many generations. The concept of traditional education is approached as follows:

- According to H. V. Pham, traditional education is understood as "an educational system based on long-established values and methods, which not only focuses on the transmission of knowledge but also emphasizes the development of ethical values, discipline, and responsibility in learners".[8]

- Authors L. T. Nguyen L. T. and M. T. Nguyen argue that traditional education is "focused on educational methods passed down through generations, often involving teacher-centered approaches".[9]

From the above-mentioned studies, the concept of traditional education is understood as "a form of direct education in the classroom, where the teacher plays the role of the main source of knowledge, and the learner acquires information through listening and note-taking. This model involves direct interaction between the teacher and the learner, with which most teaching methods rely on one-way transmission of information from the teacher to the learner. The learning environment is characterized by high discipline and structure".

Some key characteristics of traditional education include: teacher-centered teaching methods, passive learning, a standardized curriculum, assessment through examinations, and the classroom environment taking place in a physical space.

3.1.2. Factors Influencing the Change in Traditional Education

Traditional education at universities has existed for a long time with teaching methods such as direct lectures and a lecturer-centered approach. However, in recent years, in the context of education undergoing significant transformation due to the impact of various factors, including technological development, learners' needs, and demands from the environment and labor market, this shift has become more pronounced.

- *The Development of Technology:* Digital technology is a leading factor driving change in education. Online learning platforms, technology applications in the classroom such as Moodle, Google Classroom, and LMS systems have transformed lecturers' teaching methods and learners' approach. The application of information technology in teaching has resulted in higher effectiveness, providing flexible learning opportunities for students. Therefore, technology not only expands access to education but also changes the nature of interaction between lecturers and learners.

- The development of AI, big data, and machine learning has contributed to optimizing personalized teaching methods and measuring learning outcomes. This is an important trend that traditional education must adapt to in order to ensure the delivery of knowledge relevant to the digital age.

- *The Needs and Psychology of Learners:* In the current stage, learners demand greater flexibility in accessing knowledge. The majority of learners, especially younger generations such as Generation Z (those born between the mid-1990s and the early 2010s), desire more control over their learning process. They seek diverse, highly interactive learning methods, and particularly those that match their individual learning pace. Therefore, in the current trend, the shift to open and distance learning formats has helped meet the learning needs of students while also improving the quality and effectiveness of education.[10]

According to UNESCO in 2022, the adoption of technology in education has significantly increased over the past decade, especially during and after the COVID-19 pandemic. This has required lecturers to adapt to new teaching methods to meet the demands of remote and digital learning. In this context, many lecturers need to enhance their digital skills and adjust their teaching approaches, although challenges remain in ensuring equitable access for all learners. Moreover, governments and educational systems worldwide have been striving to use technology to improve the quality and effectiveness of education, but significant challenges remain in terms of infrastructure and training for lecturers.

- *Pressure from the labor market and society*: The modern labor market is shifting towards a demand for new skills such as critical thinking, problem-solving ability, and communication skills. According to the 2020 World Economic Forum report, by 2025, around 85 million jobs may be replaced by technology, while many new jobs will require skills that traditional education has not fully prepared for. In this context, lecturers need to meet the demands of society. Integrating project-based, hands-on, and collaborative learning methods into training programs will help learners develop the essential soft skills.[11] Higher education in Vietnam is undergoing significant adjustments to keep up with this trend.

- *The Impact of the COVID-19 Pandemic:* The COVID-19 pandemic has been considered as a catalyst in driving change in traditional education. Many universities worldwide were forced to shift to online teaching in a short period, and the pandemic highlighted the weaknesses of traditional education in responding to unexpected situations, while accelerating the process of digitalization in education.[12]

Currently, we can see that traditional education is facing challenges in the context of the rapid development of technology and changes in societal needs. Factors such as technology, learner needs, demands from the labor market, and the COVID-19 pandemic have

all contributed to driving this significant change. Educational institutions need to be ready to change teaching models and training methods to align with the new context, while also ensuring that learners can develop comprehensively in terms of knowledge and skills.

3.2. The Development of Digital Education

3.2.1. The Concept of Digital Education

Digital education is becoming increasingly important in the context of rapid advancements in information technology. The concept of digital education can be approached from the following perspectives:

The author T. Anderson argues that digital education is the use of digital technology in teaching and learning.[13]

- According to UNESCO, digital education is not only the use of information technology but also the integration of technology into all aspects of education, from learning content to teaching methods and educational management.[14]

From the above concepts, digital education can be understood as: *"The combination of the application of technology and modern educational methods to deliver knowledge in a flexible and efficient manner. Through online platforms, learners can access learning materials anytime and anywhere, while instructors can easily manage teaching content and track students' learning progress".*

3.2.2. Theory of the Changing Role of Instructors

- According to Bates, in the digital education environment, instructors are no longer limited to being information transmitters. Also, they act as facilitators of the learning process, supporting learners in finding, analyzing, and applying information effectively. This is referred to as the role of the "support creator" in the modern learning environment.[5]

- Collins & Halverson emphasize that the transition from traditional teaching to digital education requires instructors to have the ability to design flexible content, develop technological skills, and support learners in a more independent learning environment.[6]

The theory of the instructor's role in digital education shows that instructors are not only knowledge transmitters, but also guides, advisors, and learning managers. Instructors need to have digital skills, data management abilities, the ability to personalize learning, and flexibility in teaching methods to meet the increasingly high learning demands.

3.3. The role of instructors in the digital education environment

In the digital education environment, instructors need to undergo significant role shifts, which are reflected in the following aspects:

The digital content designer: In the digital education environment, lecturers are not only knowledge transmitters but also digital content designers who tailor materials to meet the needs of learners, including online lectures, reference materials, and interactive activities. Their role shifts from traditional teaching to creating digital learning experiences that allow students to explore and interact flexibly. This requires lecturers to analyze learning needs, select appropriate content, and design interactive materials such as videos, e-lectures, and online assessments to enhance the effectiveness and learner autonomy in the learning process.

- *Learning and Data Manager:* In the digital education environment, instructors not only take on the role of teaching but also manage the learning process and data of students. With the help of online platforms and LMS tools, instructors can monitor and analyze data to adjust content and enhance individual learning effectiveness. This role requires instructors to be proficient in using analytics tools to identify weaknesses and provide timely support, helping students develop optimally in the digital environment. The data includes progress, grades, and student engagement levels.

- The creator of personalized learning experiences: In this environment, instructors are not limited to providing knowledge but also facilitate personalized learning, customizing content and teaching methods according to the needs and learning styles of the students through technology. By using online platforms and analytical tools, instructors track progress, identify students' difficulties, and adjust teaching to enhance motivation and engagement. At the same time, they provide diverse resources such as videos, interactive exercises, and group activities, helping learners study in the most suitable way, develop self-learning skills, and become lifelong learners.

- *Technical Supporter:* In the digital platform, instructors also need to provide technical support, helping learners effectively use online tools and platforms. They must be knowledgeable in technology to assist when learners encounter technical difficulties, from logging in and submitting assignments to interacting on the digital platform. This role requires instructors to be proficient in basic skills, create a conducive learning environment, and help learners feel more confident in using technology.

- The evaluator and supporter of digital skills development: In addition, instructors must also assess and support the development of digital skills for learners. In the face of the widespread use of technology, they help learners build digital literacy to access information safely, efficiently, and responsibly. By guiding the use of online tools, assessing through assignments, projects, and providing detailed feedback, instructors help learners develop critical thinking, information management, and digital data processing skills, preparing them for the demands of the digital labor market.

- The developer of soft skills: The instructor also supports learners in developing soft skills such as communication, teamwork, problem-solving, time management, and other essential skills needed to adapt to the digital age. Through interactive activities, online group projects, and digital collaboration tools, instructors encourage learners to engage in discussions, presentations, and teamwork, thus fostering communication, leadership, and remote work management skills. They also help learners cultivate flexibility, self-learning, and adaptability with technology to succeed in the digital environment.

- Managing and Coordinating Online Classes: In addition to teaching, instructors also manage and coordinate online classes, organizing time and maintaining interaction to ensure students' active participation. They plan, manage progress, and allocate time for activities, while encouraging engagement through tools such as forums, chats, and virtual group meetings. This management not only helps maintain connection but also enhances students' motivation and interaction, creating a comprehensive learning experience in the digital space.

3.4. Challenges and Opportunities in the Digital Education Environment
3.4.1. The Challenges Faced by Instructors in the Digital Education Environment
- Challenges in Technology Skills: In the context of digital transformation, the application of technology in teaching is an inevitable trend, but lecturers face numerous challenges. They not only need skills in using online tools, LMS systems, and interactive software but also must keep up with the rapid development of technology, which requires significant time and resources. The pressure to integrate technology into teaching also demands creativity and flexible thinking, while technical issues and security concerns may disrupt the teaching process. However, many educational institutions lack training programs to support

lecturers in technology, making self-learning difficult. To overcome these challenges, lecturers need a learning mindset and support from institutions to enhance their technological skills. According to a 2021 survey conducted by the Ministry of Education and Training, 70% of lecturers faced difficulties with new technologies, thus they need to continually update their skills to adapt.

- Increased Workload: With the shift to online teaching, instructors face a significant increase in workload. They need to spend more time preparing and digitizing lessons, creating electronic materials, videos, and interactive activities. In this environment, instructors must continuously assess and provide students with feedback, track progress, and manage online tests. They must also assist students with technical issues such as access errors, poor connectivity, and difficulties using software, especially when there is a lack of technical support. Instructors need to regularly update their technological skills, participate in training, and learn to use new software to adapt to the digital environment. Additionally, to maintain students' motivation and engagement, they must create interactive activities that are engaging and closely monitor students' participation. Managing data on progress and providing personalized support for each student also takes up more time. Furthermore, instructors must collaborate with colleagues, technical teams, and academic management to develop digital content. This increased workload not only requires time and energy but also affects mental health, so instructors need a lot of support in the digital education environment.

Time management pressure: Faculty members are required not only to meet professional demands but also to manage their time effectively to balance teaching, student support, technology updates, and training, especially in an environment that requires high interaction and quick feedback. The time pressure on faculty arises from several factors. First, to prepare digital lectures, instructors must create multimedia content such as videos, interactive lessons, and online assessments, which requires more time and effort than traditional teaching. Second, in an online class, instructors must track the progress of each student and provide timely support, which can lead to overload when there is a large number of students. Third, instructors need to create interactive activities such as group discussions and games to maintain learning motivation, which also demands significant time investment. Additionally, the continuous development of educational technology forces

instructors to constantly learn and refine new skills, adding to the time pressure. Furthermore, faculty members must deal with technical issues such as software errors and unstable networks, which require timely intervention to avoid disruptions in teaching. Attending meetings and internal training also takes up some of their time, as they aim to update teaching methods and new skills. Finally, heavy workloads and overtime can affect instructors' health and quality of life, potentially leading to burnout. To reduce time pressure, faculty members need organizational skills, the ability to prioritize tasks efficiently, and support from the institution through time management tools and skill development training, which will help alleviate the pressure in a digital education environment.

- *The lack of direct interaction with students:* Lecturers face difficulties when there is a lack of direct interaction with students, as in face-to-face classrooms, which affects teaching quality and reduces the connection between lecturers and students. The first challenge is assessing students' understanding and learning progress, as lecturers cannot observe body language to detect early difficulties, which reduces their ability to adjust teaching methods. Furthermore, the lack of direct connection easily diminishes students' motivation and creates a sense of distance. Creating a discussion space also becomes more difficult due to technical limitations and low interactivity in online classrooms, requiring lecturers to make extra efforts to maintain an effective exchange environment. Moreover, it is harder for lecturers to provide timely personalized feedback and guidance through online channels, leading to delays in supporting students. Managing and monitoring online classrooms is also more challenging when lecturers cannot closely supervise the participation of each student, affecting teaching effectiveness. Additionally, designing diverse interactive activities such as group discussions and practical exercises in a digital environment requires creativity and technological skills, adding pressure on lecturers. The lack of face-to-face interaction also affects the development of classroom culture, reducing cohesion and creating a less comfortable, intimate atmosphere. At the same time, lecturers face challenges in building trust and support from students, as feedback and comments are not conveyed in a timely manner, decreasing students' trust in the lecturer. To address this, lecturers need to seek tools and methods to enhance interaction in online classrooms, such as using discussion software, online surveys, and virtual group activities. Support from schools and training

programs for online teaching is also essential to help lecturers bridge the interaction gap and improve teaching effectiveness.

Enhancing assessment and evaluation activities in learning: In the digital education environment, assessing and evaluating learners' performance requires more effort compared to traditional methods. Educators need to design appropriate assessment methods to accurately measure learners' competencies but the methods face the following challenges: First, creating suitable tests requires creativity and technological knowledge to develop diverse evaluation formats such as group assignments and online projects. Second, ensuring academic integrity during assessments is difficult without direct supervision, forcing educators to use anti-cheating tools, which increases the pressure of cost and time. Assessing soft skills like teamwork and critical thinking is also more challenging when educators cannot observe directly, necessitating the design of realistic projects and the use of technological tools for support. The demand for continuous assessment and frequent feedback can easily overwhelm educators, especially with a large number of learners. Moreover, the lack of comprehensive evaluation tools compels educators to develop additional assessment methods, which are labor-intensive. Providing prompt feedback in digital classrooms is another challenge, as educators must ensure timely responses to learners' needs. Additionally, the demand for fairness and transparency in assessments adds pressure, given learners' high expectations. To overcome these challenges, educators need to flexibly apply technology, innovate teaching methods, and receive support from learning management systems, digital skills training programs, and institutional resources. This collaborative effort aims to enhance the effectiveness of assessment and evaluation in the digital education environment.

3.4.2. Opportunities for Educators in the Digital Education Environment

- Enhancing Education Quality: The digital education environment creates opportunities for educators to enhance teaching quality through technology and innovative methods. Educators can develop multimedia learning resources such as videos and 3D simulations, making lessons more engaging and easier to understand while ensuring knowledge is easily updated. Personalized teaching methods enable tracking and adjusting the progress of individual learners through LMS tools, improving learning outcomes. Interactive tools like forums and online classes allow educators to connect with,

support, and provide timely responses to learners, fostering a positive learning environment. Advanced assessment methods, such as case studies and project-based assignments, enable more accurate measurement of learners' analytical and creative skills. The digital space also encourages experimenting with methods like project-based learning and blended learning, helping learners actively explore, develop teamwork skills, and solve problems. Additionally, the use of digital technology helps educators enhance their own skills, such as learning about AI and data analysis. Digitalized teaching materials are easily updated, ensuring the latest knowledge and relevance to the digital education context while offering flexibility in scheduling. This allows learners to study anytime, anywhere, improving their learning experience and engagement. Overall, digital education not only supports but also empowers educators to enhance teaching effectiveness, helping learners achieve comprehensive development for the future.

- Developing New Teaching Methods: Digital education platforms provide opportunities for educators to develop new, creative, and more effective teaching methods. The application of information technology in teaching - such as online tools, classroom management software, videos, and simulations - helps create engaging learning experiences. Blended Learning and Project-Based Learning methods optimize learning time while encouraging practice and teamwork. Digital technology supports educators in designing interactive activities and collecting and analyzing data to adjust teaching methods effectively. Moreover, educators can foster active learning environments by using diverse assessment tools, including not only tests but also projects and practical evaluations. Digital education also enables educators to stay updated through online courses, workshops, and learners' feedback, thereby improving teaching quality. Developing new methods is not just an opportunity but a crucial requirement for educators to meet learners' needs and enhance the overall quality of education.

3.5. Factors Affecting the Role of Educators in the Digital Environment

- Regarding Policy: Policies in digital education need to be adjusted to support lecturers in transitioning from traditional to online education. The focus of these policies includes developing digital skills training programs for lecturers, investing in technological infrastructure such as devices and the Internet, enhancing

security and privacy for learning data, and encouraging and recognizing the role of lecturers through various forms of rewards. Appropriate policies will enable lecturers to maximize their capabilities, contributing to the sustainable development of digital education in the 4.0 era.

- Learners' Needs: Learners in a digital environment seek autonomy and flexibility in choosing content, learning schedules, and pacing. They require access to materials at any time to facilitate effective self-study. Additionally, learners expect timely interaction and support from instructors through online channels to address questions, along with personalized content tailored to their skill levels and individual goals. Moreover, they need opportunities to develop practical skills through exercises and simulated projects. To maintain motivation, instructors play a crucial role in encouraging and fostering a sense of connection within group settings. These demands require instructors to be flexible, technologically proficient, and to take on the role of advisors and guides in the digital learning environment.

Lecturers' Competencies: Lecturers' competencies in the digital environment go beyond subject-matter knowledge, requiring technological and digital pedagogical skills. Specifically, lecturers need to be proficient in using information technology tools such as Learning Management Systems (LMS) and digital content creation software to design interactive lessons that are accessible and engaging for learners. They must also have the ability to adapt their teaching methods for online delivery, support learners in self-study, and foster self-regulated learning skills. Moreover, lecturers require skills in managing online classrooms, maintaining discipline, resolving technical issues, and providing timely assessments and feedback to ensure learning progress. Effective communication skills, the ability to motivate, and foster the connections among learners in the digital environment are essential for sustaining motivation and reducing feelings of isolation. These competencies enable lecturers to meet the demands of online teaching, improve learning quality, and enhance the overall learner experience.

Learners' Competencies: Learners' competencies in the digital environment profoundly influence the role of lecturers in guiding and adjusting teaching methods. Key include self-learning and self-management: Learners need to plan, set goals, and manage their time effectively without direct supervision from lecturers. As a result, lecturers must shift their

role to supporting the development of self-learning skills. Technological skills: Learners must be skillful at using digital learning tools. Without these skills, lecturers would need to provide their learners with further technical support, reducing time for teaching. Online interaction and communication: Learners must communicate effectively through online platforms. If challenges arise, lecturers should assist in enhancing interactions. Adaptation to new learning methods: Learners need to quickly adapt to methods such as video-based learning and virtual simulations. Lecturers should design content that aligns with learners' capabilities of absorption. Information search and evaluation: Learners need the skills to filter reliable information from the Internet. Lecturers should guide them in developing analytical and evaluation skills for credible information. Motivation and emotional management: Online learning can lead to feelings of loneliness and loss of motivation. Lecturers must create a positive environment and provide emotional support to learners. Learners' competencies in the digital environment not only directly impact learning effectiveness but also shape how lecturers develop and implement their roles. Solid learner foundations enable lecturers to focus on content development, while more support can be provided when necessary.

Supporting Technology: Supporting technology in the digital teaching environment plays a crucial role, directly influencing how lecturers deliver instructions. Online teaching tools: Platforms such as Zoom, Teams, and Meet enable flexible online classes and group meetings but require lecturers to familiarize themselves and adapt their teaching methods. Learning Management Systems (LMS): Tools like Moodle and Canvas help lecturers manage courses, assign tasks, and grade efficiently but demand strong user proficiency. Assessment tools: Applications like Google Forms and Kahoot allow lecturers to quickly assess, provide feedback, and personalize guidance. Online resource repositories: A diverse range of online materials supports research and self-study; however, lecturers must curate reliable sources. Collaboration tools: Platforms like Google Docs create collaborative learning environments, requiring lecturers to support and guide teamwork skills. AI applications: AI tools enable personalized learning and progress tracking but require lecturers to understand their operation thoroughly. Virtual Reality (VR): VR offers immersive and interactive learning experiences, especially for practical subjects, but lecturers need skills to use these tools and prepare

suitable content. Technology requires lecturers to continuously update their skills, take on roles as guides, and support learners in developing self-learning and digital competencies.

Based on the above analysis, the relationship between the changing role of lecturers and the influencing factors can be summarized as follows:
- Independent Variable: The digital education environment, represented by factors such as technology, online learning platforms (LMS), and digital resources.
- Mediating Variable: Lecturers' adaptation and development of digital skills.
- Dependent Variable: The changing role of lecturers.
- Dependent Impact: Learners' learning effectiveness and satisfaction.

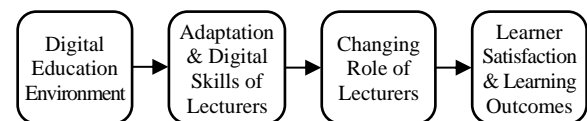The relationship between the above elements is illustrated in Figure 1.

Figure 1: Diagram of factors influencing the changing role of lecturers in the digital education environment.

The diagram above clarifies the positions of other elements in relation to the changing role of lecturers. Specifically:
- Digital education environment → Lecturers' adaptation and digital skills: Technology and digital platforms serve as drivers for lecturers to adapt and develop new skills.
- Lecturers' adaptation and digital skills → Changing role of lecturers: The role of lecturers expands from knowledge transmission to guidance and technical support.
- Changing role of lecturers → Learners' learning effectiveness and satisfaction: This positive shift enhances the quality and experience of learning.

3.6. Proposed Solutions

To enable lecturers to adapt, respond to changes, and fulfill their roles in the digital education environment, this paper proposes a number of solutions to support lecturers in maximizing their roles in this digital education context as follows:

Development of Information Technology Skills: Lecturers need to be equipped with the skills to proficiently use technology and effectively apply digital educational tools and platforms. This requires investment in training and support for lecturers in digital skills and information technology applications.

Adapting Teaching Methods: Lecturers should be encouraged to adopt flexible teaching methods, such as online and blended learning, to meet the diverse needs of learners. This not only enhances the effectiveness of teaching but also fosters greater interaction between lecturers and learners.

- *Enhancing the Role of Advisor and Guide:* In the digital environment, the role of lecturers shifts from being knowledge transmitters to advisors and guides, helping learners become autonomous and develop self-learning skills. Therefore, training programs should focus on developing soft skills, management skills, and learner support skills for lecturers.

- *Creating a Collaborative Environment:* Lecturers should participate in academic communities and experience-sharing groups to exchange and learn from each other about new methods and technologies. Building such a collaborative environment can be achieved through workshops, forums, or online communities.

- *Support from Educational Institutions:* Educational institutions need to facilitate and provide resources to support lecturers during the transition process. This includes offering appropriate digital tools and platforms, as well as establishing policies to support lecturers' professional development in the digital era.

These proposals aim to promote lecturers' adaptation to the digital environment, and enable lecturers to effectively fulfill their new roles and better meet the learning needs of students in the digital era.

4. CONCLUSION

In the context of rapid digital transformation, the role of lecturers in education has undergone significant changes. No longer confined to the traditional role of knowledge transmission, lecturers now take on multifaceted responsibilities, including digital content design, academic advice, learning progress management, and technical support. This shift requires lecturers to develop a wide range of new skills, from technology management to supporting personalized learning, while ensuring sustained motivation and positive interaction with learners.

Digital education gives significant opportunities for innovating teaching methods, personalizing learning content, and enhancing learner experiences. However, it also brings considerable challenges, including pressures to acquire technological skills, managing increased workloads, and addressing reduced face-to-face interaction with learners. Notably, in the context of Vietnam, the lack of infrastructure and supportive policies for lecturers remains a critical obstacle that needs to be addressed.

To meet these demands, the article has proposed a number of fundamental and practical solutions as below.

- Investing in technology skill training for lecturers.

- Adopting flexible and innovative teaching methods.

- Enhancing the role of advising and guiding learners.

- Developing appropriate support policies and improving digital infrastructure.

Overall, the role of lecturers in the digital education environment is not merely a change in approach but a significant step forward in shaping the future of education. With thorough preparation and necessary support, lecturers can not only adapt but also lead innovations, contributing to improving educational quality and enhancing learners' abilities in the digital age.

REFERENCES

1. P. Freire. *Pedagogy of the Oppressed,* Continuum, New York, 1970.
2. M. S. Knowles. *The Modern Practice of Adult Education: From Pedagogy to Andragogy.* Cambridge Adult Education, New Jersey, 1980.
3. J. Biggs, C. Tang. *Teaching for Quality Learning at University: What the Student Does.* McGraw-Hill Education, Berkshire, 2011.
4. J. Dewey. *Experience and Education.* Kappa Delta Pi, New York, 1938.
5. D. Laurillard. *Teaching as a Design Science: Building Pedagogical Patterns for Learning and Technology.* Routledge, London, 2012.
6. T. Bates. *Teaching in a Digital Age: Guidelines for Designing Teaching and Learning,* Tony Bates Associates Ltd, Vancouver, 2015.
7. A. Collins, R. Halverson. *Rethinking Education in the Age of Technology: The Digital Revolution and Schooling in America,* Teachers College Press, New York, 2009.
8. V. H. Pham. *Traditional and Modern Education,* Vietnam Education Publishing House, Hanoi, 2015.
9. L. T. Nguyen, M. T. Nguyen. Traditional Education in the 21st Century*, Journal of Education and Social Studies,* **2020***, 12*(2), 45-58.
10. S. Roza, M. Yohana. *Grit, Self-Regulated Learning, Self-Determination Theory and Academic Performance of Generation-Z,* The 2nd International Conference on Inclusive Business in the Changing World, Jakarta, Indonesia, 2019.

11. R. Phetcharee, N. Prachyanun, J. Jira, H. Uraiwan. Career Skills and Entrepreneurship for Students by Collaborative Project-Based Learning Management Model. *Journal of Education and Learning*, **2022**, *11*(6), 48-61.

12. A. Bozkurt, K. Karakaya, M. Turk, Ö. Karakaya, D. Castellanos-Reyes. The Impact of COVID-19 on Education: A Meta-Narrative Review, *TechTrends*, **2022**, *66*, 883-896.

13. T. Anderson. *The Theory and Practice of Online Learning,* Athabasca University Press, Athabasca, 2008.

14. UNESCO. *Mobile Learning for Teachers in Africa and the Middle East.* UNESCO, 2013.