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Improving The Teaching Capacity Of Vinh Long University Of Technology Education

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Abstract

The vigorous development of science and technology has brought opportunities and posed significant challenges for lecturers, requiring them to have the necessary information technology application and communication competencies in all research and teaching activities. The teaching staff has been increasing in both quantity and professional capacity. Knowledge, professional qualifications, and practical capacity have been gradually improved in all aspects, positively contributing to the success of the country's renovation in the past period. The rapid development of science and technology has dramatically affected higher education, requiring lecturers to have the necessary competencies to adapt to digital transformation in education. The research has identified six key competencies needed in the context of transforming the number of university lecturers such as: Ability to understand ICT and operate equipment; digital processing capacity and creativity in teaching; scientific research capacity based on ICT; collaborative communication capacity based on digital technology; capacity for security and safety in cyberspace; ability to apply digital skills. The research results show that the level of achievement in the teaching capacity of lecturers in the context of digital transformation is only good compared to the necessity. This study is the basis for proposing solutions for further studies to promote the capacity of lecturers to meet the needs of the digital transformation context.

Keywords: Digital transformation, teaching competence, digital transformation in education.

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INTRODUCTION

A knowledge-based economy with critical characteristics determines the success or failure of all countries, peoples, organizations, and individuals, in which education and training innovation is significant. In the education and training innovation strategy in general, many things need to be done and carried out synchronously, in which developing a high-quality teaching staff is a top concern. In Vietnam, the program "National digital transformation to 2025, orientation to 2030" was approved by the Prime Minister under Decision No. 749/QD-TTg dated June 3, 2020, in which education and training are among the top 8 priority areas. The program implementation process has identified the requirements for digital transformation in higher education, including the requirements for the capacity development of university lecturers in Vietnam today.

The vigorous development of science and technology has brought opportunities and posed significant challenges for lecturers, requiring them to have the necessary information technology application and communication competencies in all research and teaching activities. The teaching staff has been increasing in both quantity and professional capacity. Knowledge, professional qualifications, and practical capacity have been gradually improved in all aspects, positively contributing to the success of the country's renovation in the past period. The rapid development of science and technology has dramatically affected higher education, requiring lecturers to have the necessary competencies to adapt to digital transformation in education.

The block of Technology, pedagogical universities under the Ministry of Labor and Social Affairs includes the Nam Dinh University of Technology Education, Vinh University of Technology Education, and the Vinh Long University of Technology Education. In the development process, the Technology Education universities system has come up from intermediate schools or Technology workers' schools. From 1970 to 1976, schools were assigned to train vocational teachers for Technology worker schools and vocational training institutions throughout the country. To meet the requirements for vocational training, schools are interested in investing in facilities by ministries, branches, and

localities, developing their scale, improving training quality, and continuing to be recognized by the Government become a College of Technology Pedagogy, training vocational teachers at the college level. From 2003 to 2013, Technology pedagogical colleges that thrived were upgraded to universities of Technology pedagogy. Currently, Technology and pedagogical universities in general and the Vinh Long University of Technology Pedagogy, in particular, have all developed into multidisciplinary and multi-level universities, striving to become essential regional schools. Create career-oriented - high-quality applications that meet the needs of society. Vinh Long University of Technology Education is headquartered in Vinh Long City, Vinh Long province. The Ministry of Labor and Social Affairs manages the school in terms of personnel and budget; The Ministry of Education and Training manages the profession. Vinh Long University of Technology Education has trained high-quality human resources with thousands of vocational teachers and Technology workers for the Mekong Delta provinces as well as other provinces of the country. The university's generations of students are always dynamic and sensitive in the working process, effectively serving the cause of industrialization and modernization of the country.

In the context of solid digital transformation, Vinh Long University of Technology Education defines its strategic vision for 2030 as one of the leading Technology education and training institutions in Vietnam with the following objectives: strategic breakthrough goals in terms of resource development, training quality, scientific research and building a university cultural environment. With the new requirements in digital transformation, and the impact of the COVID-19 pandemic, the requirements for high-quality digital human resource training require the school's teachers to play a crucial role, not stop improving teaching capacity in line with the context of digital educational transformation, to contribute to the realization of the school's goals and vision.

CONTENTS

1. Teaching competency framework of lecturers in the context of education digital transformation

Competence is defined in many different ways, all depending on the purpose of use, choice, namely: Competence is

Individuality allows one to successfully perform certain activities, achieving desired results under specific conditions. Competence is considered a deep integration of knowledge, skills, and attitudes that make up the ability to perform a professional job and is reflected in practical activities" (Dang Thanh Hung, 2012; p. 18-26). In short, competence is the ability to mobilize a

combination of knowledge, skills, and personal attributes to perform a job in a given context successfully.

According to Decision No. 2222/QD/TTg dated December 30, 2021, of the Prime Minister approving the digital transformation program in vocational education until 2025, with a vision to 2030, the digital transformation in education is the application of technology, based on the purpose and structure of the educational institution. Currently, digital transformation is applied in 3 primary forms: 1) Technology application in teaching methods: Smart classrooms, programming... in teaching; 2) Technology application in management: Operation and management tools; 3) Technology application in the classroom: Teaching tools, facilities.

The birth and development of intelligent intelligence have been applied in education, helping to receive knowledge faster and shortening the distance. In the context of digital transformation, the role of the teacher is to connect information to learners in the process of knowledge and experience transfer (Honga et al., 2008). Several educators have given different views on the capacity of teachers to be able to take on the role of teachers, researchers, etc., based on research related to the research overview. According to domestic and foreign research by scientists related to the necessary competencies for teaching lecturers, the authors propose a model to evaluate university lecturers' competence in the context of digital transformation (Figure 1). with specific justifications such as:

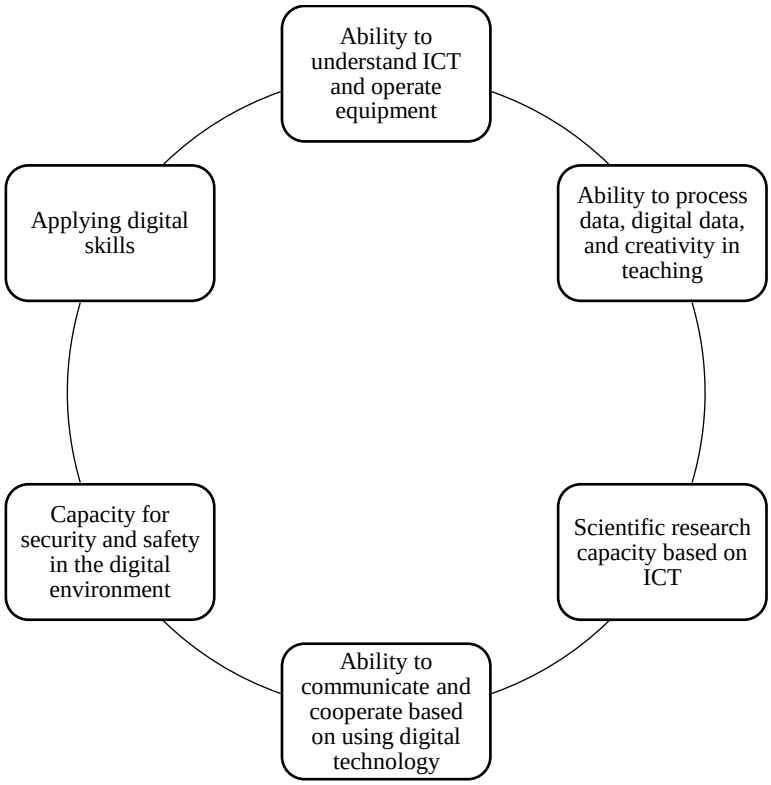

Figure 1 Competency Framework of Teachers in the Context of digital transformation

Understanding ICT and operating equipment plays an essential role in teaching. In 2017, author Chen and colleagues said that digital competence is the ability to understand and use information in a variety of formats with a focus on critical thinking, not technology skills, accessibility, critically evaluating, using, and creating information through digital media in connecting with others and the community" (Chan et al., 2017; p.1-16). Researchers have used many different models to assess lecturers' digital competence. This digital competency focuses on the most basic skills, helping to apply them to everyday learning, working, and communicating on digital platforms (Marquet et al., 2018).

Enhancing the digital capacity of teachers plays an essential role in addressing challenges in today's context of the development and application of information technology in education, including national digital transformation requirements. In the context of digital transformation, trainers need to know how to process data and use it creatively to develop the capabilities of individuals or organizations in the modern world and to ensure safety information for such individuals and organizations (Balyk, 2020). The teaching capacity of lecturers will develop when there is scientific research based on digital technology with sufficient knowledge, skills, and awareness. Applying digital skills for research and teaching creatively and flexibly will promote digital transformation (Rodríguez-Abitia, 2021).

The development of digital capabilities is related to many factors, including a higher level of technological knowledge. The research results show that the need for lecturers to participate in information and communication technology (ICT) training courses should be considered in the content and level of the designed training activities ensure suitability relative to the age of course participants (Basantes-Andrade, 2020)

In teaching, learning, testing, and evaluating, digitizing learning materials (e-textbooks, electronic lectures, E-learning lecture warehouses, question banks), digital libraries, and laboratories virtualization, deploying online training systems, and building virtual universities (Cyber University). The digitization of lectures, or the application of software to build lectures, transforms all teaching methods, methods, and classroom management techniques, interacts with learners in digital space, and exploits information technology to organize successful teaching (Nguyen Thi Thu Van, 2021).

In summary, to meet the requirements of the digital transformation context, there are six groups of necessary teaching competencies in the context of digital transformation, including the ability to understand ICT and operate equipment; digital processing capacity and creativity in teaching; scientific research capacity based on ICT; collaborative communication capacity based on using digital technology; capacity for security and safety in cyberspace; Ability to apply digital skills. In the context of digital transformation that requires lecturers to continue to develop through their learning and development, each lecturer must equip himself with the primary conditions related to digital skills and apply appropriate methods and curricula to ensure effective teaching and learning in digital transformation. The above competencies will help teachers confidently and quickly integrate into the digital transformation context.

2. Actual situation of teaching capacity of lecturers at Vinh Long University of Technology Education in the context of digital transformation of education

2.1 Competence to understand ICT in education and use equipment in teaching

The ability to understand ICT in education and apply equipment in teaching needs to: Understand the national digital transformation policy and the school's digital transformation; effective data exploitation in teaching; proficient use of technological equipment; find the right tools from open sources for education; apply digital transformation policies and strategies in teaching. The professional competence of the lecturer is the knowledge, understanding, and skills... in the field of expertise specific to the job position or department that the individual needs to undertake the job work effectively. However, in the context of digital transformation, lecturers must keep up with the development trend of the digital transformation context. Below are the survey results on the ability to understand ICT in education and apply equipment in the teaching of lecturers of Vinh Long University of Technology and Education:

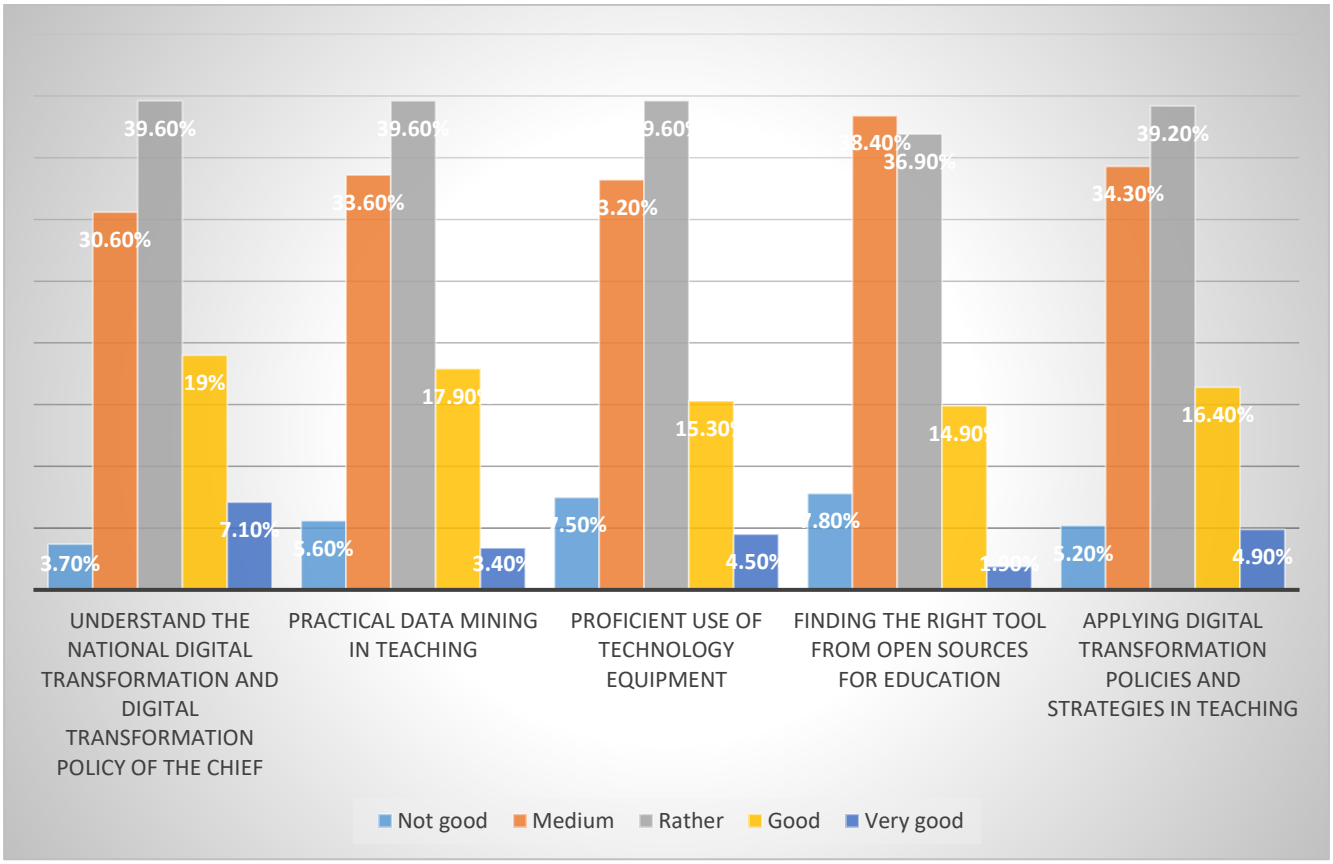

Figure 2 Current status of capacity to understand ICT and use equipm

Observing the results (Figure 2), the five necessary factors in understanding ICT in education and using equipment in teaching at a reasonably good level account for about 40%.

In addition, competencies in: Understanding the university's national digital transformation policy and digital transformation; effective data exploitation in teaching; proficient use of technological equipment; finding the right tool from open sources for

education; applying digital transformation policies and strategies in teaching at an average level accounts for 30.6% - 36.9%. Remarkably, the ability to use technology equipment proficiently accounts for the alarming rate of 7.5%; finding the right tool from open sources for education, the rate could be better at 7.8%. The capacity to understand ICT in education and apply equipment in teaching is required of lecturers in the context of digital transformation, which is low, only at an average level.

2.2 Ability to process digital data and be creative in the teaching of lecturers

The ability to analyze, synthesize, solve problems, and apply technology in teaching plays an important role in digital

transformation. According to the current educational development trend, each lecturer who wants to do his or her job well needs to have the ability to process digital data and be creative in his teaching, including: knowing the information data needs of the subject, locating the scope of searching, accessing and exploiting digital data; assess the reliability of the information on cyberspace; capture and comply with copyright issues in cyberspace; Innovative data processing in teaching and research.

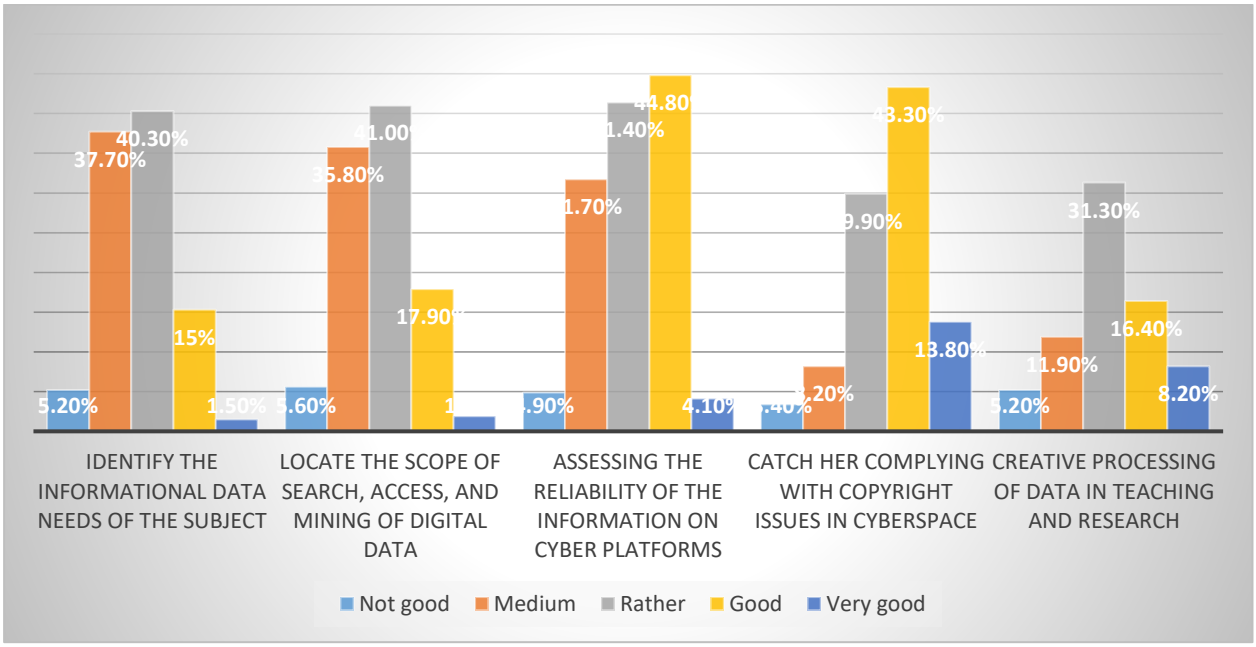

Figure 3 The current situation of lecturers' ability to process digital data and creativity in teaching in the context of digital transformation

Observing the obtained results (Figure 3), the five factors in the faculty's ability to process digital data and creativity in teaching were rated at an average level, accounting for the rate from 29.9% to 37,7%. The ability to capture and comply with copyright issues in cyberspace accounts for a reasonable rate of 44.8%, and creative data processing in teaching and research accounts for a reasonable rate of 43.4%. There is a big difference between the necessity and the level of achievement in the required teaching capacity of lecturers in the context of digital transformation, especially the capacity to recognize the data and information needs of the subject, locating the scope of searching, accessing and exploiting digital data accounts for a reasonable rate of about 15%. In order to meet the digital transformation context, teachers need to have their own self-learning and development capabilities to integrate into the educational development trend easily.

2.3 Scientific research capacity on the ICT platform

Research capacity affects the professional capacity of lecturers. With scientific research, new lecturers expand and apply professional knowledge into practice. Scientific research is one of the critical tasks for lecturers. In teaching, teachers discover new problems that need scientific research. Scientific research capacity in the context of digital transformation includes the following factors:

Digital technology for research and teaching; storing, preserving, and exploiting data based on the features of modern equipment for research; interacting, communicating, and collaborating on research through digital technology; using ICT networks to access experts to learn and share experiences; learn, select and participate in online courses, blogs, podcasts, forums, seminars.

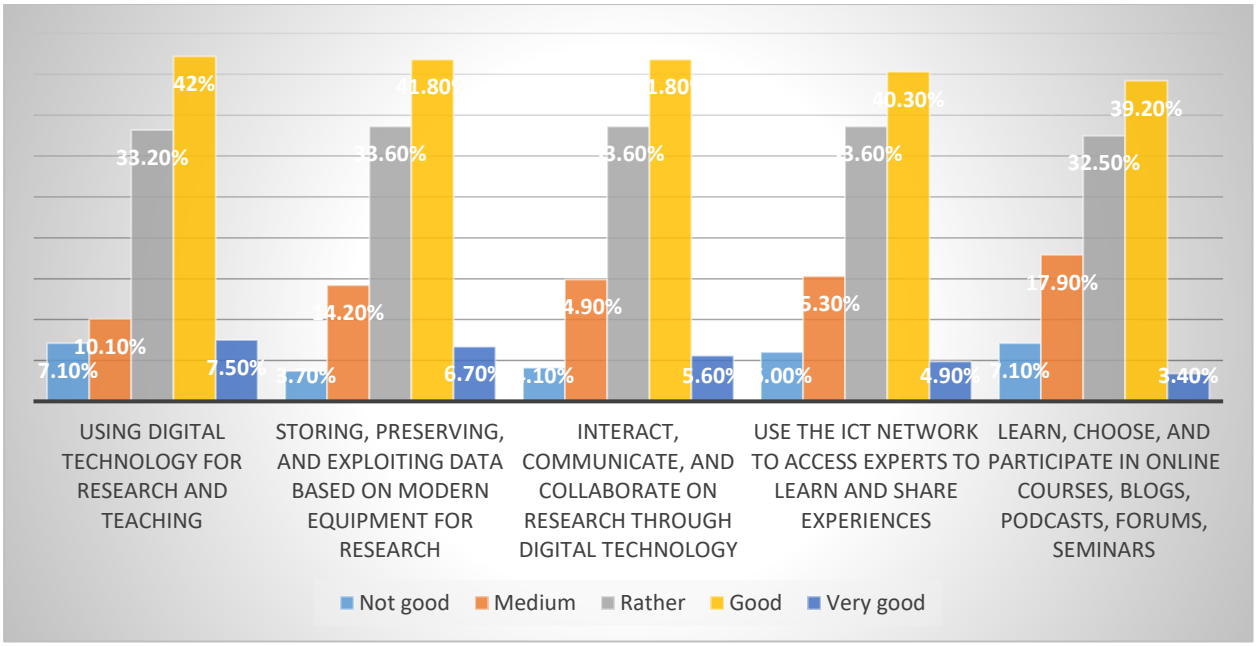

Figure 4 Current status of faculty's scientific research capacity in the context of digital transformation

Observing the results (Figure 4), five factors related to scientific research capacity accounted for a high rate of 39.2% - 42.2%. Using digital technology for research and teaching, learning, choosing, and participating in online courses, blogs, podcasts, forums, and seminars, the rate could be better at 7%, and the average level is 17.9%. People with scientific research abilities always seek new things and actively participate in scientific research activities. Lecturers in the context of digital transformation need to be able to guide students to conduct scientific research, and the capacity to evaluate scientific research results still needs to be high. The interaction, communication, and research cooperation level through digital technology accounted for an average rate of 14.9%. There is a big difference between the necessity and the

level of achievement in the scientific research capacity of lecturers in the context of digital transformation.

2.4 Ability to communicate and cooperate based on using digital technology

Ability to communicate and cooperate based on using digital technology, such as: Promoting communication and cooperation in the digital technology environment; designing, sharing, and commenting on lectures using digital tools; helping learners identify technological solutions to problems; encouraging learners to create their digital tools to support learning is an essential competency in the context of digital transformation. Flexible use of digital tools helps learners interact and study together. In the context of digital transformation, lecturers share information with learners and connect learners with knowledge sources. Teachers are responsible for helping learners understand knowledge and taking care of other needs for learners to have effective ways of learning.

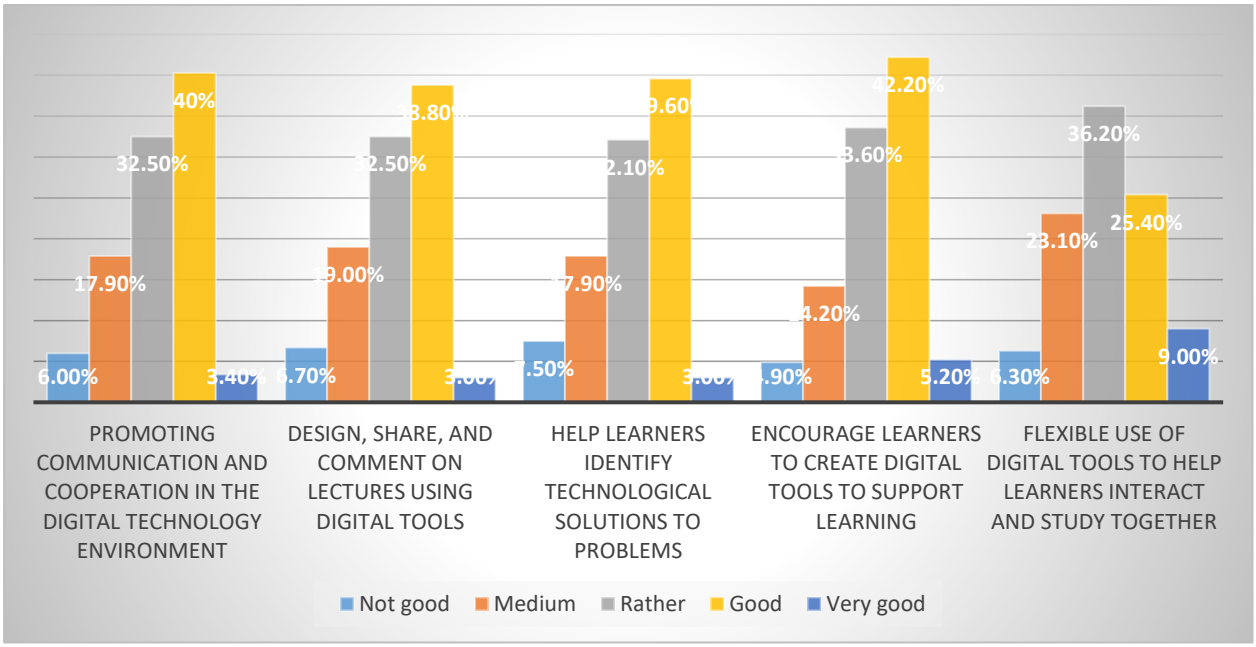

Figure 5 Current status of lecturers' communication capacity in the context of digital transformation

The results (Figure 5) show that five factors in the communication capacity of lecturers in digital transformation range from pretty good, about 32% on average, and about 40% good. However, the flexible use of digital tools to help learners interact and research together was rated as good, accounting for 25.4%, quite good, accounting for 36.2%, lower than other factors remaining. Encouraging learners to create digital tools to support learning is a necessary capacity in digital transformation, which is rated at

42.2% as good. Although the ability to communicate and cooperate based on digital technology is relatively good, it still needs to meet digital transformation requirements.

2.5. Security and Safety Capabilities in the Digital Environment

Teaching capacity in the context of digital transformation needs to have security and safety capabilities through such contents as Ensuring the confidentiality of information and safety in the digital environment, understanding the general rules and building a healthy and safe digital environment, organizing a safe shared learning environment online; design digital documents to help learners participate in problem-solving; Awareness and management of safety issues in the digital environment: Viruses, scams, cookies, popups...

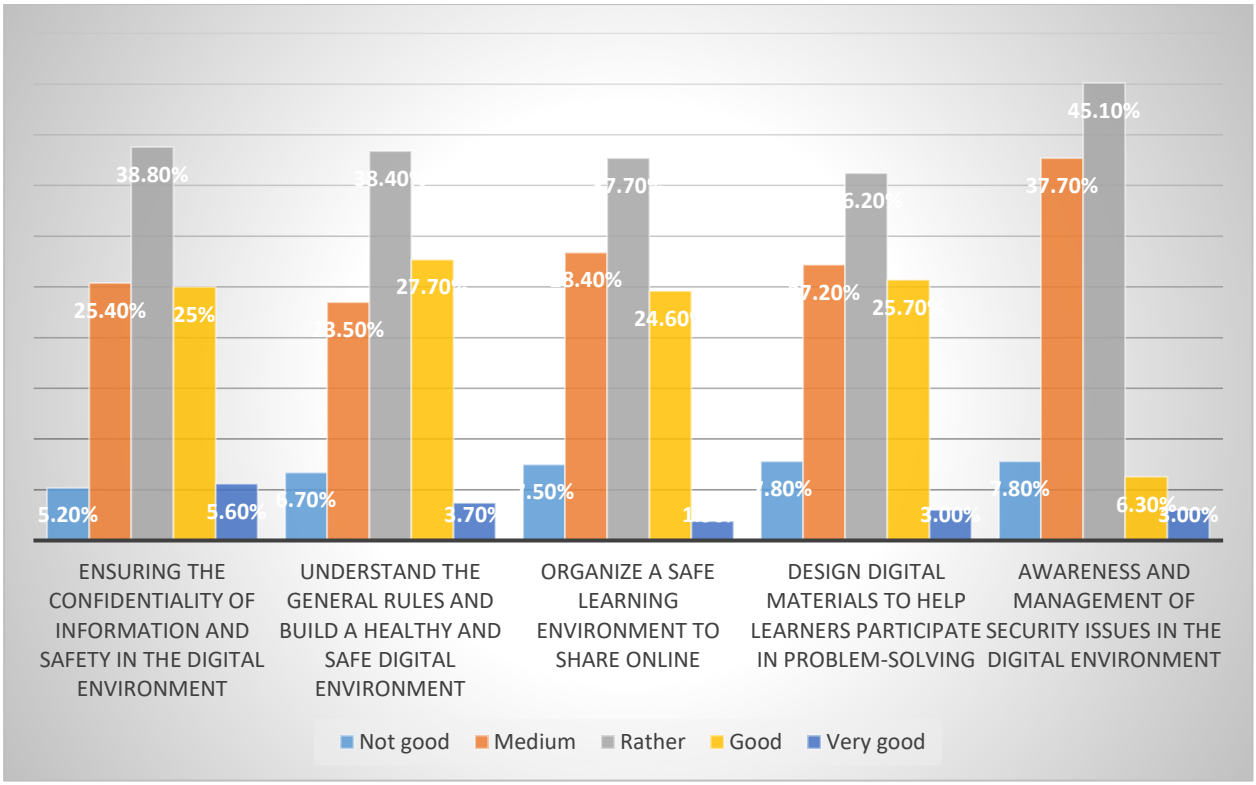

Figure 6 Actual situation of security and safety capacity in the context of digital transformation

Observing the obtained results (Figure 6), the security and safety capacity factor accounts for a low rate of about 25%. Awareness and management of safety issues in the digital environment: Viruses, scams, cookies, popups... good level accounted for 6.3%. Most of the security and safety capacity competencies are assessed at medium and sound levels. Fair level accounts for about 36%, and the average level is about 27%. There is a big difference between the necessity and the level achieved in the security and

safety capacity in the digital environment of the lecturers in the context of digital transformation.

2.6 Digital skills application

Ability to apply digital skills through Knowing how to use digital tools: Creating lectures, searching for information, creating accounts, and using email...; electronic lectures, digitized textbooks and documents; Set of technology tools to create a supportive learning environment; select and use appropriate ICT tools for student assessment and management; analyze the difficulties and obstacles when implementing digital transformation.

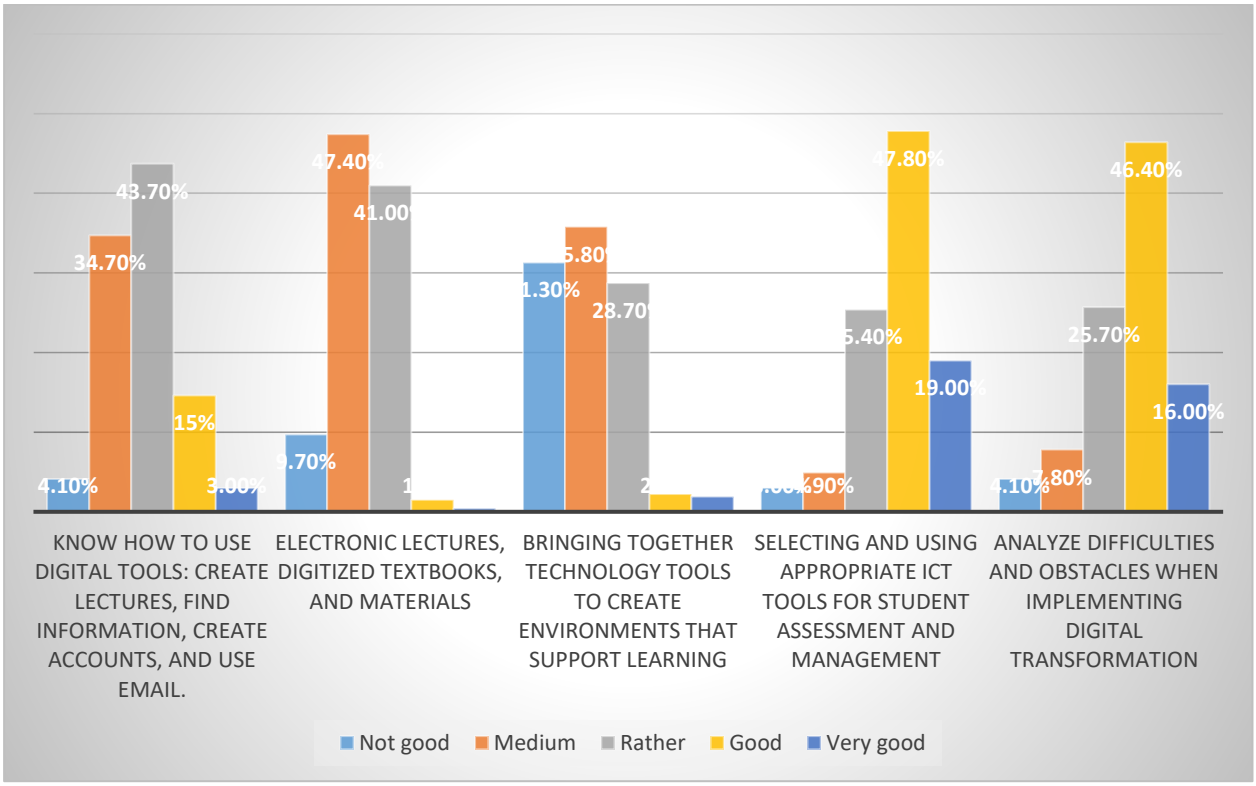

Figure 7 Actual situation of security and safety capacity in the context of digital transformation

Observing the obtained results (Figure 8) shows that the factor in the ability to apply digital skills accounts for a low percentage, specifically: Knowing how to use digital tools: Creating lectures, searching for information, creating resources accounts, and email usage... accounted for a reasonable rate of 14.6%; Electronic lectures, textbooks, and digitized documents accounted for a reasonable rate of 1.5%. The collection of electronic lectures, textbooks, and digitized documents accounts for an alarming rate of 9.7%. Awareness and management of safety issues in the digital environment: Viruses, scams, cookies, popups... good level accounted for 6.3%. Most security and safety capacity-related

capacity is assessed at medium and fair levels, accounting for about 30%. The collection of technology tools to create a good learning support environment is about 2.2%. The level of achievement in the ability of lecturers to apply digital skills in the context of digital transformation is low.

3. Solutions to improve the teaching capacity of lecturers at Vinh Long University of Technology Education in the context of digital transformation

Through the above results, in order to meet the changes in the context of digital transformation, the task of universities is to strengthen measures to improve the teaching and scientific research capacity of lecturers, specifically:

Establish an advisory board on teaching skills for lecturers, and conduct and monitor periodic assessments through learners' feedback channels on lecturers' teaching activities in the digital environment. Sending lecturers to participate in training courses related to digital skills in teaching and scientific research of prestigious national and international organizations, creating favorable conditions for lecturers to access teaching methods positively. Organize seminars on teaching skills, and invite external experts to teach and share experiences on digital transformation. Organize training on teaching skills in the context of digital transformation integrated into the profession for lecturers, especially young lecturers. Organize intensive skills courses focusing on skills such as: Developing lesson plans, designing questions and situations in teaching, and developing teaching evaluation criteria in the context of digital transformation.

Create opportunities for young lecturers to participate in national and international projects to improve professional capacity associated with scientific research and approach active teaching methods on digital platforms. Encourage lecturers to participate in scientific research activities to solve practical problems of digital transformation. These arising problems require solving through the process of teaching and research to create A product that is applicable and feasible. Improve the efficiency of scientific research activities in universities by rewarding and remunerating valuable scientific research..

CONCLUSION

From the scientific research of the article, six key competencies have been identified that are necessary for the context of transforming the number of university lecturers as The ability to understand ICT and operate equipment; digital processing capacity and creativity in teaching; scientific research capacity

based on ICT; collaborative communication capacity based on using digital technology; capacity for security and safety in cyberspace; ability to apply digital skills. These competencies are essential in improving the quality of training at universities in the context of digital transformation. This study surveyed 134 lecturers participating in teaching at Vinh Long University of Technology and Education. In the context of Industry 4.0, promoting all human activities with artificial intelligence and connecting to the Internet of Things, the capacity of lecturers has certain limitations that make the results not commensurate with the goals and tasks. People still play a crucial role in managing and controlling work. The research results show that the level of achievement in the teaching capacity of lecturers in the context of digital transformation is only good compared to the necessity. This study is the basis for proposing solutions for further studies to promote the capacity of lecturers to meet the needs of the digital transformation context.

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