

ASSESSING THE ROLE OF TECHNOLOGY APPLICATION IN UNIVERSITY EDUCATION TODAY

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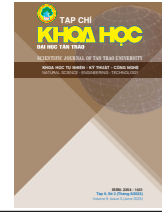
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Abstract:

In the current context and trend of educational innovation, the application of science to education has become popular and extremely important. Scientific and technological achievements are applied to teaching activities. From there, it contributes to innovating and improving teaching methods and tools. In particular, experiencing 4 outbreaks of the Covid-19 epidemic, it has proven that the application of science and technology in teaching activities is indispensable to help maintain teaching and learning activities anytime, anywhere. With the above question set forth, in this article, the author focuses on clarifying and affirming the role and position of the application of science and technology in teaching activities in the higher education environment.



ĐÁNH GIÁ VAI TRÒ CỦA VIỆC ỨNG DỤNG CÔNG NGHỆ TRONG GIÁO DỤC ĐẠI HỌC HIỆN NAY

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Thông tin bài viết	Tóm tắt
<p>Ngày nhận bài: 16/12/2022</p> <p>Ngày sửa bài: 05/03/2023</p> <p>Ngày duyệt đăng: 16/5/2023</p>	<p>Trước bối cảnh và xu thế thế đổi mới giáo dục như hiện nay, việc ứng dụng khoa học vào giáo dục đã trở nên phổ biến và vô cùng quan trọng. Những thành tựu khoa học và công nghệ được áp dụng vào hoạt động giảng dạy. Từ đó góp phần đổi mới và cải tiến phương pháp, cách thức, công cụ giảng dạy. Đặc biệt, trải qua 4 đợt bùng phát dịch Covid-19, đã chứng minh việc ứng dụng khoa học công nghệ vào hoạt động giảng dạy là không thể thiếu giúp duy trì hoạt động dạy – học ở mọi lúc, mọi nơi. Với cách đặt vấn đề trên, trong bài viết này, tác giả tập trung làm rõ và khẳng định vai trò, vị trí của việc ứng dụng khoa học và công nghệ vào hoạt động giảng dạy trong môi trường giáo dục đại học.</p>
<p>Từ khóa:</p> <p><i>Vai trò, công nghệ, ứng dụng, giáo dục đại học.</i></p>	

1. Introduction

As many other socioeconomic sectors, higher education is strongly dominated by the technology conditions. It is an open and promising interactive environment. The application of science in teaching is understood as the application and combination of inventions and technological achievements into teaching activities. Digital platforms for education are increasingly being applied in most universities. Stemming from the educational trend in the digital age, the application of technology in teaching activities in the current period is an indispensable activity.

Stemming from the role of information technology in socio-economic development in general and education in particular, especially in the knowledge economy, the Prime Minister signed Decision No. 1755/QĐ- TTg on September 22, 2010 approved the

project “Make Vietnam soon become a strong country in information and communication” with the goal that by 2020, Vietnam’s e-government will rank well in the world.

Then, on November 4, 2013, Resolution No. 29 NQ/TW of the central government on the fundamental and comprehensive renovation of education and training to meet the requirements of industrialization and modernization also clearly indicated the need to promote the role of information technology and modern scientific and technological achievements in state management of education and training.

Besides, the Ministry of Education and Training also has many guidelines on the application of information technology in educational activities. Specifically, Directive 55 CT/BGDĐT dated September 30, 2008 has set out to strengthen teaching, training and application

of information technology in the education sector for the period 2008-2012. In particular, on May 10, 2022, the Ministry of Education and Training issued Decision No. 1282/QĐ-BGDĐT on promulgating a plan to strengthen the application of information technology and digital transformation in education and training in the period of 2022-2025. The Decision has identified the main tasks and solutions to enhance the application of information technology and digital transformation in education and training in the period of 2022 - 2025.

With such an important role of information technology in educational activities, this issue has attracted the attention of many researchers such as the author's work *The application of information technology in teaching* (2006). Tran Cong Triem, Nguyen Duc Vu, education publisher; Author Dang Thi Thu Thuy in 2012 with the project *Information technology application in secondary schools*, Education Publisher. This issue is also the research topic of Master's theses and doctoral theses Master's thesis of student Duong Thi Anh Linh (2013) with the topic *Measures to enhance the application of information technology in work. managing teaching activities in non-public high schools in Da Lat city, Lam Dong province, etc.*

The law of competition and development in higher education is an objective reality. A professional educational institution is always under strong pressure. It is the rapid progress and innovation in economy, science and technology and socio-culture, which has a great impact on the requirement to change the quality of training. The world is developing faster and faster, the innovation cycle of a science and technology field is getting shorter and shorter. Today, science and technology are becoming more and more decisive factors in the development and competitiveness of the economies of each country. Facing the development of such science and technology, innovation in teaching is an inevitable rule. In this article, from making assessments and comments on the current trend of education that always associated with science and technology, The author has demonstrated about the role of technology application in university teaching activities. This shows that this is an indispensable activity in the development trend of higher education institutions today.

2. Research Methods

Based on a combination of different research methods. In particular, the article uses information and secondary data collected from reputable books, newspapers and specialized journals as the theoretical framework for the article. From there, highlighting and aiming at the goal of the article is to clarify the role of the application of science and technology in teaching and learning activities today, especially in the higher education environment.

In addition, the study also takes the subject of the teacher (lecturer) and the learner (student) as the scale to evaluate and identify. These results are based on the responses from the number of interviewees to provide positivistic assessments.

Surveys carried out

- Subjects of survey/assessment: lecturers and students

- Survey time: 9/2022- 2/2023

- Location: TUCST and some universities and colleges in Thanh Hoa province

- Number of surveys: interviewing 200 subjects (Students) in educational institutions. In which 85 female students, 115 male students, including students from the first year to the fourth year. Among the 200 students, there are 160 Kinh students and 40 students from ethnic minorities.

3. Results and Discussion

3.1. Current trends in education

In recent years, the fourth industrial revolution has been mentioned a lot. However, this revolution also has great impacts on many different areas of life, including education. In the context of deepening global economic integration, the demand for higher quality labor is increasing, which has a profound impact on training innovation in higher education institutions. Universities are striving to improve themselves and improve teaching quality. This is an opportunity for schools to renovate their organizational structure, program content, and teaching and learning methods. In order to carry out it, the application of scientific

achievements to teaching is an issue that cannot be ignored.

Enter a new era, with the transformation of the workforce to meet the knowledge economy, globalization and integration. Teaching methods in the direction of learners' ability have been researched and applied. The UNESCO educational organization encourages the use of the competency model to develop learners because the educational goal of the new era is not only the transmission of available knowledge and skills to students, but also special is to equip learners with creative capacity and problem solving ability. With such a requirement, the "academic" way of teaching cannot meet the requirements of new educational activities. The new university training environment is an open space, maximizing the capacity of the team, technical facilities for teaching and learning. Lecturers switch to a more active teaching and learning method, more engaged with students, and more responsible throughout the course of the subject. The proof is that the student's result score is not only the final exam score but also the score of the whole weighting process accounting for 50%. On the other hand, in the current era, in particular in terms of educational activities, it is not uncommon for learners to be equipped with computers or smartphones with internet connection, but has become a popular tool in learning activities. This directly affects teaching and learning methods, it has completely changed the traditional education method, reached an active and global educational space.

One more development trend of education today is learning resources, as well as a digitized learning environment. Information, content, and knowledge sources are gradually being digitized, creating an extremely large open source of learning materials. This has a very clear advantage that it makes it easy for learners to access, look up information, share and give their ideas and views. In addition, the teaching process is the process of learners' interaction with artificial intelligence products, with a digitized learning environment. Therefore, digital learning materials and digital learning environment are effective means in educational processes, helping learners to develop creative thinking capacity, through which the quality of teaching and learning is constantly increased.

3.2. The role of the application of science and technology in teaching and learning activities at university

3.2.1. Improve the effectiveness of educational activities

Each school has to be self-advocating and responsible to students and society. Learners and society are considered as serving objects and at the same time as subjects (students) and objects (society) in judging and evaluating the quality and credibility of a higher education institution. Applying technology to teaching activities, both teachers and learners can easily acquire and exchange knowledge. An image is abstract and vague, but through the support of modern teaching aids, images and knowledge become clear and specific for students to directly observe. According to researcher To Xuan Giap: Knowledge is acquired through the senses according to the ratio: 1% through taste, 1.5% through touch; 3.5% through smell, 11% through hearing, 83% through sight [3] Therefore, the fact that learners can directly perceive things and phenomena in the learning process will help to acquire knowledge more easily and accurately. Especially for real-life phenomena that are difficult for students to see directly, such as earthquakes, volcanic eruptions, tsunamis, etc.

We surveyed 200 students at Thanh Hoa University of Culture, Sports and Tourism about the percentage of knowledge they can remember after studying. The results show that 42/200 votes (21%) of students think that they just need to be heard to absorb and remember knowledge, 182/200 votes (accounting for 91%) of students said that what they see, hear combined with what they are said and thought, the level of knowledge retention will be much higher. It shows that students appreciate the role of information technology in learning activities and knowledge acquisition process.

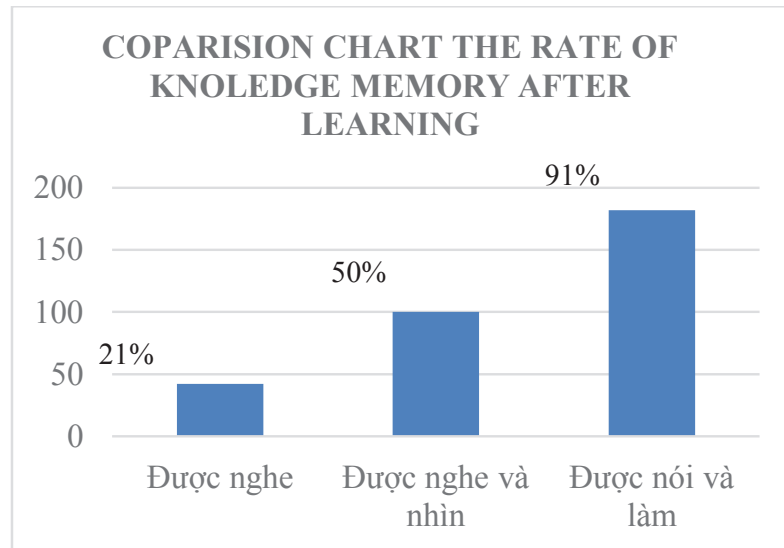


Chart 1. The rate of remembering knowledge after learning

(Source: Author's survey)

Developing technology allows people to access multidimensional and more up-to-date information. From there, learners absorb richer and faster knowledge, promoting awareness and growth thinking. According to the requirements of educational innovation, learners must be researchers and explorers to discover and understand the content of the lesson to exchange and discuss. Therefore, it requires learners to approach the problem from many different sources of information, from many different perspectives so that they can exchange and discuss, thereby indirectly helping to improve knowledge, change thinking that makes learning and research more effective.

The strong application of information technology will help universities make drastic changes in training activities, from renovating programs and teaching methods to managing students and innovating testing, evaluating methods. This will help educational activities achieve high efficiency.

Thanks to science and technology, it has fundamentally and comprehensively changed our country's education, especially in the evaluation stage in education such as; innovate the evaluation system and assessment methods. Evaluation in education will "become a key area in policy-making reform to improve the quality of teaching and learning, the quality of schools as well as the quality of the entire education system" [4; p.2] The university training program and objectives are defined as: knowledge, professional skills, creative thinking capacity. This is

a complex program structure that cannot be divided or taken lightly. Renovating the assessment system in all aspects with the focus on assessing learners will help educational activities achieve the highest efficiency.

3.2.2. Flexibility in acquiring knowledge

The world becomes friendlier, safer and smaller as traffic and digital information grow higher. The characteristics of learners are changing, learning is not only for young people, but learning is a lifelong task. Therefore, science has helped universities to move forward to provide and meet this demand of learners.

In fact, the division of higher education is getting higher and higher, because the pressure of the human resource market in the early years of the 21st century is very intense. The global economic system has been transformed, rearranged, and strongly impacted by science and technology; in which automation, digitization, and chemistry take place quickly, causing a part of low-skilled workers to be unemployed, if they are not retrained. Therefore, during university studies, especially information technology majors, learners need to quickly access modern technology to meet the needs of the training profession.

E-lecture is a form of classroom teaching organization in which all teaching plans and activities are programmed and controlled by the lecturer. E-lessons can be flexible for both teachers and learners. It helps knowledge information to be classified and exploited in many different forms such as graphics, photos, movies,

sounds.. From there, the knowledge modules are transmitted to students more vivid and richer. Besides, in the era of internet and telecommunications boom like today, information is always flooded. Therefore, teachers as well as learners can easily grasp, update and supplement new information about the fields through the media.

According to our survey on 200 students, through the question, is it important and convenient to receive information through technological means? The number of learners who highly appreciate the role and convenience of technology thinks that knowledge as well as understanding and information is updated and absorbed mostly through the means of communication technology, accounting for 190 votes (accounting for 95%). The remaining 5% (mostly first-year students) think that technology does not have much impact on the acquisition of knowledge, knowledge is obtained mainly through life experiences.

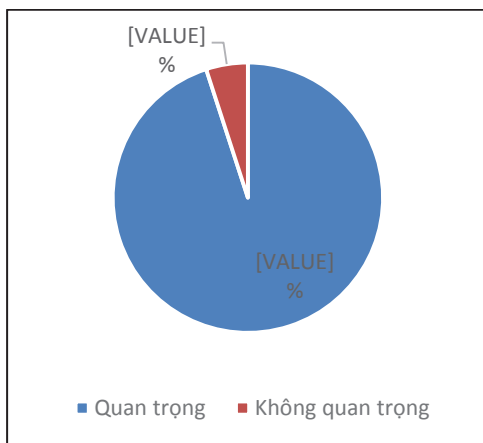


Chart 2. Evaluation of the role and usability of technology in acquiring knowledge

(Source: Author's survey)

On the other hand, information technology makes it easy for learners to access academic information anytime, anywhere. Learners can self-study anytime, anywhere as long as there is an internet connection to study on computers and phones. The application of technology has opened up a large space, with a learning society that allows people from different countries to participate in discussing an issue without having to gather in one place. From there, learners can actively learn, exchange knowledge and cultivate lifelong experiences.

With the development of science and technology. Schools must change their teaching models, such as online training without classrooms, without teachers in class, learners are guided through the Internet, etc. to meet the increasing needs of learners.

The development of science has opened up the space and time for study and research to be flexible and expanded

3.2.3. Promote the activeness, self-discipline and initiative of learners

Teaching that promotes self-discipline and initiative of learners is to form and develop self-study and information-seeking capacity, from there, it cultivates flexibility, independence and creativity of thinking.

In order to promote the activeness of students, the first step is to innovate teaching. A lesson is considered good when it promotes the positivity, self-discipline, initiative and creativity of both teachers and learners in order to improve knowledge, foster cooperation capacity, and ability to apply knowledge into practice, fostering self-study methods, bringing learning excitement to learners. This means that it is necessary to renew the relationship between teachers and students in the direction of collaboration to develop learners' social competence. With this method of education, teachers need to make learners feel interested and find it necessary to receive the learning content, thereby taking the initiative in the process of acquiring knowledge. To ensure that, it is necessary to change from teaching method in the style of "one-way transmission" of teachers and students to teaching how to learn, how to apply knowledge, practice skills, form competence and quality to develop the capacity to solve complex problems [1; p.18] It is very important for teachers to give real images and examples through modern teaching means and students to make their own comments and judgments.

Innovating the way of learning and teaching is not a local thing for teachers and students, in fact, this is a revolution in universities, First of all, on the cognitive level, then there are scientific and technical solutions as well as the reorganization of the teaching staff. In particular, with the participation of science and technology, students will have the ability to criticize science. Obviously, in order to criticize science, learners must have sufficient knowledge about that scientific problem. Students then practice observing

many dimensions, contents and structures, relating to many related fields (interdisciplinary research). Those multi-dimensional insights, in the current information explosion era, students are not difficult to find on various information sites and document channels.

Thus, in order to promote the initiative and positivity of learners, one of the important solutions is to switch from content-accessing educational programs to approaching learners' capabilities. It means that we move from caring what students learn to caring what students will be able to use from the knowledge they have learned to apply in practice. Self-disciplined and active learning methods play an important role in activating and promoting students' creativity. In many different forms, teachers need to practice and form for students general learning methods and specific learning methods specific to each subject, in which science is applied to teaching activities in order to provide the best learning outcomes.

4. Conclusion

In any era or in any country, the quality of education is always the top concern of the whole society because of its importance to the development of the country. To realize the above goal, improving the quality of teaching and learning activities plays a key role. In particular, the issue of improving the quality of teaching on the basis of organization and application of technology

to innovate teaching activities is considered the most breakthrough stage.

Higher education today is experiencing very exciting developments, with many rapid innovations in terms of scale, content and form in order to satisfy the increasing requirements of learners. The practice of higher education takes place according to an objective law, in which the integration of traditional factors and the ability to flexibly apply technology to teaching activities will bring about fundamental changes in teaching practices, training content and quality, meet learner expectations and society's expectations.

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