

## Promoting the application of digital technology in examination and assessment at high schools - important basic to improve the quality of education in Viet Nam today

Nghiem Van Long\*

\*(Department of Geography, Thai Nguyen University of Education, Viet Nam

### ABSTRACT

The application of digital technology in educational activities is an inevitable trend, having a strategic role in the educational reform process, this is also a necessary skill for teachers in the current 4.0 technology era. In the process of teaching, examination and assessment is a very important activity which helps to assess students' competence and determine the level of achievement of students' educational goals. With that in mind, researching the application of digital technology in examining and assessing teaching results in high schools has high practical significance, it is consistent with the trend, and it is an important basis for improving quality of education in Viet Nam today. The main research methods used are: research, synthesis, document analysis; field survey in high school and expert method.

**Keywords** - Digital technology, examination, assessment, education, Viet Nam

Date of Submission: 24-07-2021

Date of Acceptance: 09-08-2021

### I. INTRODUCTION:

Education in Vietnam has had fundamental and comprehensive changes over the years in terms of objectives, content, methods and forms of teaching organization, in order to meet the requirements of the country's reality in the integration context and 4.0 technology era. The 4.0 technology era has put Vietnam's education in front of opportunities and challenges, and also created advantages for educational innovation towards modernity. The strong development of digital technology has promoted the application of information technology to all activities of the teaching process, including examination and assessment. This is an activity that plays an important role in assessing students' learning outcomes in the direction of competence development. In recent years, the application of digital technology in examination and assessment has achieved many important results, but there are still certain limitations. The deployment and synchronous implementation of solutions is essential to improve the quality and efficiency of this activity.

### II. RESEARCH RESULTS AND DISCUSSION:

#### 1. The role of examination and assessment in education

Examination and assessment is an activity that plays a very important role in education, this activity provides accurate and timely information,

determines learning and training achievements according to the level of satisfaction required to be achieved of the general education program and the progress of students to guide learning activities, adjust teaching and learning activities in order to improve the quality of education. Examination and assessment are meaningful for teachers, students, parents, and administrators, social organizations.

- Examination and assessment helps teachers adjust and renew organizational forms and educational methods in the process of teaching and education; promptly detect the efforts and progress of students in order to motivate, encourage and detect difficulties that cannot be overcome by themselves to guide and help to improve the quality and effectiveness of learning and training activities of student, contributing to the achievement of educational goals.

- Examination and assessment helps students have the ability to self-comment and participate in comments; self-study and self-regulate learning; communication and cooperation; be interested in learning and training to improve.

- Examination and assessment helps students' parents to participate in assessing the process and results of learning and training, the process of forming and developing students' qualities and competences; actively cooperate with schools in student education.

- Examination and assessment helps education administrators at all levels promptly direct

educational activities, innovate teaching methods and assessment methods to achieve high efficiency in education. Helping social organizations obtain accurate and objective information, promote social resources to invest in education development. [1][2]

## 2. Applying digital technology in teaching

Digital technology is a new concept that has been formed in recent times associated with the 4.0 Revolution. The 4.0 technology era associated with the 4<sup>th</sup> Science and Technology Revolution (4.0 Revolution) is going strongly all over the world, this is a transition from traditional operating models to modern models based on digital technology platform. This revolution has far-reaching effects on all fields of social life, to countries and regions all over the world. Digital technology is a modern technology that is formed, developed and operates on the basis of: Big data, Internet, cloud computing (ICloud), in which data is digitized, stored, analyzed and processed to create new values applied in practice. [3]

Applying Digital technology is the use of digital technology in different fields to change the method of operation, data storage and management in order to improve the quality and efficiency of work, including the field of education.

Applying digital technology in teaching activities is the use of scientific methods, technology and modern technical tools to exploit and exchange digital information, effectively serving educational activities. Specifically, it is the use of computers, computer software and other technology devices in lesson preparation, teaching, examination, assessment, and supporting students' learning and research in order to develop profession. [4][5]

## 3. Perspectives on educational innovation related to the application of digital technology in examining and assessing teaching results

The renovation and improvement of the quality and effectiveness of educational activities in general, examination and assessment activities in particular have received the attention of the whole political system and all forces in society. These orientations are offered in the education development strategy and action plan of the Government.

Regarding examination and assessment in education, Viet Nam's education has determined that this is an activity which has important significance for the development of education. In order to continue to improve the quality and effectiveness of this activity in a modern direction, the education determined: *"Fundamentally renovate the form and method of examination, testing and assessment of education and training results, ensure honesty and*

*objectivity; the test, examination and assessment of education and training results need to step by step follow advanced criteria trusted and recognized by the society and the world education community; coordinate using assessment results in the learning process with the end-of-term assessment, the end of the school year; the teacher's assessment with the learner's self-assessment; the school's assessment with the assessment of the family and the society"*.

In the educational development strategy for the period 2020-2030, it is clearly stated: *"Continue to innovate teaching methods and assess learning and training results in the direction of promoting positivity, self-discipline, initiative and creativity and self-learning competence of learners"*. The Government's action program on fundamental and comprehensive renovation of education and training, meeting the requirements of industrialization and modernization in the context of a socialist-oriented market economy and international integration determined: *"Innovate the form and method of examination and assessment of educational results in the direction of assessing learners' competence; combine the assessment of the whole process with the assessment at the end of the semester and the school year according to the model of countries with developed education"...*[6]

Applying digital technology in teaching and learning activities is a strategic direction in the educational reform process in Vietnam. Digital technology has been contributing effective tools, methods and solutions to effectively support the implementation of content and method innovation. In a comprehensive way, digital technology is both a supporting tool as well as a content and a method to achieve educational goals in the teaching process. The revolution of science and technology, especially information and communication technology and digital technology is creating favorable conditions for fundamentally renovating the contents, methods and forms of educational organization, renovating educational management, towards an e-education that meets the needs of each individual learner.

The Ministry of Education and Training attaches special importance to the application of digital technology in teaching methods innovation, examination and assessment. Encourage teachers to actively prepare lesson plans, lectures and teaching materials that apply digital technology in their subjects. Encourage teachers to actively apply digital technology in teaching activities, design lessons using slides, electronic lectures and lesson plans on computers; apply digital technology in examination and assessment activities to improve the quality and efficiency, ensure fairness and objectivity of this activity, and properly reflect students' competences. [7]

#### **4. Reality of applying digital technology in examination and assessment**

##### **\* Result**

In recent school years, with the opinion of fundamentally and comprehensively renewing education, bringing Viet Nam's education into a modern education, meeting the requirements of reality in the context of integration, the application of digital technology in examination and assessment in the direction of student's competence development has achieved many results:

- The Ministry of Education and Training is always interested in directing renovate the form and method of organizing exams, testing and evaluation such as: guiding the application of the matrix of exam questions and test questions while paying attention to comprehensiveness of the teaching content and checking the thinking level, in which digital technology is applied to design exam questions and exam matrix. Deploy and use software and applications online multiple choice test to ensure objectivity and fairness in examination and assessment. Organize assessing student on a national scale, participate in assessments international high school student (PISA). Organize a contest to apply interdisciplinary knowledge to solve real-life situations for high school students; competition of science and technology research for high school students to encourage high school students to research and create science, technology, and engineering and apply their acquired knowledge to solve real-life problems in the life. Promoting the application of digital technology platform in organizing these contests and exams with online exam forms thanks to supporting software and applications.

- Teachers have the right awareness of innovation in teaching methods. Many teachers have clearly identified the need and desire to implement synchronous innovation of teaching methods and examination, assessment. At the same time, teachers are also aware of the role of digital technology in renewing teaching methods, including examination and assessment, to meet the requirements of educational innovation in the context of global integration. Since then, actively participate in refresher courses, training and self-improvement to improve the competence of applying information technology in teaching.

- Many teachers have applied teaching methods, positive assessment in teaching; skills in using teaching equipment and applying information and communication technology in the organization of teaching activities are improved; apply the new testing and assessment process thanks to the programs, training and fostering to improve the

competence of applying digital technology in teaching.

- Facilities serving innovation of teaching methods, examination and assessment in recent years have been paid special attention. Many projects of the Ministry of Education and Training have being implemented on a national scale, which have gradually improved teaching conditions and applied information technology and digital technology in high schools, creat favorable conditions for the innovation of teaching methods, examination and assessment, especially the investment in computer systems, projectors, and the Internet-important foundations of digital technology.

With the positive impacts from educational management levels, awareness and quality of innovation activities in teaching methods, testing and assessment of secondary schools in the direction of promoting the application of digital technology has positive changes, contributing to improving the quality of education and teaching step by step. [1][2]

##### **\* Restriction**

Testing and assessment activities have not met the requirements of objectivity, accuracy and fairness; The examination mainly focuses on the requirement of representing knowledge and assessment through scores, which has led to the situation that teachers and students maintain teaching in the traditional way, students learn more about memorization, less interested in applying knowledge. Many teachers have not properly applied the test preparation process, so the tests are still heavily subjective on the part of the teacher. Examination and assessment activities right in the process of organizing teaching activities in the classroom have not been paid attention to and implemented in a scientific and effective manner. The application of digital technology in these activities has not been popularized, implemented not really effectively and there is a clear division between localities. [1][2]

##### **\* Causes of restriction**

This reality is from a number of basic reasons as follows:

- Theory on teaching methods, examination and assessment has not been applied systematically; The reality of applying theory in a patchy way has not created synchronization and efficiency. Teachers only pay attention to the end-of-term assessment but have not focused on regular assessment in the teaching process and education.

- The competence to manage and direct the innovation of teaching methods, examination and assessment from educational management agencies and high schools is still limited, not meeting the

requirements, not synchronous and not promote the promoting role of this activity for innovation in teaching. Mechanisms and policies to manage the innovation of teaching methods, examination and assessment have not encouraged the activeness of teachers. This is the most important reason why the innovation of teaching methods, examination and assessment in high schools has not been effective.

- The awareness of the need to innovate teaching methods, examination and assessment and the sense of implementing innovation of a part of administrators and teachers is not high. The competence of teachers to apply active teaching methods, use teaching equipment, and apply digital technology in teaching is still limited.

- Teachers still have many restrictions in competence of computer, applying information technology and digital technology in the teaching process in general and in examination and assessment activities in particular, have not yet met the requirements innovation. This competence also has a clear difference by age in the teaching staff, between mountainous and plain, rural and urban, and between localities throughout the country.

- Resources for the process of innovation in teaching methods, examination and assessment in schools such as: facilities, teaching equipment, and digital technology infrastructure are both lacking and asynchronous, thus limiting the application of modern teaching methods, modern examination and assessment forms. [1][2]

### **5. Solutions to promote the application of digital technology in innovation in examining and assessing teaching results**

In order to promote the application of digital technology in innovation activities of examining and assessing teaching results in high schools, improving the quality and effectiveness of this activity in the direction of developing students' competence, it is necessary to focus on the following main solutions:

- Teachers need to be aware of the role of examination and assessment activities in the teaching process for students' competence development. Understand the orientation of examining and assessing students in the current educational context: a combination of regular assessment and periodical assessment, teacher's assessment and student's self-assessment, school's assessment and assessment of family and community; combining the form of objective multiple-choice assessment and essay in order to promote the advantages of each of these forms of assessment; develop appropriate assessment tools for comprehensive, fair, honest, and categorical

assessment, helping teachers and students to timely adjust teaching and learning.

- Strengthen training for teachers on examination and assessment activities in the teaching process in the direction of developing students' competence. Fostering and improving the computer skills of teachers, the ability to apply digital technology to the teaching process, including examination and assessment activities.

- Promoting investment, modernize and develop a system of material and technical facilities, infrastructure serving the application of digital technology in examination and assessment, especially computer systems, networks Internet. Prioritize investment and development of material and technical facilities for areas facing many socio-economic difficulties in order to reduce the disparity between localities in the ability to apply digital technology to the teaching process.

- Developing strongly softwares which supports actively, effectively, easily to deploy and has high applicability in examining and assessing teaching results. [7]

### **III. CONCLUSION:**

With specific research methods, the article has focused on clarifying the theoretical and practical basis of the application of digital technology in examining and assessment teaching results in high schools; analyze the reality of digital technology application in examination and assessment - the results achieved, the problems still present, and the causes leading to the restrictions of this activity. Examination and assessment play a very important role in the teaching process, this is an important basis for improving the quality and effectiveness of education, in order to comprehensively assess students' competence in the direction of development competence. The application of digital technology in examination and assessment will ensure a fair and objective assessment, accurately reflect the student's competence, and provide important information for teachers, schools and families about the learning process, the student's competence development process, from which there are timely solutions to adjust, orient, and help students develop their competence.

In order to improve the quality and effectiveness of the application of digital technology in examination and assessment in the coming time, the education sector and schools need to implement synchronously and effectively solutions such as increasing training for teachers about examination and assessment; fostering and improving the competence of teachers to apply digital technology in teaching; promote research activities, deploy the

application of software in examination and assessment; invest and modernize technical facilities in service of the application of digital technology in teaching. The research results of the article supplement the theoretical and practical basis for the research and application of digital technology in examination and assessment to improve the quality of Viet Nam's education in the coming time in research projects.

#### REFERENCES

- [1]. Ministry of Education and Training, Examination and assessment in the teaching process towards the development of students' competence in high schools (Ha Noi, Viet Nam, 2014).
- [2]. Ministry of Education and Training, Fostering core high school teachers: examining and assessing high school students in the direction of developing quality and competence (Ha Noi, Viet Nam, 2020).
- [3]. Bernd Meier, Nguyen Van Cuong, Modern teaching theory-basis for innovation in teaching objectives, content and methods (University of Education Publisher, 2018).
- [4]. Alison Clark-Wilson, Ornella Robutti, Mike Thomas (2020), Teaching with digital technology, issue 2020-7, page 1223-1242, <http://doi.org/10.1007/s11858-020-01196-0>.
- [5]. Marjorie B. Tiven, Ester R. Fuchs, Evaluating Global Digital Education: Student Outcomes Framework (New York, NY: Bloomberg Philanthropies and the Organisation for Economic Co-operation and Development, 2018).
- [6]. Do Anh Dung, Innovating examination and assessment in the direction of developing student's competence, Ha Noi University of Education, MA, 2019.
- [7]. Ministry of Education and Training, Applying information and communication technology in general education - educational technology (ICT in Educational Technology) (Science and Technology Conference, Ha Noi, 2001).

**\* The article is a product of the elementary theme: "Application of digital technology in examining and assessing geography subject in high school following orientation of developing students' competence", Code: CS.2021.06, Thai Nguyen University of Education, Viet Nam.**