

THE MANAGEMENT SOLUTION OF INFORMATION AND COMMUNICATION TECHNOLOGY APPLICATION IN TEACHING METHOD INNOVATION IN LOWER SECONDARY SCHOOLS IN BAC NINH CITY, BAC NINH PROVINCE MEETS THE REQUIREMENTS OF THE GENERAL EDUCATION PROGRAM

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The Government and the Education and Training sector have considered the application of information and communication technology in teaching method innovation as an important breakthrough in improving the quality of education. Recognizing the importance of applying information and communication technology to contribute to the innovation of teaching methods, schools in Bac Ninh city have implemented many measures to promote the application of information and communication technology in teaching and management. The application of information and communication technology in teaching method innovation in lower secondary schools in Bac Ninh city has initially achieved certain results. Applying Information and communication technology in teaching method innovations are also limited. Through research and survey on the current situation of management of information and communication technology application in teaching method innovation in lower secondary schools in Bac Ninh city, Bac Ninh province, the author has proposed management measures. Applying information and communication technology in renewing teaching methods suitable to the conditions of the lower secondary schools, in order to improve the quality of teaching in the lower secondary schools of Bac Ninh city in particular and improve the quality of general education of Bac Ninh province in general.

Keywords: Management of information and communication technology application; Innovating teaching methods; Lower secondary school; Bac Ninh City, Bac Ninh Province; General education program.

1. Introduction

Nowadays, information technology deeply affects all activities of social life in all countries. In order to acquire such a huge and increasing amount of knowledge in a short period of time studying in schools, the urgent problem facing schools today is to equip with basic knowledge, mechanical skills. Develop students' competencies and at the same time teach learners how to learn, giving them the ability, habits and a passion for lifelong learning. Therefore, the innovation of teaching content and teaching methods in the direction of modernization and technology is indispensable. Currently, in the world as well as in Vietnam, teaching method innovation is taking place very strongly following three main trends: activeization, individualization and technology to contribute to improving the

quality of teaching. In all three of these trends, good application of information and communication technology is required.

The application of information and communication technology has been considered by the Government and the Education and Training sector as an important breakthrough in renewing teaching methods and improving the quality of education.

Recognizing the importance of applying information and communication technology to contribute to innovation of teaching methods, schools in Bac Ninh city, Bac Ninh province have implemented many measures to promote to apply information and communication technology in teaching method innovation and to initially achieve a number of results. However, the application of information and communication technology in teaching method

innovation in general and in lower secondary schools in particular is still very difficult and its effectiveness is therefore not clear. There are many reasons leading to this situation, including the causes of management: some education administrators have not yet oriented teachers to fully realize the role and meaning of public application. Information and communication technology in teaching contributes to innovating teaching methods; The teacher has not mastered the basic computer knowledge and skills. There are teachers who do not fully understand the nature of active teaching lesson plans with the application of information and communication technology and active electronic teaching lesson plans, leading to the abuse of information and communication technology in teaching. Another reason is that the funding source for the purchase of modern teaching equipment, construction of infrastructure for the application of information technology and communication in teaching method innovation is still limited.

2. Research overview

2.1. Foreign

Currently, the knowledge economy has a great influence on the economy of each country as well as the whole world. In the knowledge economy, knowledge plays a leading role in the socio-economic development. Effectively improving the quality of education and training is a measure to develop a knowledge economy. One of the solutions to improve the quality of education is the application of information and communication technology and the application of new technologies to education. To achieve this, the problem posed for educational managers is: How to promote the application of information technology and communication in teaching method innovation? Therefore, the problem of researching management measures to promote the application of information technology and communication in education has really developed widely around the world in general and in Vietnam in particular.

Around the world, countries with developed education focus on the application of information and communication technology such as the United States, Australia, Canada, Japan, Korea, Singapore, the Philippines and Taiwan...The aforementioned countries have gone through many national programs on computerization as well as the application of information and communication technology in the fields of science and technology, in all fields of social life, especially, is application to science, technology and education. These countries consider this as the key issue of the scientific and technical revolution, the key to building and developing industrialization, modernization of the country and economic growth to build and develop. Develop the knowledge economy, integrate with other countries in the region and around the world. It is possible to

go through some.

Policies and programs for information and communication technology application in countries are as follows:

The United States: Information technology - especially the Internet, began to be used in the United States in 1995 (Wiles and Bondi, 2002) and then began to be widely available around the world.

Australia: In March 2000, the Council of Ministers endorsed the direction outlined in the document "Strategic Structures for the Information Economy", which encompasses two overarching goals of school education. for information economy.

Canada: Currently Canada is a country with high technology, media, entertainment, and arts development. Canada uses high technology in most fields of activity and pioneers in the fields of information technology, computers, telecommunications, transportation, engineering, aerospace, urban transportation and microelectronics, electronics, medical tools, high-end software. ...

Japan: Development of a National Program titled: "The plan of an information society - national goals to the year 2000" has been announced since 1972.

South Korea: Activities on e-government and information and communication technology application are distinguished: Projects involving many ministries, agencies and localities are considered e-government projects. using a centralized budget. Information and communication technology application projects are conducted by each ministry, branch or locality using the recurrent expenditure budget or the information technology "Promotion Fund" managed by the Ministry of Information and Communications.

Singapore: In 1981 passed a National Computerization Act defining three tasks: Firstly, to computerize all administrative work and government activities. Second, the coordination of IT education and training. Third, develop and promote the IT service industry in Singapore. A National Computer Committee was formed to direct that work.

The Philippines: The National Information and Communication Technology Plan of the Philippines announced in 1989 defines a common strategy to bring information and communication technology to the country's socio-economic development in the 1990s.

Taiwan: In 1980, Taiwan's informatics policy was announced and the "10-year plan to develop information technology in Taiwan" mentioned the organizational structure of domestic information technology and internal issues. content that the Government needs to do to develop information technology, continue to be able to successfully compete in the world market.

2.2. Vietnam

Right from the anti-American period for national salvation, the Party and State had a policy of applying information technology in a number of fields. Entering the doi moi period, that policy was emphasized and concretized in many resolutions of the Party and Government.

In implementing the policies of the Party and State, since the 70s, information technology in our country has been applied and developed, making an important contribution to promoting the socio-economic development of the country.

The awareness of the whole society about the important role and significance of information technology has been raised one step. Human resources in information technology increased significantly. Telecommunication is developing rapidly in the direction of modernization.

In Education and Training: From the school year 2008-2009 was selected as the school year with the theme: "The school year of IT application and financial management innovation" shows that the Ministry of Education and Training has been very important, pay attention to applying information and communication technology in teaching method innovation.

In schools through the Directive on the tasks of the school year ... the next school years, the Ministry of Education and Training continues to direct: "Promote the application of information technology in education management, unify State management on the application of information technology in Education and Training..."

The application of information and communication technology in management and organization of teaching activities has been interested in and researched by many scientists. Scientific conferences and seminars on information and communication technology have covered the management of information and communication technology application in education and its applicability to the Education environment and Training in Vietnam such as:

- The scientific seminar "E-Learning Research and Implementation" co-organized by the Institute of Information Technology (Hanoi National University) and the Faculty of Information Technology (Hanoi University of Technology) co-organized in early March, 2005 was the first scientific workshop on the application of information and communication technology in the education system to be held in Vietnam.

- National scientific seminar on information technology: "Technology and management solutions in applying information technology to innovating teaching methods" by Hanoi Pedagogical University in coordination with the project Higher education

held from September to December 10th, 2006. The main contents of the workshop discussed: Technology solutions in teaching method innovation (high school, university and higher education), development strategy of information technology application and village transmission into innovation. teaching method. Results and experiences of applying information and communication technology in teaching: Developing and using teaching software, electronic learning materials, ...

The 2010 National Conference on Information and Communication Technology of Vietnam (took place on December 3rd, 2010) assessed that Directive 58-CT/TW is meaningful as a wise, correct and practicality of the Politburo, creating a positive step for the development of the ICT industry. The meeting also evaluated the results achieved over 10 years of implementing Directive 58 on 5 aspects: State management, information technology application, information technology industry development, human resource development. information technology force and information technology infrastructure development.

On December 22th, 2015, in Da Nang, the Department of Information Technology (Ministry of Education and Training) organized a workshop on "Enhancing the application of Information Technology to meet the requirements of fundamental, comprehensive innovation of education and training".

In the seminars, scientists and managers raised important position research issues, information technology and communication technology application and development, especially solutions to promote applications. information and communication technology in education.

From the above works, the author found that application management In recent times, there have been a number of master's theses on research on ICT application management in teaching in high schools in our country.

Through research, the authors have affirmed the meaning of applying information and communication technology to teaching, contributing to innovation of teaching methods and the important role of management measures. The management of information and communication technology application to contribute to the renewal of teaching methods in lower secondary schools is a necessary issue. With the desire to propose some management measures to help the application of information and communication technology to contribute to the renewal of teaching methods in lower secondary schools in Bac Ninh city, Bac Ninh province has effectively, the author has studied in depth on this issue within ten lower secondary schools in the area.

3. Research method

3.1. Group of theoretical research methods

- Studying the Education Law and the State and Party's documents on education and training development orientation; The development orientation of information and communication technology application contributes to the innovation of teaching methods.

- Study documents of the Ministry of Education and Training, Bac Ninh Department of Education and Training related to teaching equipment, innovating teaching methods, applying information and communication technology, contributing to renovating teaching methods.

- Study scientific documents related to the research problem

3.2. Group of practical research methods

- Method of investigation by questionnaires: Through referendums, understanding perceptions and aspirations of administrators, teachers and students to collect information about the current situation of technology application management. information and communication contribute to innovating teaching methods in lower secondary schools.

- Expert method: Collect opinions of experts in the field of information and communication technology application management to contribute to the innovation of teaching methods.

- Supporting methods: Directly attending a number of teaching hours with the application of information and communication technology, contributing to renovating teaching methods; conducting interviews with students, teachers and administrators; Draw comments on the management of information and communication technology application management, contributing to the innovation of teaching methods in junior high schools.

3.3. Other support methods

Using mathematical statistical methods in processing survey data.

4. Some management measures of Information and Communication Technology application in teaching method innovation in junior high schools

4.1. Measure 1: Develop and implement a plan to raise awareness for teachers about the importance of applying information technology and communication in innovation of teaching methods

To make staff and teachers see a great role, the need to adjust the perception of information and communication technology application to contribute to the innovation of teaching methods, especially the right awareness in the design and use active teaching lesson plans with the application of information and communication technology in modern teaching method innovation. On the basis of correct perception, with the attention and direction of the leaders of the units, teachers voluntarily improve their knowledge

of using information technology, actively design and use teaching lesson plans. actively applying information and communication technology.

Create consensus and consensus among the cell, administrators, group leaders, trade union executive committee, secretary of the Youth Union, and the Head of Team. On that basis, it forms a unified block, the collective determination of the teachers and staff of the whole school, from which to actively design and use this type of lesson plan.

Developing a plan to make the task of information and communication technology application a central task in the school year plan. Deploying each work content, assigning responsibilities to each member of the steering committee for the assigned work. There are plans to buy more documents, subscribe to newspapers and magazines related to the application of information technology and communication in teaching method innovation such as: Manuals for document design software. electronics, teaching software... Organizing contests to learn and demonstrate techniques to design active teaching lesson plans with the application of information and communication technology.

4.2. Measure 2: Organize training for teachers at junior high schools on basic computer knowledge and skills. Instruct teachers to use teaching software and teachers to know how to access the Internet effectively.

Equip basic informatics knowledge, information technology and communication skills for educational administrators and teachers so that they can organize and apply them well at work.

Create ICT human resources to carry out the tasks and requirements set in the fields of ICT for the school.

From the academic year 2019 - 2020: 100% of junior high school teachers of Bac Ninh city can use computers and some modern teaching devices such as multi-purpose projectors, smart boards ... Basic skills in exploiting and searching for materials on the Internet, being able to design and use active teaching syllabus with ICT application and able to use some teaching software to design electronic materials integrated into this lesson plan.

Educational administrators and teachers are able to use the basic functions of some teaching software such as: Total Video Converter 3.12; Cabri; Maple; Study English 1.0; Crocodile Physics 605; Geometer's Sketchpad, Macromedia Flash; Violet software...uses electronic materials design integrated into active teaching lesson plans.

Leaders of the education sector should have plans to train and foster computer skills and teaching equipment skills for teachers in a comprehensive manner and on a sector scale.

Organize training classes for teachers to have informatics knowledge in order to design mathematical teaching lesson plans with ICT application according to the following principles: The principle is suitable to the conditions and abilities of the teachers; The principle is easy to apply to teachers; Principle of concretizing each subject of teachers, for each content.

Applying many forms of training for teachers' staff on computer literacy and design and use of the mathematical teaching lesson plan with ICT applications. Combining models: experts, instructors teaching in class and online training model (E-Learning) to optimize learning quality. In addition, during the school year, we often use the IT teachers in schools to guide other teachers.

Fostering teachers to design the mathematical teaching lesson plan with the application of ICT, to refine information such as images, letters, colors, sounds, forms...combined with active teaching methods to make the lesson lively, attractive, exciting and thought-provoking learners.

4.3. Measure 3: Directing to build the process of designing active teaching lesson plans with ICT application

Develop a standard process that applies to secondary school teachers to teach in all subjects when designing active teaching learning lesson plan with ICT applications.

In order to build a standard process that applies to secondary school teachers to teach in all subjects when designing the textbook syllabus with ICT application, the school administrators must introduce to teachers the model of applying ICT in contributing teaching. part of teaching teaching method innovation.

Measures to help teachers and teachers use basic computer skills and teaching software skills in the design of ICT applications. Management managers (Principals) direct professional groups to bring active teaching - learning lesson plan design content with ICT application into professional activities. The way to proceed is as follows: teachers exchange and select lessons that can effectively apply ICT to contribute to the innovation of teaching methods, then assign the design, build them into topics, draw experience and implement teaching. And those lesson plans can be used to organize teaching activities in high school classrooms to bring about high efficiency, meeting the requirements of renovating the current teaching method in secondary schools of Bac Ninh City. The actual survey in the schools shows that all ten secondary schools of Bac Ninh City have not had a process to guide teachers in designing active teaching - learning lesson plan with ICT applications.

4.4. Measure 4: Make long-term and specific plans for each year to invest in purchasing more modern teaching equipment, building high school

classrooms to effectively apply ICT in teaching.

Develop a modern system of teaching equipment to meet the requirements of building high school classrooms and well serve the needs of teaching with active teaching – learning lesson plan with ICT application of the staff of junior high schools in Bac Ninh City, Bac Ninh province.

The first job that the management staff needs to do when managing the purchase of modern teaching equipment, building high school classrooms is to review all the modern teaching equipment that their school has, check carefully. those devices are also usable or not. After that, the management staff based on the specific requirements on the number and types of modern teaching equipment needed for the construction of the high school classrooms of the school then proceed to make a list to buy. Ensure that equipment is purchased in the right quantity and type, and that unnecessary waste is avoided.

On the basis of the equipment to be purchased, the Management Board estimates the cost to be paid for the purchase of these equipment. Investing in modern teaching equipment and building high school classrooms is very expensive. Moreover, managing the use of modern teaching equipment and high school classrooms effectively is also very difficult. In order to achieve the goal of increasing investment in modern teaching equipment, building high school classrooms, school administrators need to do the following jobs well:

- * Mobilize the community to invest in school staff, build high school classrooms
- * Develop a plan to effectively use the state budget and training benefits of the unit to invest in and upgrade school facilities.
- * Improving the management and maintenance of modern equipment
- * Establish a specialized department to manage modern teaching equipment
- * Develop regulations on the responsibilities, powers and obligations of each team and each individual in the school regarding the construction, equipment, use and maintenance of school infrastructure.
- * Organize training for staff members on skills to use and preserve modern teaching equipment
- * Construction and use of high school classrooms

4.5. Measure 5: Apply ICT in testing and evaluating learning results of junior high school students

Examination and evaluation of the results of the application of ICT in the test and evaluation of students' learning results accurately and effectively to serve as the basis for making important decisions in applying ICT in innovation of teaching methods in junior high schools.

Agree in directing the exploitation and use of ICT in innovating the work of examining and evaluating learning results of students in schools. A quick test of students' grasp of the basics. Evaluate the results more objectively. Take advantage of opportunities for students to practice self-examination and assessment skills. Improving the quality of teaching in secondary schools.

Evaluation is an indispensable stage, an important tool in the educational process; has functions, adjusts teaching and learning processes, is the driving force to renew teaching methods, contributes to improve and improve teaching quality.

Assessment has many meanings for learners, teachers as well as managers. With students, testing and evaluation create opportunities for them to think: Memorize, summarize, generalize, systematize, apply, and also to self-evaluate the level of completion of learning tasks. as well as my own progress. Through testing and evaluation also helps students adjust learning methods, knowledge and skills of subjects and create motivation for students to strive better. Get the participation of the students.

To organize the implementation of renovating methods of testing and evaluating learning results using ICTs, the Principal needs to direct the following:

- Organizing teaching examination and evaluation must be based on the teaching objectives of each subject in the junior high school.

- Reasonably using the form of objective multiple-choice tests to evaluate learning results: reinforcement test (at the end of class time) by multiple choice; taking test in the form of multiple choice accounts for at least 20% of the total scores of one-period tests in some subjects.

- Direct the professional group leaders to assign the compilation of multiple choice questions, arranged by chapters and sections to build a bank of multiple choice questions.

- Direct the Information and Communication Department to collect test software, review software in the form of multiple choice to enrich the bank of multiple-choice questions for subjects currently using the form of testing. Objective experience accounts for the majority of subjects such as: English, Physics, Chemistry, Biology.

- Directing the efficient exploitation of the school's website, connecting the computer room network so that students can also self-check and evaluate their learning results: Linking with review sites to consolidate their knowledge with the system. Multiple choice questions range from easy to difficult with specified time and scoring.

5. Discussion

The process of proposing management measures,

ensuring the principle is: The principle of uniformity, the principle of practicality, the principle of feasibility. The proposed management measures are presented systematically, ensuring coherence, easy to understand and apply. Through the results of testing, testing and confirming that the proposed measures are essential and very feasible, it will be one of the solutions to the problem of improving the quality of teaching and learning in Bac Ninh City secondary schools in Bac Ninh province in particular and junior high schools in general.

Bac Ninh Department of Education and Training should have a policy to attract talent in the ICT sector to work for the education sector. Establish a team of experts specializing in researching on the application of ICT in teaching for each subject at each school level.

Regularly organize seminars, fostering classes on the application of ICT in teaching for staff, teachers of schools. Creating conditions for staff and teachers to visit domestic schools as well as schools in the region and around the world have had many successes in applying ICT in teaching. Strengthen more the inspection and examination for the application of ICT in teaching in schools.

Each management staff should try its best in its management and have the following specific jobs:

- Self-researching and researching to improve their theoretical level of education management in general and management of ICT application in teaching in particular.

- Improving the quality of life for school staff and staff and creating all conditions for school staff to study and improve their qualifications.

- Build the school into a cultural organization, a progressive, scientific and modern pedagogical environment.

6. Conclusion

Through studying the current situation of ICT application in junior high schools in Bac Ninh city, Bac Ninh province, the author found that: Application of ICT in teaching requires consistency from perception to specific jobs, the participation of all levels of education managers, teachers and students. Which plays an important role is the contingent of administrators and teachers of schools. From this situation, the author has researched and proposed appropriate measures to help the management staff of lower secondary schools manage the effective application of ICT in teaching, contributing to innovation of methods. Teaching is oriented towards developing students' competencies, improving the quality of education, meeting the expectations of leaders at all levels, local people.

From the results of testing the necessity and feasibility of the measures, it shows that the proposed

measures are completely suitable for application in the management of ICT application in teaching, contributing to innovation of teaching methods in schools. Bac Ninh City Secondary School, Bac Ninh Province. The management of ICT application

in teaching to achieve high efficiency requires managers not only to master specific management measures but also to firmly grasp the basic rules of educational development as well as Related sciences such as: Philosophy, Informatics, Economics ...

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GIẢI PHÁP QUẢN LÝ ỨNG DỤNG CÔNG NGHỆ THÔNG TIN VÀ TRUYỀN THÔNG TRONG ĐỔI MỚI PHƯƠNG PHÁP DẠY HỌC Ở CÁC TRƯỜNG TRUNG HỌC CƠ SỞ THÀNH PHỐ BẮC NINH, TỈNH BẮC NINH ĐÁP ỨNG YÊU CẦU CỦA CHƯƠNG TRÌNH GIÁO DỤC PHỔ THÔNG TỔNG THỂ

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Tóm tắt: Chính phủ và ngành Giáo dục và Đào tạo đã coi ứng dụng công nghệ thông tin và truyền thông trong đổi mới phương pháp dạy học là khâu đột phá quan trọng trong nâng cao chất lượng giáo dục. Nhận thức rõ tầm quan trọng của việc ứng dụng công nghệ thông tin và truyền thông nhằm góp phần đổi mới phương pháp dạy học, các trường trên địa bàn thành phố Bắc Ninh đã triển khai nhiều biện pháp nhằm đẩy mạnh ứng dụng công nghệ thông tin và truyền thông trong dạy học và quản lý. Việc ứng dụng công nghệ thông tin và truyền thông trong đổi mới phương pháp dạy học ở các trường trung học cơ sở thành phố Bắc Ninh bước đầu đạt được một số kết quả nhất định. Tuy nhiên, hiệu quả của việc ứng dụng công nghệ thông tin và truyền thông trong đổi mới phương pháp dạy học cũng còn nhiều hạn chế. Qua nghiên cứu khảo sát thực trạng quản lý ứng dụng công nghệ thông tin và truyền thông trong đổi mới phương pháp dạy học ở các trường trung học cơ sở thành phố Bắc Ninh, tỉnh Bắc Ninh tác giả đã đề xuất các biện pháp quản lý ứng dụng công nghệ thông tin và truyền thông trong đổi mới phương pháp dạy học phù hợp với điều kiện của các trường trung học cơ sở, nhằm nâng cao chất lượng dạy học ở các trường trung học cơ sở của thành phố Bắc Ninh nói riêng và nâng cao chất lượng giáo dục phổ thông của tỉnh Bắc Ninh nói chung.

Từ khóa: Quản lý ứng dụng công nghệ thông tin và truyền thông; Đổi mới phương pháp dạy học; Trường trung học cơ sở; Thành phố Bắc Ninh, tỉnh Bắc Ninh; Chương trình giáo dục phổ thông tổng thể.