INFORMATION AND COMMUNICATION TECHNOLOGY APPLICATION MANAGEMENT SOLUTIONS IN TEACHING METHOD INNOVATION IN PRIMARY SCHOOLS IN THANH THUY DISTRICT, PHU THO PROVINCE TO MEET THE NEW GENERAL EDUCATION PROGRAM IN 2018

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In the past time, the application of information and communication technology in teaching method innovation and application management of information and communication technology in teaching method innovation in primary schools in Thanh Thuy district, Phu Tho province’s response to the new general education program in 2018 has achieved certain results. From the survey and research on the current situation of information and communication technology application management in teaching method innovation in primary schools in Thanh Thuy district, Phu Tho province to meet the digital transformation era, analyzing the advantages and disadvantages, the reason for which the article has stated a system of solutions to manage information and communication technology application in teaching method innovation in primary schools in Thanh Thuy district, Phu Tho province to meet the new general education program in 2018.

**Keywords:** Information and communication technology application management solutions; Innovating teaching methods; Primary schools; Thanh Thuy district, Phu Tho province; New general education program 2018.

1. Introduction

The Government also clearly sees the role of information and communication technology in the development of society in general and education in particular, so there have been many guiding documents to promote the application of information and communication technology in teaching. Practice has shown that the application of information and communication technology in education and training at all levels and levels is very necessary and an inevitable trend. Information and communication technology can be applied at all levels from preschool to university and is especially important for primary education. In recent years, implementing the policy of promoting the application of information and communication technology in teaching, considering information and communication technology as the most effective support tool for innovation in teaching and learning methods. With practice in all subjects, primary school teachers have made great efforts in applying information and communication technology to teaching. However, the application of information and communication technology by primary school teachers is still spontaneous, has not really become a need, and the effectiveness is not high for a number of reasons such as:

- Due to the lack of awareness among primary school teachers about the role of information and communication technology, they have not been active in applying information and communication technology in teaching. The level of information and communication technology of primary school teachers, especially primary school teachers in remote, extremely difficult and mountainous areas is still very limited. Teachers themselves are afraid to change, especially older teachers. In addition, the application of information and communication technology also consumes a lot of time, effort and money.

- Due to inadequate facilities, equipment and environment for information and communication technology application. In particular, the influence and management method of the principal has not been highly effective. How to apply information and communication technology to really become a teacher’s need, an important activity that is carried out regularly and extensively among teachers in Thanh Thuy district primary schools, Phu
ICTEM was implemented in high schools in Vietnam, schools.
improve management capacity for principals in high
apply information and communication technology to
communication technology in building management
innovation for principals in high schools
organize teaching with new teaching means, in line
in the region. However, in order to complete this
program in 2018. From the above reasons, it is
application of Information and Communication
Technology in education and training has been
concerned by most of the countries in the world. At the Asia-Pacific Ministerial Conference (APEC)
mentioned “Education without borders” in which
the role of information and communication
technology is the key stage.

From 2004 to 2007, Intel’s teaching program for
teachers in high schools in Vietnam has effectively
supported us in innovating teaching methods. Contributing to the innovation of teaching methods,
teachers in high schools have been able to update and
organize teaching with new teaching means, in line
with the educational development trend of countries
in the region. However, in order to complete this
process, the biggest requirement for teachers is to
have basic computer skills and to know how to apply
and integrate into the teaching process.

With the SREM project, supporting management
innovation for principals in high schools also emphasizes the role of information and communication technology in building management
information systems. The goal of this project is to
apply information and communication technology to
improve management capacity for principals in high
schools.
The project of information and communication
technology in education and school management -
ICTEM was implemented in high schools in Vietnam,
initially brought certain successes. Through this
project, it has raised awareness for administrators
and teachers in high schools about the benefits that
information and communication technology brings in
management and teaching. If effective information
and communication technology is applied, it will
help us provide complete, accurate and timely
information, meeting all requirements in operating
and making decisions of managers.

Recently, conferences, seminars or in scientific
research topics on information and communication
technology have mentioned the issue of
management of information and communication
technology application in education and its
applicability into the education and training
environment in Vietnam. Most of the conferences
and seminars focus on discussing the role of
information and communication technology in
education and solutions to manage the application
of information and communication technology in
teaching innovation. Authors such as Nguyen Quoc
Hung, Ngo Quang Son, Dang Van Duc, Nguyen
Duc Chuy, Vuong Duong Minh... all affirmed the
role of information and communication technology
application in teaching and contributed to the
innovation of teaching methods.

With the concept that information and
communication technology should be put to use in
training institutions as a tool to support management
work: Such as teaching process management, human
resource management, management academic
results as well as support for scheduling... About
these contents have been written by some authors in
Proceedings of National Scientific Conferences and
Proceedings of International Scientific Conferences
and in prestigious journals of the education industry
such as articles by Ngo Quang Son, Le Hong Son,
Luu Lam, Nguyen Thi Thanh Binh, Vuong Thanh
Huong, Tran Khanh...

Starting from the characteristics of visual
thinking, specific thinking of people, information
and communication technology will be the means
and indispensable conditions to carry out the
process of effectively innovating teaching methods.
Many authors have researched in many different
aspects about the role and outstanding advantages
of information and communication technology to
contribute to improving the quality of teaching,
especially the quality of primary education.
Specific studies such as: Authors Do Trung Ta, Le
Cong Triem - Nguyen Duc Vu, Ngo Quang Son,
Ton Quang Cuong, Dao Thai Lai, Nguyen Huu Chi,
Do Manh Cuong, Nguyen Minh Tuan, Nguyen Chi
Tang... the authors assessed the current status of
the application of information and communication
technology in Vietnamese high schools. From that,
it is confirmed that the application of information
and communication technology in teaching method innovation is very necessary.

The authors Pho Duc Hoa, Ngo Quang Son in the book Methods and technology of teaching in an interactive pedagogical environment, published in 2011 and first reprinted in 2016 have offered a new approach to interaction. Pedagogy as well as active teaching methods are effectively implemented in a technology-rich environment, a multimedia teaching environment. We found that having an interactive pedagogical environment helped teachers to make lectures more attractive and pupils to absorb less abstract knowledge (Hoa & Son, 2016).

The interactive application in innovation of teaching methods in each specific subject has also been studied by many authors such as Ngo Quang Son, Nguyen Trong Tho, Nguyen Thi Ban, Tran Hoai Phuong, Nguyen Thanh Canh, Dang Thi Hong, Dao, Bui Van Nghi, Hoang Ngoc Anh, Trinh Dinh Tung, Tran Minh Hung... Especially with the ministry-level topic “Application of IT in teaching in Vietnamese high schools” by the author Dao Thai Lai as the head of the show, develop new approaches to teaching organization with the application of information and communication technology and at the same time make the most of the benefits that information and communication technology brings in the teaching process (Lai, 2007).

In general, the authors’ research works focus on discussing the role of information and communication technology in education and solutions to accelerate the application of information and communication technology in methodological innovation teaching.

In a recent study, the author Ngo Quang Son gave us an overview of the pedagogical interactive activity model and the application of teaching methods and technology in this environment in different classes, different schools. At the same time, the author also gives the concept of teaching technology and management measures to improve the efficiency of using teaching equipment in high schools. The author also emphasizes the need to work towards effective application of information and communication technology, avoiding abuse of information and communication technology, thereby contributing to improving the quality of teaching.

Research on teaching technology with the design of active teaching lesson plans with the application of information and communication technology and electronic lesson plans, author Ngo Quang Son has commented: “Compared with traditional teaching means, there are only blackboards, white chalks and textbooks... the design of lecture content on computers with the support of a multimedia teaching system in an active pedagogical interactive environment in front of the context the digital era scene... is a big breakthrough. Electronic lectures have supported teachers, giving high school pupils more information, more attractive through diverse and rich information channels: textual content, audio, static and dynamic images. Live Video Clips”. The author highly appreciates the positive effects of information and communication technology on innovation and improvement of teaching quality.

Research on the current situation and propose solutions to manage the application of information and communication technology in teaching innovation in schools, colleges and universities... with authors such as Ngo Quang Son, Nguyen Thanh Binh, Dao Thai Lai, Vuong Thanh Huong, Dang Thi Hong Dao, Tran Minh Hung, Nguyen Minh Tuan... The authors share the same opinion that educational institutions have initially implemented application management, information and communication technology in teaching but the effectiveness is still not high. The exploitation and effective promotion of the use of teaching facilities and equipment with the application of information and communication technology is still very low. In particular, the management of information and communication technology application in teaching has not been implemented synchronously, from planning to organizing, directing the implementation as well as checking and evaluating. Up to now, we find that the management of information and communication technology application in teaching at educational institutions in our country has mainly been integrated in other general activities, not as a single activity, in-depth, scientific action.

Thanks to information and communication technology, it has contributed to improving the quality of education and training. The organization and application of information and communication technology in teaching in high schools, colleges and universities is considered as a new, modern and effective means of teaching. However, for primary school, this is still a new thing. It takes time to research and invest in human and material resources to deploy this model in primary schools in Thanh Thuy district, Phu Tho province to meet the new general education program in 2018.

3. Research method
3.1. Theoretical research method group
- Researching the Education Law, documents, directives and resolutions of the Party and State on the application of information and communication technology in teaching method innovation.
- Researching documents of the Ministry of Education and Training, Phu Tho Provincial Department of Education and Training related to teaching equipment, teaching method innovation, information and communication technology...
application in teaching method innovation.

- Researching curricula, scientific topics, books, newspapers, documents related to the application of information and communication technology in teaching method innovation.

### 3.2. Group of practical research methods

- Survey method by questionnaire: Through polls, find out the perceptions and aspirations of administrators, teachers and pupils to collect information on the current state of technology application management Information and communication in innovation of teaching methods in primary schools in Thanh Thuy district, Phu Tho province to meet the new general education program in 2018.

- Expert method: Get opinions from experts in the field of information and communication technology application management in teaching method innovation in primary schools in Thanh Thuy district, Phu Tho province to meet the program new general education in 2018.

- Methods of researching products and activities: Studying records and lesson plans of teachers, attending some teaching hours with information and communication technology applications, studying professional plans and technology application plans, information and communication technology, teaching assignment... to draw comments on the management of information and communication technology application in teaching method innovation in schools. Primary schools in Thanh Thuy district, Phu Tho province meet the new general education program in 2018.

### 3.3. Other methods of support

Using mathematical statistical methods to process collected survey data.

### 4. Research results: Some solutions to manage information and communication technology application in teaching method innovation in primary schools in Thanh Thuy district, Phu Tho province to meet the new general education program in 2018

#### 4.1. Solution 1: Raise awareness for administrators and teachers about the importance of applying information and communication technology in teaching innovation. Forming new awareness for administrators and teachers about active teaching plans with the application of information and communication technology and active electronic teaching lesson plans

This solution makes administrators and teachers see the role, importance, activeness and effectiveness of the application of information and communication technology in teaching innovation, so that each teacher. The management and teachers have determined that the application of information and communication technology in teaching innovation is one of the important tasks to meet the current trend of educational innovation.

Make administrators and teachers properly aware of the role of active teaching plans with the application of information and communication technology and active electronic teaching lesson plans in teaching innovation. create consensus in directing the design and use of this lesson plan. The application of information and communication technology to innovating teaching methods has developed in recent years, but awareness of the importance of applying information and communication technology in teaching method innovation There are still many debates about the design and use of active teaching lesson plans with the application of teaching methods and electronic active teaching lesson plans. Therefore, the task of managers is to make the collective of administrators, teachers, employees, pupils, departments and organizations inside and outside primary schools clearly aware of the importance of the school. The importance and necessity of applying modern science and technology in teaching. To do that, administrators need to organize training courses for teachers to be deeply aware of and master the guiding documents on the application of information and communication technology in teaching innovation, teaching and learning. transform the content of the industry’s regulations into the responsibility of each individual, requiring everyone to have a sense of self-discipline.

#### 4.2. Solution 2: Organize training for managers and teachers in primary schools on basic computer knowledge and skills. Develop a plan to create information and communication technology human resources for primary school

Improving knowledge and skills in information and communication technology for administrators and teachers, create human resources in information and communication technology to perform well the tasks and requirements set out in the fields of information and communication technology for the center. Teachers’ computer proficiency plays a very important role in the application of information and communication technology in teaching method innovation because only when teachers have basic computer skills can they prepare and teach active lesson plans with the application of information and communication technology. When applying information and communication technology in teaching innovation, teachers need to know how to refine information, skillfully combine effects, images, sounds, colors... to highlight. To make up the content of knowledge that needs to be conveyed to pupils, how to make their teaching hours lively,
attractive, stimulating learning and stimulating creative thinking in pupils. The training to improve the computer literacy for administrators and teachers must ensure principles suitable to the actual conditions of primary schools and the cognitive ability of teachers. To do this, every teacher needs to be trained to master basic computer skills.

Training and fostering knowledge about information technology for managers and teachers (creating human resources of information and communication technology) is an important step in determining the success of the development and application strategy. Information and communication technology of primary schools in particular and of the education and training sector in general. Therefore, there must be a plan, a training policy, a plan to use the teaching staff reasonably and effectively.

4.3. Solution 3: Directing to improve the ability to use a number of information technology application software in innovating teaching methods for teachers

Teachers can use basic functions of some teaching software such as: Total Video Converter 3.12, Cabri, Mable, Study English 1.0, Crocodile Physics 605, Geometer’s Sketchpad, AutoGraph, Imindmap, Violet. E-learning, Mx mix… Teachers are able to use the above-mentioned teaching software to design electronic materials integrated into active teaching lesson plans.

For administrators and teachers, it is difficult to learn and research to understand the basic functions of some teaching software and skillfully use those functions in designing effective teaching plans. It is much more difficult to apply information and communication technology. An hour of teaching with an active teaching lesson plan with the application of information and communication technology, if the teacher simply uses presentation software, it cannot be called an effective application of information and communication technology in the classroom. The teaching process is just a change in the way knowledge is imparted to pupils because it can only be changed from the form of “reading – copying” to “seeing – copying”. Therefore, primary school administrators need to consider improving the ability to use some teaching software for teachers as one of the most important tasks when conducting management of information and communication technology applications in teaching methods innovation.

4.4. Solution 4: Develop a process to design and effectively use active teaching lesson plans with the application of information and communication technology

Building a standard process that applies to teachers of all subjects in primary schools can design active teaching lesson plans with the application of information and communication technology.

- Effectively using active teaching lesson plans with the application of information and communication technology

* Designing active teaching lesson plans with application of information and communication technology

In order to develop a standard process applied to teachers of all subjects in primary schools, it is possible to design an active teaching lesson plan with the application of information and communication technology. Primary school administrators need to introduce teachers to models of information and communication technology application in teaching. After the primary schools have conducted training to improve the level of informatics and the use of teaching software for staff and teachers, the next job is more difficult, which is how to help the staff, teachers can apply what they have learned to the design of active teaching plans with the application of information and communication technology, using this lesson plan to organize teaching activities in the multimedia classroom. How to get the most out of it? The actual investigation in primary schools shows that, although many teachers have proficiently applied information and communication technology to teaching, primary schools do not have a unified process to guide teachers, designing active teaching plans with the application of information and communication technology. The author has proposed the process of designing an active teaching lesson plan with the application of information and communication technology as follows:

Active teaching plan with application of information and communication technology = Active teaching lesson plan + Application of information and communication technology at a basic level.

To design an active teaching lesson plan, it must go through 4 stages:

* Stage 1: Determine the lesson objectives
* Stage 2: Choosing teaching equipment.
* Stage 3: Selection and coordination of teaching methods.
* Stage 4: Designing cognitive activities for pupils.

On the basis that teachers have mastered the design of active teaching plans, administrators can guide teachers to design active teaching plans with the application of information and communication technology according to the following process:

* Step 1: Prepare to prepare lesson teachers need to do the following tasks well:
* Step 2: Develop ideas for content design, prepare electronic materials that will be integrated into active teaching lesson plans.

* Step 3: Implement ideas on the computer.

* Step 4: Check and complete the design of active teaching lesson plans with the application of information and communication technology.

Effectively use active teaching lesson plans with the application of information and communication technology.

* Step 1: Prepare for teaching hours with active teaching lesson plans that apply information and communication technology.

* Step 2: Conduct teaching activities with active teaching lesson plans with the application of information and communication technology.

* Step 3: Experiencing after-hours lessons with active teaching plans with the application of information and communication technology.

### 4.5. Solution 5: Increase investment in purchasing modern teaching equipment, build multimedia classrooms to effectively apply information and communication technology in teaching method innovation

Supplement and develop a system of modern teaching equipment to meet the requirements of building multimedia classrooms and well serve the needs of teaching preparation with active teaching lesson plans with the application of information and communication technology of the teachers of primary schools.

First of all, administrators need to review all the modern teaching equipment that their school has, to check whether these devices are still usable or not. Then, based on the specific requirements of the quantity and type of modern teaching equipment needed by primary schools, they make a list to buy.

On the basis of the equipment to be purchased, the management staff estimates the cost to pay for the purchase of these equipment.

In order to achieve the goal of increasing investment in procurement of modern teaching equipment, administrators of primary schools need to do the following things well:

* Developing a plan to effectively use the state budget to invest in and upgrade modern teaching facilities and equipment.

* Mobilizing the community to invest in modern teaching facilities and equipment.

* Improving management and maintenance of modern teaching equipment.

* Directing the preservation of modern teaching equipment.

### 4.6. Solution 6: Directing the application of information and communication technology in testing and assessing pupils’ learning results right in class

Consistently directing the exploitation and use of information and communication technology in innovation of testing and assessing pupils’ learning outcomes accurately, objectively and substantively. Quickly check the basic knowledge of pupils after each cognitive activity or at the end of each teaching hour to adjust teaching methods appropriately, contributing to improving training quality according to educational goals.

Teachers are proficient in using some software to mix questions for objective multiple-choice exams according to regulations of the Ministry of Education and Training. In the teaching process, testing and assessing student learning outcomes is an important step in determining the student’s academic achievement and level of mastery of knowledge, skills, and application. Testing and assessment are two jobs conducted in a certain sequence or interwoven with each other in order to survey and review both quantitatively and qualitatively the learning outcomes of pupils.

In order to well organize the enhancement of the application of information and communication technology in the assessment of student learning outcomes, primary school administrators should direct and pay attention to the following:

- The organization of testing and assessment of teaching must be based on the teaching objectives.

- Introducing an objective multiple-choice test to assess pupils’ learning outcomes: you can check the knowledge learned at the beginning of the lesson or use the question system to emphasize the key knowledge in the next lesson, each knowledge content or the end of the article.

- Directing the implementation of the school’s website, designing the website, including a review to consolidate knowledge with a system of multiple-choice questions arranged from easy to difficult, with time regulations and answers, announced the Web site for elementary pupils to access and self-assess their learning results.

### 4.7. Solution 7: Strengthening the examination and evaluation of the results of information and communication technology application in the innovation of teachers’ teaching methods

Examining and evaluating the results of applying teaching methods to the innovation of teaching methods of teachers in an accurate and scientific way will contribute to the success in the management of school administrators. To be able to perform this task well, managers need to follow the following process:

* Step 1: Determine the standard.
Administrators must determine the standards that each teacher needs to achieve when applying information and communication technology to innovating teaching methods; these standards need to be built on the basis of the school's reality on modern facilities, teaching equipment and pupils' qualifications. Administrators can evaluate the results of information and communication technology application of school teachers through criteria.

**Step 2: Measure performance**

Principals of primary schools need to establish an education quality accreditation committee to participate in the inspection process to ensure that they are required to collect timely, accurate and objective information.

**Step 3: Evaluate the test results**

To perform this task, managers consider the conformity between measurement results in step 2 with the standard system built in step 1. To do well this step requires managers to have knowledge, information technology, sensitivity to be able to correctly determine the results of technology application in the innovation of teaching methods of each teacher.

**Step 4: Make an adjustment decision**

On the basis of identifying the results of information and communication technology application in teaching method innovation of each teacher, the management staff directs to make adjustment decisions to meet the curriculum. New general education 2018.

**5. Discussion**

Although each solution has its own position and role, they are not separate and only promote the highest efficiency when synchronously implementing those solutions. Therefore, in order to contribute to improving the quality of education to meet the current educational reform requirements, it is necessary to implement synchronously all 07 solutions as presented above.

Proposing management solutions to ensure compliance with the following principles: ensuring uniformity, ensuring practicality, ensuring feasibility and ensuring inheritance.

The proposed solutions have been thoroughly surveyed, analyzed and evaluated. Initial results show that the proposed solutions are necessary and feasible in accordance with the actual conditions of primary schools and the current development trend of education.

It is necessary to have specific and detailed regulations and guidelines for the application of information and communication technology in teaching method innovation in primary schools, uniform in understanding the concept of electronic lesson plans. Directing pedagogical schools or schools with specialized pedagogical training, planning to improve the level of informatics and the ability to apply information and communication technology in innovating teaching methods for pupils. This is one of the important criteria to consider graduation for pupils trained in pedagogy. Directing Phu Tho Department of Home Affairs and Phu Tho Department of Education and Training to have appropriate remuneration policies to encourage teachers to study second degrees in informatics to serve well the application of information and communication technology in educational reform today. There are policies to attract talents in the field of information and communication technology to work for the education sector. Increasing investment in procurement of modern teaching equipment for primary schools.

**6. Conclusion**

In the current period, managing and applying information and communication technology to contribute to the innovation of teaching methods is an inevitable trend of primary schools. However, applying information and communication technology in teaching method innovation is not an easy job. If the application of information and communication technology is not reasonable, it will become an abuse of information and communication technology, leading to the ineffectiveness of the teaching process, not meeting the needs of innovation. Therefore, managing the application of information and communication technology in teaching innovation in primary schools in Thanh Thuy district, Phu Tho province is one of the important tasks of managing teaching activities in elementary schools. In order to avoid this situation, managers need to consider the management of information and communication technology application in teaching method innovation as a breakthrough to improve the quality of education, thereby spending a lot of time, more effort for this job.

From the research results obtained, the author has proposed a number of management solutions to apply information and communication technology in teaching method innovation suitable for primary schools in Thanh Thuy district, Phu Tho province to meet the new general education program in 2018. The results of the evaluation of administrators and teachers show that the management solutions for applying information and communication technology in teaching innovation are both necessary and feasible in line with the reality of primary schools in Thanh Thuy district, Phu Tho province to meet the new general education program in 2018.
Trong thời gian qua, ứng dụng công nghệ thông tin và truyền thông trong đổi mới phương pháp dạy học ở các trường tiểu học huyện Thanh Thủy, tỉnh Phú Thọ đáp ứng Chương trình giáo dục phổ thông mới năm 2018 đã đạt được một số kết quả nhất định. Từ việc khảo sát nghiên cứu thực trạng quản lý ứng dụng công nghệ thông tin và truyền thống trong đổi mới phương pháp dạy học ở các trường tiểu học huyện Thanh Thủy, tỉnh Phú Thọ đáp ứng kỷ nguyên chuyển số, phân tích những thuận lợi và khó khăn, nguyên nhân, từ đó bài viết nêu hệ thống Giải pháp quản lý ứng dụng công nghệ thông tin và truyền thông trong đổi mới phương pháp dạy học ở các trường tiểu học huyện Thanh Thủy, tỉnh Phú Thọ đáp ứng chương trình giáo dục phổ thông mới năm 2018.

Từ khóa: Giải pháp quản lý ứng dụng công nghệ thông tin và truyền thông; Đổi mới phương pháp dạy học; Các trường tiểu học; Huyện Thanh Thủy, tỉnh Phú Thọ; Chương trình giáo dục phổ thông mới năm 2018.

References


GIẢI PHÁP QUẢN LÝ ỨNG DỤNG CÔNG NGHỆ THÔNG TIN VÀ TRUYỀN THÔNG TRONG ĐỞI MỚI PHƯƠNG PHÁP DẠY HỌC Ở CÁC TRƯỜNG TIỂU HỌC HUYỆN THANH THỦY, TỈNH PHÚ THỌ ĐÁP ỨNG CHƯƠNG TRÌNH GIÁO DỤC PHỔ THÔNG MỚI NĂM 2018

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References


