Strategy for the Best Practice of Information and Communication Technology: A Case Study of Primary School in Chaiyaphum Province

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Abstract: The purpose of this research are to study the implementation of ICT in the best practice schools to study of the strategy for the best practice of ICT and to Strategy evaluated for the best practice of ICT in the Primary schools in Chaiyaphum province. Key informants consist of the director, the deputy director and the information technology and communication teachers in the schools. The research area is the case study of primary school in Chaiyaphum province with excellent ICT implementation. A group of informants includes personnel and people involved in ICT. The method of conducting research is qualitative research processes such as interviews, group discussions, and observation. The research tools used include interview record form, group discussion record form, and observation record form which be collected and analyzed following content analysis with the Application Program to organize data for summarizing research results. The research found that the implementation of ICT consists of 6 components as follows: management in educational institutions, infrastructure, instruction, learning process, learning resources, and cooperation of the public, Public, Private and Community Cooperation. For the strategy of being excellent, the executive must study ICT policies to implement the policy into practice and apply in the planning of the educational management process, developing the technology skill of personnel. Furthermore, developing and maintenance by using participatory processes both inside and outside educational institutions. The strategy was evaluated and found that the standards appropriateness, and feasibility are at a high level that can be a guideline for the development of ICT.

Keywords: information and communication technology; schools with the best practice; strategy for the best practice

Introduction

The National Education Act B.E. 2542 (1999) mentioned the use of information technology in education as follows: chapter 9, educational technology, section 65; the development of personnel both producers and users of educational technology provides ability and skills in production including using appropriate technology with quality and efficiency. Moreover, section 66; students are entitled to receive the ability development to use technology for education as the first opportunity in order to have sufficient knowledge and skills to use technology for education in self-seeking knowledge throughout their life.

Therefore, the education with quality and standards for the citizens is an important mechanism for driving national development. Thus, it is the duty of the state to increase opportunities and equality in an access to the education of all target groups for a disparity reduction by developing all educational institutions to have equal quality and standards moreover, providing support systems and encouraging all sectors of the society with potential and readiness to participate in educational management by developing accurate and current information systems in administration and policy decisions which affect all target groups both learners and educational institutions with special needs including the utilization of digital technology systems for an administration and education management that open up the learning channels for learners without limits to create the equality in education without limitations of format, time and place (National Education Development Plan, 2017-2036)

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Ministry of education sets the educational information and communication technology standard for primary schools because they recognize the importance of information and communication technology at the same time, they also take into account the benefits and potential effects of information and communication technology to use in the operation of educational institutions, together with the development of teaching and learning of teachers and students. To provide students with a higher level of skills and learning by setting 6 standards in the aspects of the administration of educational institutions, fundamental infrastructure, teaching and learning, learning process, learning resources, and cooperation of the public, private and community sectors (Ministry of Education, 2007) which is consistent with the Information and Communication Technology Policy, 2011-2020 of Thailand that encourages the use of computer and internet in teaching and learning, and administration within educational institutions in order to maximize the benefits of using information and communication technology in teaching and management of educational institutions including prioritize the use of ICT, reduce an inequality and create opportunities for people to receive equal benefits. The important policy tools are education, infrastructure development for access to data / information / knowledge / governmental services, promotion of public participation in the political system including managing both national and local resources information and communication technology, fundamental infrastructure development of information and communication technology (ICT) which is a high speed internet or other form of communication that is broadband to be modern and distributed evenly, secured, and able to support the needs of various sectors, as well as human capital that must be develop human capital who have the ability of creating and using information effectively also have the judgment and perception knowingly. Including developing ICT personnel that have knowledge, competence and expertise at international standards in order to maximize the use of information and communication technology in the development of teaching and administration with the quality (Ministry of Information and Communication Technology, 2011).

The problem of using information and communication technology for education in schools based on interviews with executives is that there is a budget for management within the educational institutions as well as the fundamental infrastructure system of information and communication technology which used in the institution is low quality. There is still a lack of knowledgeable personnel who are able to use information technology in teaching and learning since small schools still lack the personnel that are in line with the academic disciplines they want, and the communities in which they are located cannot provide cooperation as needed, may be due to the low subsidy of both private organizations and the state in that location (Thitima Thanasri, 2011). In addition, a cooperation in the process of teaching and learning in schools is not able to apply information and communication technology because the infrastructure is lacking of a readiness in both the location, supervisor and systems. Including a cooperation between educational institutions and government organizations is rare. Especially the cooperation of the private sector because the educational institutions are both far and less convenient because of the location of educational institutions are difficult to reach in order to share information technology resources
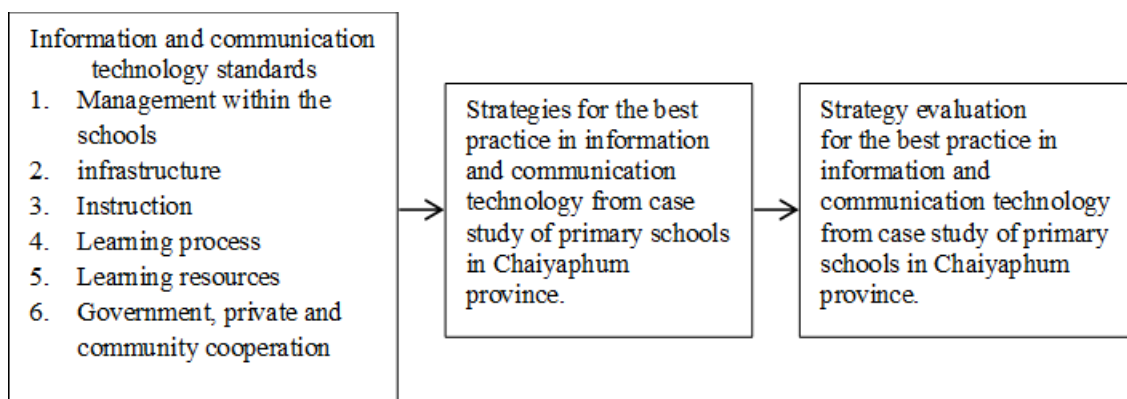
The researcher as an officer in the information department of the school therefore interested in studying guidelines for the development of operation in accordance with the information and communication technology standards for education of educational institutions with the best practice to comply with information and communication technology standards for an effective education for primary education institutions of the Ministry of Education in order to be able to use information and communication technology for educational management with fast, retrenchment, cost-effective, planning the use of information and communication technology to be worthwhile for investment which is in charge of the administration of the school director for maximum efficiency that will benefit the executives and related personnel to lead the dissemination of operation to be a unified standard which shows the guidelines for the development of operation in accordance with information and communication technology standards. Resulting in the development of education that affect the research results to develop personnel potential to be able to use at full capacity, to have clear guidelines for use, and to develop educational management in educational institutions effectively and efficiently.

Objectives

1. To study the operation of information and communication technology of the school with the best practice.

2. To study strategy for being excellent in information and communication technology from the schools with the best practice.

3. To evaluate strategy for being excellent in information and communication technology from schools with the best practice

Conceptual Framework of the Research

In this research, the researcher studied the operation of information and communication technology and tactics for being excellent in information and communication technology from the case study of schools with the best practice in information and communication technology by adhering to the elements of information and communication technology standards from the Ministry of Education (2007, p.2) to define the conceptual framework as shown below:

Information and communication technology standards	Strategies for the best practice in information and communication technology from case study of primary schools in Chaiyaphum province.	Strategy evaluation for the best practice in information and communication technology from case study of primary schools in Chaiyaphum province.
1. Management within the schools 2. infrastructure 3. Instruction 4. Learning process 5. Learning resources 6. Government, private and community cooperation		

Methodology

This research is aimed to study strategy for the best practice in information technology. Case study of primary schools in Chaiyaphum province in order to comply with the research objectives. The researcher has determined the research in accordance with the 3 steps of the process which the researcher would like to present each step of the operation as follows:

Part 1: Study of information and communication technology operation
The researcher will study the process of operating information and communication technology of the school that with the best practice.

1. Studied variables

The researcher divided 6 components of the information and communication technology operation according to information and communication technology standards, such as the administration within educational institutions, infrastructure, instruction, learning process, learning resources, and cooperation of the public, private and community sectors.

2.   The target area of the research

The researcher therefore chose Sunthorn Wattana School as a research area school with information providers.

3.   Research tools

The researcher created the tool from the conceptual framework of the research, namely content analysis, divided into 3 types: interview record form, group discussion record form, and observation record form.

4.   Data collection

The researcher used a triangulation collection method by using 3 different methods, namely in-depth interviews, in the snowball sampling technique from school administrators, teachers, and educational personnel, including those involved. For group discussion, it was collected from school administrators, teachers, and educational personnel, including those involved in the conversation issue of information technology and communication operation. Observing and taking notes is a data collection with observations within the research area about the operation of information technology and communication by adhering to the principles of information and communication technology standards for education of primary schools.

5.   Data analysis

Using the information obtained from in-depth interviews and group discussions which the researchers studied from real phenomena in the study area to paraphrase the verbatim audio tape and save to word processing program. After that, import data into application program to make the line number and print it out. Then, categorize information and create models for information and communication technology operation.

Part 2: Creating strategy and assessing strategy for the best practice in information and communication technology

1.   Exports

There are 5 experts in an evaluation of proposals for appropriate operation is selected with the purposive selection by setting the criteria for selection as follows:
    1.1 Being a scholar of higher education with an expertise in information and communication technology in schools, 1 person
    1.2 Being supervisors who supervise information and communication technology in schools, 2 persons
    1.3 Being a school administrator or teacher and educational personnel in educational institutions that have the best practice in information and communication technology, 2 persons

2.   Tools and quality finding
    2.1 Tool used to create strategy is a strategic draft record form for the best practice in information and communication technology.
    2.2 The instrument used to find a quality is the strategic evaluation form for the best practice in information and communication technology with a rating scale of 5 levels..

3.   Data collection
    Checking for completeness, integrity of the strategy approaching to the best practice of information and communication technology that has been evaluated by experts and analyzed by using the qualitative data analysis program for processing

4.   Data analysis

The researcher adopted the strategic evaluation form for the best practice in information and communication technology to perform data analysis with 2 criteria: propriety standards, and feasibility standards by finding the mean and standard deviation from considering and using the criteria of the class interval (Boonchom Srisaad, 2013, p. 45).

Part 3: Creating a guideline to operate information and communication technology in schools
The data and model obtained from qualitative data analysis with the qualitative data analysis program are synthesized as an important issue in the preparation of the information and communication technology operation manual in educational institutions by adhering to the 6 elements of information and communication technology standards, consisting of: 1. the administration within educational institutions, 2. fundamental infrastructure, 3. teaching and learning, 4. learning process, 5. learning resources, and 6. cooperation of the public, private and community sectors. However, when creating a guideline, the researcher will publish it later.

Research result

Strategy for the best practice of information and communication technology: a case study of primary school in Chaiyaphum province

1. The operation of information and communication technology consists of 6 components as follows: 1) management in educational institutions: such as having a plan to support the budget, and current information. 2) infrastructure: there are network system in the school, software, classroom arrangement, and maintenance system. 3) teaching and learning: such as organizing courses, learning management, using media, teacher is a model for using technology, counseling guidance. 4) learning process: such as learning by media, having media skills, having moral in using media. 5) learning resources: including having a website, learning resources, collection of innovative media. 6) cooperation in the public, private and community sectors: including cooperation, providing services, and network construction.

2. Strategy for the best practice that the executive must study the government's policy on information technology for communication to apply the policy framework to practical application in the educational management process, management planning, technological skills development of personnel in an operation, learning management, media usage, development and maintenance by using participatory processes both inside and outside educational institutions.

3. Strategy for the best practice in information and communication technology when evaluated by experts, found that the standards, suitability and feasibility standards are at a high level that can be used as a guideline for the development of information and communication technology.

Summary and discussion of the result

The study of strategy for the best practice of information and communication technology: a case study of primary school in Chaiyaphum province. The objectives are to study the operation of information and communication technology of schools with the best practice, to study the strategy for the best practice in information and communication technology from schools with the best practice, and to evaluate strategy for the best practice in information and communication technology from schools with the best practice. There are 3 methods of conducting research, as follows: part 1: Study of information and communication technology operation, part 2: Creating strategy and assessing strategy for the best practice in information and communication technology, and part 3: Creating a guideline to operate information and communication technology in schools. The result found that the operation of information and communication technology

consists of 6 components as follows: 1) Management in educational institutions: such as having a plan to support the budget, and current information. 2) Infrastructure: there are network system in the school, software, classroom arrangement, and maintenance system. 3) Teaching and learning: such as organizing courses, learning management, using media, teacher is a model for using technology, counseling guidance. 4) Learning process: such as learning by media, having media skills, having moral in using media. 5) Learning resources: including having a website, learning resources, collection of innovative media. 6) Cooperation in the public, private and community sectors: including cooperation, providing services, and network construction. Strategy for the best practice that the executive must study the government's policy on information technology for communication to apply the policy framework to practical application in the educational management process, management planning, technological skills development of personnel in an operation, learning management, media usage, development and maintenance by using participatory processes both inside and outside educational institutions. Strategy for the best practice in information and communication technology when evaluated by experts, found that the standards, suitability and feasibility standards are at a high level that can be used as a guideline for the development of information and communication technology which is in accordance with Sakda Panpeng (2016) that studied information and communication technology management model as a tool for the operation to be the prototype school of Hong Sang Wittaya school. The objectives are to study the state of the use of information and communication technology as a tool for the operation to be the prototype school of Hong Sang Wittaya school, to be variables that are elements of the form to present the management of information and communication technology as a tool for the operation to be the prototype school of Hong Sang Wittaya school, and to evaluate the management of information and communication technology as a tool for the operation to be the prototype school of Hong Sang Wittaya school with a group of key informants consisting of: 1 school administrator, 1 academic department head, 8 subject group heads, 1 computer teacher, 1 teacher who is responsible for information and communication technology, 12 student representatives, 12 parent representatives, 9 primary school board committees, and 13 local community representatives, all including 58 people. Tool used in the research consists of in-depth interviews, questionnaires and group discussions. Statistics used in data analysis are frequency, percentage, mean, standard deviation, and content analysis. The research found that Hong Sang Wittaya school has a school management according to the master plan of "One district, one school in a dream". The framework of strategy, the concept of CEO management principle, and management concepts aimed at the achievement is at the highest level. The school divided the use of information and communication technology or ICT into 3 main tasks: 1) ICT for teaching and learning, 2) ICT for management, and 3) ICT for service. Moreover, the results of the model evaluation by experts found that the overall picture of the information and communication technology management model as a tool for the operation to be the prototype school of Hong Sang Wittaya school is appropriate, useful and possible at the highest level and the experts agree that the format is consistent with the framework of strategy, the concept of CEO management principle, and management concepts aimed at the achievement. It is very useful for the quality development of education in t Hong Sang Wittaya school which other primary schools can apply to suit their own context and in accordance with Thanut Patpakin (2015) studied the research on the guideline of the information and communication technology development for education for primary education institutions under Nakhon Ratchasima primary educational service area office 2 with the objectives to study the development conditions and propose the guideline for the information and communication technology development of education for educational institutions under Nakhon Ratchasima primary educational service area office 2, which covers the size of educational institutions such as small, medium, large. The simple random sampling was used and received the sample of Nakhon Ratchasima primary educational service area office 2, 123 schools that divided into 58 small-sized schools, 62 medium-sized schools and 3 large-sized schools. The informants are teachers who are responsible for information and communication technology of educational institutions, each educational institution with 1 person, total 123 persons. The instrument used in the research is a 3-part questionnaire as follows: part 1: questionnaire of the survey form (checklist) part 2: the questionnaire has a 5-rating scale with the criteria for scoring according to Likert five's rating scale, and part 3: the questionnaire has open-ended questions. The results showed that the information and communication technology development for

education of primary education institutions, the overall picture is in the "high" level. The highest average value is the learning process at the "high" level. The lowest average is the learning resource management. In the suggestion from open-ended questions, it was found that schools have problems in the information and communication technology development for education for primary education institutions consisting of: 1) The school should develop a plan for information and communication technology development. 2) The original affiliation should monitor the use of technology media continuously and have clear examination measures by promoting search through the internet. 3) The schools should develop a human resource development program for using information technology media. 4) The schools should arrange for teaching out of normal school hours by promoting searching through the internet. 5) The schools should request network and infrastructure supports from the government, private and community sectors. 6) The schools should encourage teachers to take practical action on computer equipment maintenance. 7) The schools should cooperate with other agencies, including a memorandum of understanding (MOU) between the school and community leader, administrators of nearby schools or other agencies.

Recommendation

The suggestion for research use, administrators should set policies for management and development of information and communication technology systems to be concrete. In addition, the standards and methods for evaluating the quality of information and communication technology management including the structure of information technology management of educational institutions to be flexible and suitable for the context of each school, also have the creation of a network of information and communication technology systems of educational institutions in order to be able to use the work system together, and should develop personnel to have knowledge and skills in information and communication technology to be responsible for the administration of information technology of the school by allocating the budget for procurement of hardware and software equipment that needed to be used through the integration between internal and external institutions..

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