

## Innovation and Information Technology for Educational Administration in COVID-19

<sup>[1]</sup> **Waree Suktai**

<sup>[2]</sup> **Somsak Boonpoo**

<sup>[3]</sup> **Peravat Chaisuk**

<sup>[1] [2] [3]</sup> Mahachulalongkornrajavidyalaya University, Thailand.

E-mail: waree.sok@mcu.ac.th

### ABSTRACT

*Human resource management is an operational process that covers four main tasks, procurement, development, utilization and retention of personnel, as well as policies, practices that enable an organization or school to operate efficiently. Achieving the goals set amidst the Covid-19 situation which causes school students to change their management to keep up with the situation by adjusting their thinking method, adjust the system of rules and regulations, adjust methods and processes, and adjust the cooperation - relationship both within the organization and outside the organization to pass the crisis of personnel to be able to live normally.*

### Keywords

Innovation and Information Technology, Educational Administration, COVID-19

### INTRODUCTION

The coronavirus-2019 outbreak is a worldwide epidemic. This is caused by a new strain of corona virus. It started in December 2019 and was first discovered in Wuhan. The capital of Hubei Province, China, the World Health Organization declared the outbreak an international public health emergency on January 30, 2020 and declared a general epidemic on March 11, 2020. The epidemic can be a distant thing. We are seeing the SARS epidemic and facing continual crises but we never thought it would come until Covid-19 arrives and it affects the world. Today, everyone is increasingly aware that the crisis that is happening is a very close thing that makes life different. Society therefore has to prepare for many things. The difference after facing the Covid-19 crisis starts with the changing lives of our people, while many organizations have adjusted their thinking, behaviour and working ways to be more flexible. In the past, working people always focused on work - life balance, creating a balance between work life and personal life as important. But nowadays, as we all work from home, the proportion of work time and personal life occur at the same time, alternating with each other throughout the day. Work - life integration was born where work life merged with personal life as one until we have to create discipline at work amid the increased freedom and flexibility from work from home, in addition to work from home that creates a home economy (from home economy), e-commerce and online transactions have grown by leaps and bounds. Another noticeable change during the Covid-19 crisis, people are more interested and knowledgeable about health and public health, such as the importance of hand washing wearing a mask or even applying technology as a result, digital transformations that has been discussed for a long time and happens very slowly back being driven faster. [1]

New Normal has thus become a new movement of life and work from the present. In this movement, it is necessary to consider "What education needs to be dismantled and rebuilt?" to make its poor system out of despair and move with a new world that can change must look at the core of the study that, "How will 'society and us' pull the Thai education system out of backwardness and disabilities?", both in the management of the organizations and related departments that play a role in the education system educational institutions to the teaching-teaching practice of personnel involved at all levels, etc., not to further harm the country and society? It's a hard thing to deny, study today "must rebuild the whole system" and "rebuild cooperation" especially with entrepreneurs and the environment that is a source of work, sources of knowledge and new experiences to improve knowledge, skills and have a job for students – students including people who have stepped into working age to comply with the new reality of society - the economy has changed. Human resource management in educational institutions in the new lifestyle is therefore a challenge for educational institution administrators to be able to lead personnel in the organization to develop, driving the organization through the Covid-19 crisis [2] to a new way of life that has changed in a direction that requires technology in education which is consistent with Phimonphan Chuabangkaew who gave the idea that human resource management means executive process persons responsible for the work of personnel and or persons related to personnel of the organization share their knowledge, skills and experience in recruiting. Selecting and recruiting qualified persons to work in that organization as well as maintaining and developing personnel of the organization to have an appropriate quality of working life, as well as enhancing the characteristics of the retired members from working with the organization to be able to live in society happily in the future

Therefore, a good education system should be flexible can adapt to the situation and the environment not only in the country but of the world. The management of the education system in the 21st century has to adapt to "Square education" that will change from one-size-fits-all to meet the needs of learning and personal development more, it has to look more broadly than just the education system, but as the "Ecosystem" of Thai education (TE 2 S: Thailand Education Eco-System) in order to move towards becoming an excellent human capital production base. [3]

From the above point, the author is interested in studying and presenting the issue of innovation and information technology for educational administration in the Covid-19 situation as a guideline to promote the use of innovation and information technology in education to facilitate the school administration. Promoting teaching and learning with technology for administrators, teachers, students and parents in order to integrate and promote learning for students to create learning skills in the 21st century, keeping pace with changes in innovation and technology.

## II. INNOVATION AND INFORMATION TECHNOLOGY IN EDUCATION

### A Theories about innovation

#### 1) Definition of Innovation

Royal Institute dictionary has defined innovation that means something new or unusual, which may be an idea method or equipment, etc. [4]

Kidanan Malithong has defined innovation as a practice or new invention that have never been used before or is the development of a modification from the existing one to be more modern and more effective. [5]

Thawan Mascharat has defined innovation as a new idea, a new form, a new method, a new technique, a new approach, a new product that has been adapted, create, and develop both from the extension of the old wisdom or from a new invention with new wisdom to create something that is beneficial to education in the non-formal education system and informal education. [6]

Tathna Khamanee has the meaning of educational innovation refers to new processes, ideas or methods, education which is in the process of the trials will be organized systematically and fairly extensively to prove efficiency which will lead to further acceptance and use in the education system. [7]

Rogers defined innovation as a new action or object which was perceived as something new with each individual person or other unit and acceptance in society, determining whether something is innovative, Rogers points out, depends on the perception of the individual or group as something new to him. Therefore, the innovation of one group of people may not be the innovation of others, also depends on the duration, something new in the sense of innovation. It doesn't really have to be new but it could mean something according to the definition of innovation, it has been discontinued for a period of time. Subsequently, it was revived and made again because it was seen that it could help solve the problem in that new situation. It was considered something new. So, innovation can mean something new that has never been done before or something new that has been done in the past, but has been

revived or it can be developed from the old one that exists. [8]

From this meaning, the author can conclude that innovation is a different idea, method, approach, action, process or it may be an improvement from the original and then use it for good results, effectively achieve goals that help educational administration to achieve quality results.

#### 2) Type of innovation

Types of innovations are divided into five categories.

1. Innovation in curriculum uses a new approach to develop courses in accordance with the local environment and meet the need to teach more people. This is because the course is always subject to change, to be in line with technological advances. The economy and society of the country and the world Curriculum innovations include the development of integrated curricula, individual course, activities, and experiences and local courses.

2. Innovation in teaching and learning uses a systematic approach to improve and develop new teaching methods that can meet individual learning learner-centered, teaching participatory learning problem-solving learning. The development of teaching methods requires new methods and technologies to manage and support teaching and learning.

3. Teaching media innovation due to the advancement of computer technology network computer and telecommunications technology makes educators try to use the potential of these technologies to produce many new teaching materials, both self-study group study and public learning as well as materials used to support training through computer networks.

4. Innovation in evaluation is an innovation that can be used as a tool for effective measurement and evaluation and do it quickly including educational research institutional education by applying a computer program to support the measurement Evaluation of educational institutions, teachers, teachers.

5. Management innovation is the use of innovations related to the use of information to help in management for the decision of the educational administrators to be fast and up-to-date, keep up with the changes of the world, educational innovations introduced in the field of administration are related to database management systems in educational institutions [9].

Thashana Khamanee has divided the teaching and learning innovations into two broad categories as follows:

1. Innovations in teaching and learning media types which can be divided into two types:

1.1 Print media such as teaching documents finished lesson learning sets, teaching sets, exercises, additional reading books, storybooks, etc.

1.2 Audio-visual media such as movies, television, Powerpoint, computer-assisted teaching, internet, tablet and mobile learning, etc.

2. Innovations in teaching and learning in the category of teaching and learning techniques such as inductive learning, authentic instruction, experiential learning (experiential learning) cooperative learning based on learning 4MAT learning cycle, Storyline Method, CIPPA Model, etc.

From the aforementioned types of educational innovations, it can be concluded that innovations are divided into two main categories, namely educational innovations that

are teaching-learning media and innovations that are techniques or teaching-learning methods. Management of educational institutions that encourage learners to develop perfect learning skills in the 21st century.

## B. Concept of technology theory

### 1) Definition of Technology

The word technology corresponds to the English word "Technology", which comes from the Greek word "technologia". "Technologia" means systematic action. However, the word technology is often used in conjunction with the word science, collectively referred to as "technology". "Science and Technology" which dictionary edition Royal Academy has given the meaning of technology. It is a science that deals with the art of applying applied science for practical and industrial benefits. There is also a giver. The meaning of technology is as follows: Encarta has given the origin and meaning of the word. Technology is a word derived from two Greek words, Tekhne, meaning art or craft (art of craft) and logia refer to the field of study (art of study), so if literal technology means the study or science of craftsmanship.

Supit Kanchanaphan defines technology as a systematic approach to planning, application, and assessment of the teaching and learning process as a whole by giving importance to both the tools human resources and the interactions that occur between humans and tools in order to get a more efficient education model in this sense educational technology uses system analysis as an operational tool. [10]

Saowanee Sikkhabandit said that technology is a scientific method or technique used in various operations to achieve results and from the above meaning, it can be concluded that:

Technology is the application of concepts, principles, techniques, knowledge, methodologies, processes, and scientific products in terms of inventions and practices to be applied in work systems to help change the work for the better and to increase efficiency and the effectiveness of the work to be more applying technology to work in a particular field Technology will have three important contributions and is considered a criterion for considering the adoption of technology as well.

1. Efficiency: Technology will help work to achieve the goals accurately and quickly.

2. Productivity is to work in order to get the most out of the product as fully as possible for maximum efficiency

3. Economy is saving both time and labor in working with less investment but more effective than investment.

Educational technology at present, the operations of various fields to achieve effective goals will use technology to help mostly. Technology is therefore relevant to work systems in all fields, if applied to solve problems in any field will call technology in that field such as medical technology agricultural technology, industrial technology, etc., in the field of education as well, there are many problems that need to be improved, resulting in the emergence of educational technology. [11]

In conclusion, technology is the use of knowledge, tools, ideas, principles. process technique and scientific works to work better to increase efficiency and productivity.

### 2) type of technology

Nutthawut outlined the type of technology [12] as follows:

1. Technology used to collect data such as aerial imaging satellites, digital cameras, video cameras, X-ray machines, etc.

2. Technology used to record data. It will be various storage media such as magnetic tape, magnetic plate, optical or laser plate, ATM card, etc.

3. Technology used in data processing includes computer technology, both hardware and software.

4. Technology used to display data such as printers, monitors, plotters, etc.

5. Technology used in the preparation of copies of documents such as photocopiers, microfilm copiers.

6. Technology for transmitting or communicating information, including various telecommunication systems such as television, radio broadcasting, telegraph, telex, and computer networks both near and far.

### 3) Benefits of Technology

Wilaiwan discussed the benefits of technology as follows: [13]

1. Reduce labor in various tasks such as production control and help to calculate

2. Increase convenience from personal to transportation and communication around the world

3. As a source of entertainment

4. Get a standardized product all the same which idle sees as a reduction in the value of the piece because handmade is the only piece in the world.

5. Reduce production costs

6. Improve the quality of life

7. To create equality in society and the distribution of opportunities

8. Cause more teaching materials

9. Encourage better natural resource management

10. To create a more effective national defense system

11. In the case of the Internet Users can choose to relax freely

## III. THE IMPACT OF EDUCATION ON THE COVID-19 SITUATION

The spread of the corona virus or Covid-19, as a result, more than 15 million Thai students have to stop studying until July 2020, meaning that Thai students will be out of school for up to a third of the academic year. Even the Ministry of education has set a policy to cancel the holidays to compensate for the lost school time but the cumulative absences will also affect students in the long run. And at that time, the government, the private sector and civil society including all Thai agencies must take urgent action to reduce the negative impact that will occur on the youth of these nations, otherwise Thailand may have a huge negative impact in the future.

Covid-19 is considered a crisis that the world is facing right now. Governments of all countries should listen to the views and opinions of healthcare professionals and health professionals as an important response and prepare measures to reduce the spread of the epidemic in the people in a concise and appropriate manner which sometimes some measures may affect the society in other aspects for example, the

impact on the education system could become one of the most serious from now on looking back, what are the consequences that need to be dealt with in time? The Kenan Foundation of Asia has therefore analyzed and summarized 3 important issues as follows:

1) Increased inequality and inequality in education – We have all noticed that inequality and access to quality education is a serious problem in Thailand. The gap between access to education and the readiness of equipment to support learning is clearly increasing. Students at prestigious international and public schools in Bangkok have access to effective online or e-learning when confined to home, while there are millions of Thai students especially children in schools to expand opportunities that their parents are poor, back then, there was no money to buy a computer or notebook to study through online channels under the recession. Various businesses have gone out of business and cut jobs may cause the parents of this group of students having to be laid off or not having a stable job would make it even more difficult for their living conditions. The longer this epidemic last, the longer it will take. The greater the gap in education inequality will be expanded.

2) The effectiveness of teaching and learning is still insufficient. We have to accept that things that happen may create permanent changes. We may not be able to return to normal life as we hoped. For example, when teachers are unable to conduct self-teaching in the classroom as they should be. Educational policy makers therefore need to consider other learning avenues. Instead, unfortunately, the effectiveness of the online teaching system or our e-learning (E-learning) is not enough. Few teachers have been trained in the use of technology in teaching and learning. In addition, many students lack the necessary technology-based learning equipment, especially for students in rural areas. The Ministry of Education is currently considering a solution to the problem with the idea of giving tablets to teachers and students with memory but that may not be due to giving a tablet. It may not help teaching as effective as you hoped. Because if teachers are not trained or have no experience with online classes, they don't understand how it feels when students study online. Lack of techniques for tracking online learning also adheres to the learning style of memorization. Tablet devices may only function as a blackboard replacement. If teachers still focus on teaching by giving long lectures and does not allow students to participate in the class Students will lack the opportunity to practice or you can do your own search for answers. Including the lack of learning technology from the tablet device that they have the opportunity to own This kind of learning will not only make students bored but does not promote learning efficiency analytical thinking of students.

3) Teachers' online teaching promotion and support system is not enough – we all recognize that teachers are the mold of the nation behind the success of human resource development for building the nation's future. Even though you have a small income but there is a commitment and want to make an important contribution to help build people to have a good quality of life as can be seen from the outbreak of the Covid-19 epidemic, many Thai teachers visit homes to monitor the well-being of their students to assess readiness to learn a new way. However, many teachers still feel that they

are not getting enough support, especially in the academic field teaching and learning process adjustment. In many times, when there are changes or urgent announcements but have not been clarified or notified of the exact policy from the director of the school they belong to. It can be confusing for teachers and unsure of where to start teaching online. This includes monitoring learning progress and evaluating educational achievement and how to make adjustments including providing assistance to underprivileged students and having difficult living conditions, etc.

Every crisis has an opportunity for change. This disruption gives us time to look back and look at opportunities to build a quality Thai education system. Changing the old-fashioned rote-focused education model. This has been a limitation for the development of Thai students for decades under the crisis we are facing, we can choose to use traditional methods or adopting a 21st century learning approach by enabling all teachers to access high-impact learning in order to return to the future students of the nation.

Thai teachers should be adjusted in their views on teaching and learning trained Learn techniques to stimulate students' curiosity, appropriately apply the teaching materials, technology necessary for 21st century education, and effective. However, the teacher must be the one who seeks new knowledge and constantly learning new things to adapt to the new paradigm especially the combination of online teaching and regular classroom teaching Teachers should be armed with high-impact teaching practices such as project-based learning. It is a process that encourages student participation by using projects as learning materials, asking questions and researching notes. and find a solution to solve the problem on their own. This practice is the key to developing students with 21st century skills, which are essential skills that Thailand must accelerate to create a competitive advantage in Thai human resources in order to drive Thailand towards sustainable growth and progress. [14]

#### IV. INNOVATION AND INFORMATION TECHNOLOGY FOR EDUCATIONAL ADMINISTRATION IN THE COVID-19 SITUATION

During the time the vaccine was invented, the Covid-19 virus had affected a lot of people and had to adjust their lifestyles to suit the current situation. Whether it's a company employee who has to change the place of work from the company to working from home (work from home), department stores, shops must be temporarily closed according to measures to reduce the risk of spreading the infection to sell online. Healthcare workers who work hard to treat patients and are at high risk of infection, housewives who pay more to buy masks and hand sanitizer or even students who have been postponed for the start of the semester as a result, most students lose learning opportunities. Worst of all, these students are at risk of dropping out of the education system. This will cause a detrimental effect on the life of the child in the long run.

In education in the Covid-19 era, teachers and students have to adjust to unfamiliar learning conditions and bear the increasing burden. Teachers need more time to prepare for teaching. Students take more homework and learn on their own than they do in class. Many children are excited to learn to use technology through technology devices. However,

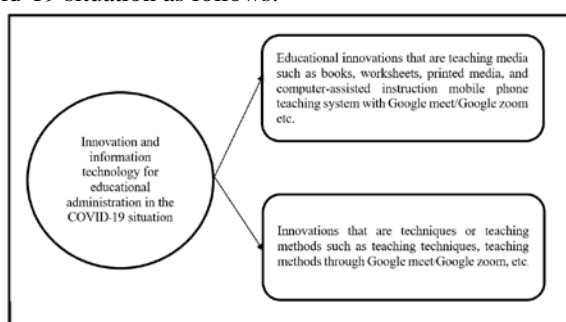
when considering from many aspects, it was found that there are still students in many households who are aggravated by online learning. And the big problem for them is the rising cost, both the cost of equipment for online learning monthly internet service fee higher electricity bills. The more families with more than one school-age child, the cost will increase.

That online learning are many personal availability limitations, especially children in families who are in poverty are at a disadvantage because there are no digital devices at home according to the International Telecommunication Union (ITU), the proportion of households with computers is relatively low compared to the developed country average, digital device especially the poor households and the Northeastern households. Children need to be cared for studying at home is thus pushing the burden on parents, may cause more disparities in education. If parents are not ready to help their children in their studies moreover, there are still more than 80,000 students in areas that have no access to electricity including small schools' medium size in the provinces that the teacher is not familiar with various programs including poor internet signal because Thailand still has high restrictions on distance learning or online learning. However, online learning is not new starting from various tutoring institutes for those who do not have time to travel. You can study online through video clips on the website. Therefore, it is not new in society but during this crisis. Online learning has become a new way of learning because nowadays in the online world can learn together. If you have time, you can study on your own including choosing what to study and when to study.[15]

Innovation and information technology for educational administration in the Covid-19 situation is therefore an innovation in education that is both a teaching media and an innovation that is a technique or teaching method in which both types of innovations play an important role in management. Education of educational institutions that encourage learners to achieve perfect learning skills in the 21st century that administrators, teachers, students and parents must work together to facilitate teaching and learning for students by technology to help teachers, able to collect information, record information, evaluate results, produce copies of documents, and convey important information about education to students effectively.

### Knowledge from Study

From the study of concepts related to innovation and information technology for educational administration in the Covid-19 situation as follows:



**Figure 1** Innovation and information technology for educational administration in the Covid-19 situation

## CONCLUSION

Innovation and information technology for education administration in the Covid-19 situation is an integration applying information technology in education which is a strange innovation to help in education management, facilitating education in the situation of the Covid-19 outbreak, which is a specific situation that causes Thai education to stall, preparation and use of technology to facilitate is therefore an important issue for administrators, teachers, students and parents must realize together in the management of education to be effective according to the educational system. Educational innovations are divided into two main categories: innovations that are techniques or teaching methods such as teaching techniques, teaching methods through the Google meet/system, Google zoom, etc., and educational innovations that are teaching materials such as books, worksheets, publications, computer-assisted instruction, mobile phone, teaching systems with Google meet/Google zoom, etc., which such innovations will help educational administrators manage education through the crisis that arises effectively.

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