

A Model of the Need for Artificial Intelligence Using on the Administration of World-Class Standard Secondary School

¹Piyaporn Jaikaew, ²Teeppipat Suntawan, ³Saythit Yafu

¹Piyaporn Jaikaew, Nakhon Sawan Rajabhat University, Nakhon Sawan, Thailand. piyaporn.jai@nsru.ac.th,
Orcid ID: 0000-0003-2768-5620

²Teeppipat Suntawan, Nakhon Sawan Rajabhat University, Nakhon Sawan, Thailand. teeppipat@nsru.ac.th,
Orcid ID: 0000-0002-3642-2964

³Saythit Yafu, Nakhon Sawan Rajabhat University, Nakhon Sawan, Thailand. saythit.y@nsru.ac.th, Orcid ID:
0000-0001-9967-4109

Abstract

The objectives of this research were to 1) study factors of the need for artificial intelligence using on the administration of world-class standard secondary school 2) construct a model of the need for artificial intelligence using on the administration of world-class standard secondary school and 3) assess the model of the need for artificial intelligence using on the administration of world-class standard secondary school. The research was conducted into 3 steps: 1) studying factors of the need for artificial intelligence using on the administration of world-class standard secondary school. The sample were administrators, deputy administrators and teachers involved, totaling 450 people. The instrument was a questionnaire regarding the need for artificial intelligence using on the administration with a reliability of 0.98. Data was analyzed by mean and standard deviation. 2) constructing a model of the need for artificial intelligence using on the administration of world-class standard secondary school was conducted by connoisseurship of 11 experts. The instrument was the connoisseurship recording form. Data was analyzed by content analysis. 3) assessing the model of the need for artificial intelligence using on the administration of world-class standard secondary school. The sample were 45 administrators. The instrument was a questionnaire regarding the model of the need for artificial intelligence using on the administration with a reliability of 0.98. Data was analyzed by mean and standard deviation.

The research findings were as follows:

1. The factors of the need for artificial intelligence using on the administration of world-class standard secondary school were 12 factors: 1) resource management 2) personnel management 3) academic management 4) planning 5) database management 6) general management 7) budget management 8) learners affair management 9) discipline promotion 10) promotion and support 11) the administrative structure setting 12) educational quality assurance system.

2. The model of the need for artificial intelligence using on the administration of world-class standard secondary school consist of the introduction part, the content part and implementation part. In the part of content comprised 8 factors: 1) resource management 2) personnel management 3) academic management 4) database management 5) general management 6) budget management 7) learners affair management and 8) educational quality assurance system.

3. The assessment on the model of the need for artificial intelligence using on the administration of world-class standard secondary school in overall was at a high level ($\bar{x} = 4.39$, S.D. = 0.54). The aspect of accuracy was at a high level ($\bar{x} = 4.42$, S.D. = 0.55), the aspect of appropriateness was at a high level ($\bar{x} = 4.39$, S.D. = 0.55), the aspect of feasibility was at a high level ($\bar{x} = 4.37$, S.D. = 0.53) and the aspect of usefulness was at a high level ($\bar{x} = 4.37$, S.D. = 0.54).

Keywords: Artificial Intelligence Using, World-Class Standard School.

INTRODUCTION

At present, the educational management of all educational institutions has conducted teaching and learning in accordance with the National Education Act B.E. 2542 and the amendment (No. 2) B.E. in 9 categories, by category 4, on "Education Management Guidelines", which is considered the essence of educational reform that focuses on student-centered education management. and there are other categories as supporting elements The process of managing student-centered education is complete and efficient. This educational management policy has resulted in educational reforms from the former focusing on teachers as the focus on students. By providing teaching and learning conditions for learners to have active roles or participation (Active Participation) by using educational technology methods. From the National Education Act B.E. 2542, the working master law The first education of Thailand, Section 9 Educational Technology, Section 66 with the intention of enabling learners to develop their ability to use educational technology. by providing a teaching environment that is suitable for technology for learners to have knowledge The ability and skills are sufficient to use educational technology to continuously pursue self-knowledge throughout life.

in applying technology and innovation to develop It is mainly used by digital industries and services, information and artificial intelligence using digital technology. Information and artificial intelligence to enhance the competitiveness and competitiveness of industries and services. It covers automation and intelligent electronic robots. and internet in everything to enhance the efficiency of the entire Thai economic sector. build platform for the future economy and increase the quality of life for people by building industries and services of digital, data and artificial intelligence to drive Thailand and promote investment between the government, the Thai private sector and the world's leading

companies in these industries to make Thailand a center of production and research and development. Raising awareness and educating people and applying digital technology Digital, Data and Artificial Intelligence for Manufacturing and Services to Increase Efficiency innovate and new business ventures, pushing entrepreneurs to be certified with international industry standards and building industry clusters to expand Thai businesses in digital industries and services, artificial intelligence automation and robotics and intelligent electronics to cover the entire global value chain, supporting the research and development of enterprises' technology that can be used commercially, has created a partnership between the public and private sectors; and educational institutions and support the use of open information that does not affect individual rights for the benefit of education research and development and business expansion, as well as creating and developing skilled personnel to support the growth of digital, data and artificial intelligence industries and services, as well as the industries and services that use these technologies and incentivize talented people. Experts from around the world to work in Thailand as well as providing assistance and healing to those affected by the drastic and rapid changes in technology

artificial intelligence It is a technology to create capabilities for machines and computers with algorithms and a group of statistical tools. To create intelligent software that can mimic complex human abilities, such as remembering, discriminating, reasoning, making decisions, anticipating, and communicating with humans, although the leaping development of Artificial Intelligence (AI) will see it someday. Invention may replace humans in many tasks, but in education and learning. Artificial intelligence has many benefits. Because artificial intelligence "changes the way of learning" and "changes the way of teaching", some things that may even not seen in the education system of Thailand But believe that soon the new generation will

find teaching of these artificial intelligence teachers are also expected to use Artificial intelligence in educational activities will increase by 48 percent until 2021. Positive impact of artificial intelligence. It will be visible from the learning of kindergarten students until higher education There will also be creating many learning tools. and some will be able to adjust Able to get along with individual learners (Personalized Tool) to achieve the highest academic results. and also challenge the authority and career in the system In the past, such as teachers or administrators of educational institutions as well. but even so To let artificial intelligence do an important role In order to shape the future of mankind, it needs to be overseen well enough. that artificial intelligence can think and transmit It must come from human beings “teaching” and inputting information. that is correct and suitable for artificial intelligence otherwise. Artificial intelligence is just like a troubled child who is confused by massive amounts of data that has not been properly screened.

World-class standard school means a school that develops curricula and provides teaching and learning. with quality comparable to international standards, including management with quality system in order to obtain quality learners is a person who has knowledge, abilities and characteristics (Learner Profile) comparable to international standards (World class standard) and has the potential to be a global citizen (World citizen) in accordance with the intention of 2008 Basic Education Core Curriculum that focuses on development Youth quality for the 21st century, and in line with the UNESCO Declaration on Management of Education: Learning to know, Learning to do, Learning to live with the others, Learning to be. To be successful, several dimensions must be developed simultaneously and the whole system must be implemented, namely the curriculum, teaching and learning management. Management is not the only part of school education. or organized as an international standard study plan school management International standards must have clear aims and directions. and due to the policy of the Ministry of Education that is committed

to the development of quality and educational standards By upgrading leading schools that are ready to become schools of international standards to become schools that are managed with quality standards. Office of the Commission on Basic Education (OBECQA) and develop a step towards the standard National quality assurance (TQA) will continue, resulting in schools to develop learners, curricula and teaching and learning processes. learning resources environment and learning management facilitate students to be able to Continuous self-learning throughout life have a habit of learning have the ability to think Analyze, synthesize, solve problems, initiate creativity, have moral leadership, knowledge, love Thainess and have the ability to move forward. Be a quality citizen Office of the Basic Education Commission The Office of Higher Secondary Education and working groups have studied the guidelines for school operations. original international standard and synthesize relevant documents as well as organizing listening meetings Comments from schools and experts To prepare a document of operational guidelines School of international standards, updated 2018 with the objective of the school in the project. School of international standards understands the intention. scope of success, direction and framework of operations, as well as can be used as a guideline for planning, developing, raising the quality of the school to international standards. and drive the operation to achieve concrete results according to the OBEC Strategic Plan 2018 – 2021 with the goal of developing schools in the project 1,842 international standard schools which will affect learner quality development This is considered an important destination for quality education management.

from the problem of global change and the importance mentioned above Therefore, the researcher is interested in applying the principles of learning artificial intelligence to the management of international standard schools at the secondary level. to help solve problems and be the right way to guide In the management of school education, international standards for secondary education continue to

make school management use management principles to create a link of information through various analyzes called automatic management systems. with artificial intelligence to help in collecting data analyze, process in order to offer alternatives to the school administrators This will lead to the quality of the development of the Thai education system to keep up with the future educational technology development system.

METHOD

This research is divided into 3 steps as follows:

1. Study of needs School administration with international standards for secondary education using artificial intelligence
2. Creating a school management model with international standards for secondary education using artificial intelligence
3. Assessment of the school management model with international standards at the secondary level using artificial intelligence

Research Research Model

1. Requirements for school administration with international standards at the secondary level Using artificial intelligence, what is it?
2. School management model with international standards for secondary education How is it using artificial intelligence?
3. School management model with international standards for secondary education using artificial intelligence be accurate be appropriate possible And is it useful or not and how?

Participants

Scope of data sources

1. Documents, textbooks, academic articles and research related to school administration with international standards for secondary education using artificial intelligence

2 Experts consist of qualified persons with experience. School administrators of international standards at the secondary level, a total of 5 people

Scope of population and sample

1 The population used in this research consisted of schools participating in the international standard secondary school project. that passed ObecQA standards in 2018, 45 schools The information provider is a school director or a deputy school director. Includes data from 45 schools

Data Collection Tools

The researcher proceeded according to the research methodology as follows:

1. Study the relevant documents. and save it in the document analysis result record form.
2. Study related research Then record it in the research analysis record form.
3. Interview with 9 experts and experts
4. Questionnaire on the needs and guidelines for school administration of international standards using artificial intelligence

Data Analysis

1. Statistics used to check the quality of research tools

1.1 IOC values

1.2 Alpha coefficient

According to Cronbach's method

2. Basic statistics include

2.1 Frequency (Frequency)

2.2 Percentages

2.3 Mean

2.4 Standard deviation

3. Statistics used to test the hypothesis

3.1 Exploratory factor analysis (EFA)

Ethical considerations

In this research, it is a research and development to develop an international standard school management model at the secondary level. using artificial intelligence The researcher would like to present the results of the data analysis. according to research objectives with details of the results of the data analysis to be presented in the following order

Part 1 The results of the analysis of needs and guidelines for school administration of international standards using artificial intelligence technology

1. Results of the analysis of documents on concepts and theories about management The concept of school administration with international standards for secondary education. using artificial intelligence

2. The results of the analysis of related research

3. The results of the data analysis from the interview

4. The results of the data analysis from the questionnaire

4.1 The results of the analysis of the basic data of the respondents

4.2 Mean analysis results standard deviation and the level of opinions about the components of the international standard school administration at the secondary level using artificial intelligence

5. The results of the analysis of elements of international standard school administration at the secondary level using artificial intelligence

Part 2 The results of the creation of an international standard school management

model at the secondary level using artificial intelligence

1. The results of the creation bring the need to create a model development guideline by using the school management model with international standards at the secondary level. using artificial intelligence to draw a pattern

2. The results of the examination of the drafting of the international standard school management model for the secondary school level using artificial intelligence to check the suitability of the model with a seminar based on experts by experts with experience in quality management and the administration of the international standard school at the secondary school level, 9 persons jointly criticized and gave suggestions to improve the format accordingly

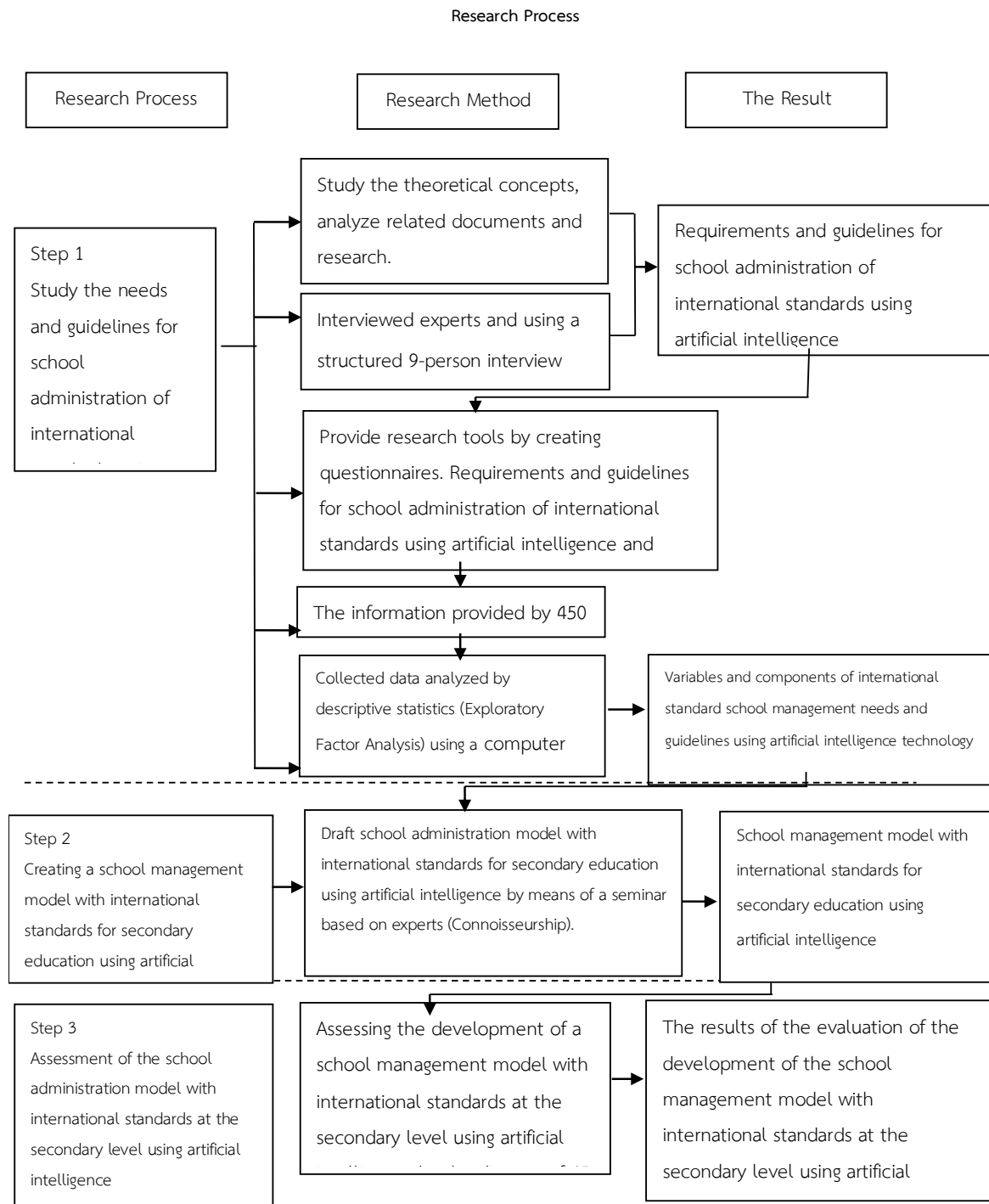
3. The results of the examination of the school administration model for international standards at the secondary level using artificial intelligence

Part 3 The results of the assessment of the school administration model of international standards at the secondary level using artificial intelligence

Table 1 *KMO and Bartlett's test of sphericity*

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.883
Bartlett's Test of Sphericity	Approx. Chi-Square
	df
	sig
	56742.968
	7021
	.000

From Table 1, it was found that the KMO (Kaiser-Meyer-Olkin Measure of Sampling Adequacy) statistic test was equal to .883, indicating that all 119 variables of the international standard secondary school administration By using artificial intelligence, the amount of information is sufficient and appropriate. Factor analysis statistics can be used because KMO values are greater than 0.55 and approach 1.

Figure 1. *Research Process Design*

RESULTS

It was found that there were 12 elements that qualify for the criteria. Component 1 has element weights between 0.623 – 0.952, has Eigen values of 14.022 and has 18 variables. Component 2 has element weights. Between 0.654 – 0.929 had the Eigen values of 13.613 and had 16 variables. The third component had the element weight between 0.558 – 0.823 and

had the Eigen values of 8.295 and had the number of variables. 8 variables, the 4th element has the element weight between 0.580 – 0.881, has the Eigen values of 6.367, has 6 variables, the 5th element has the element weight between 0.569 – 0.753, has the variance (Eigen values is 5.457 and has 7 variables, component 6 has element weight between 0.586 – 0.723, has Eigen values is 5.349, has 7

variables, element 7 has element weight between 0.721 – 0.892 has a value The variance of the variables (Eigen values) is 4.228 with 5 variables, the 8th element has the weight of the element between 0.626 – 0.895, the Eigen values are 3.392, has 4 variables, the 9th element has the weight. Element is between 0.881 – 0.941, has Eigen values of 3.049, has 3 variables, element 10 has element weight between 0.557 – 0.768, has Eigen values of 2.653, has number of variables. 3 variables, element 11 has element weight between 0.582 – 0.764, has Eigen values of 2.453, has 3 variables, and element 12 has element weight between 0.587 – 0.800, has variance of variables. (Eigen values) equal to 2.344, there are 3 variables with a total weight of the elements between 0.702–0.920, the variance of the variables (Eigen values) is 71.222 and there are a total of 83 variables.

DISCUSSION

From the Exploratory factor analysis (EFA) of the school administration of international standards at the secondary school level using artificial intelligence There are 12 components that qualify for the criteria. Component 1 is Resource Management Component, 2 is Personnel Management Component, 3 is Participation Component, 4 is Planning Component, 5 is Database Management Component, 6 is General Administration Component, 7 is Budget Management Component, 8 is Academic Administration Component, 9 is Promotion of Discipline Component, 10 is Promotion and Support Component, 11 is Defining the Administrative Structure and 12 is Application Component.

LIMITATIONS AND RECOMONDATIONS

1. General suggestions

1.1 Promote and support success factors To provide school management with international standards for secondary education using artificial intelligence to achieve goals

Technology Empowerment To enhance the skills and competence in technology to be more quality, organize a learning exchange forum to develop executive competence teachers and students continuously and sustainably Have professional skills in curriculum development and teaching and learning, using materials, media, equipment, innovation and modern technology. Collaborated with parents, community and school partners along with material support. Educational ICT equipment and media have brainstorming various concepts in exchanging knowledge and solving problems together

1.2 International standard school administrators at the secondary level and those involved should understand and prioritize each element appropriate to the school context. To improve and manage schools with international standards for secondary education by using artificial intelligence to be effective

2. Suggestions for the next research

2.1 Should study the factors affecting the support of international standard schools at the secondary level By using artificial intelligence that has the continuity and lack of supporters of the public, private and civil society sectors.

2.2 Research should be done on the application of information and communication technology as an integrated system. (Artificial Intelligence : AI)

CONCLUSION

This research is a research and development of an international standard school management model at the secondary level. using artificial intelligence Results of the study of needs School administration with international standards for secondary education using artificial intelligence with document analysis and interviews with experts A total of 119 variables can be synthesized. Exploratory factor analysis (EFA) of international standard school administration at the secondary school level using artificial intelligence There are 12 components that meet the criteria, namely 1) Resource Management 2) Human Resource

Management 3) Participation 4) Planning 5) Database Management 6) General Administration 7) Administration. Budget 8) Academic administration 9) Discipline promotion 10) Promotion and support 11) Management structure and 12) Application. And Evaluate the school management model with international standards at the secondary level using artificial intelligence with the assessment of accuracy, suitability, feasibility and the overall usefulness is at the highest level

Reference

- [1] Alexey Dukhanov. (2016). Big Data and Artificial Intelligence for Digital Humanities: an International Trans-Eurasian Universities Network. International Young Scientist Conference on Computational Science YSC 2016. 5th, pp449 – 451.
- [2] Alla A. Kornienko. (2015). Knowledge in artificial intelligence systems: searching the strategies for application. International Conference on Research Paradigms Transformation in Social Sciences: 589-594.
- [3] Campbell and et al. (1971). Education Administration. New York: University of Michigan.
- [4] Digital Government Development Agency. (2019). Artificial Intelligence Technology. Digital Government Development Agency (Public Organization) (Public Organization), 23.
- [5] Office of the Higher Secondary Education Administration. (2012). Guidelines for teaching and learning in international standard schools. Revised edition. Bangkok: Agricultural Cooperative Society of Thailand Co., Ltd. Printing House.
- [6] Office of the Basic Education Commission, Ministry of Education. (2018). International Standard School Operation Guidelines. Higher Secondary Education Service Office: 13.
- [7] Secondary education information system. Schools in the international standard project. Assessed ObecQA in 2018 by region. Retrieved April 1, 2020: <http://203.159.154.154/mahayom/obecqa/>.
- [8] Phitawan Nettong, Teeppipat Suntawan and Saithit Yafu 2016 Model of school administration by using information and communication technology of secondary schools in the 21st century, Mahachula Academic Journal Vol.6 No.2 (2019) July - December 2019 ISSN (PRINT) : 2408 - 1078 ISSN (ONLINE) : 2651-2440
- [9] Biographical notes:
- [10] Piyaporn Jaikaew, Ph.D. student Department of Educational Administration, Nakhon Sawan Rajabhat University, Nakhon Sawan, Thailand. 1:
- [11] Asst. Prof. Dr. Teeppipat Suntawan, main thesis advisor, Nakhon Sawan Rajabhat University, Nakhon Sawan, Thailand. 2:
- [12] Asst. Prof. Dr. Saithit Yafu Joint thesis advisor, Nakhon Sawan Rajabhat University, Nakhon Sawan, Thailand. 3: