Curriculum Development to Support Climate Change for Schools at Mueang Nakhon Ratchasima District, Thailand

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Abstract:- The objectives of this study are to study the basics of climate change in schools in Nakhon Ratchasima city, develop and evaluate educational curriculum. It is a mixed research method. Phase 1 was quantitative research, the sample consisted of 261 school administrators and teachers. The instrument was a questionnaire. Data was analyzed by finding the mean and standard deviation. Phase 2 is qualitative research, educational curriculum development. Phase 3 is qualitative research, curriculum assessed by a group discussion of 7 experts. The results show that 1) teachers' need for climate change for the incidence of COVID-2019 in knowledge and skills were PNI = 0.12 while attitudes were PNI = 0.11, 2) The development of the educational curriculum consists of 5 components: 2.1) Principle and rationale, 2.2) Objectives, 2.3) Content; Unit 1 Knowledge of Coronavirus Disease – 2019; Unit 2 Corona Infectious Disease Prevention and Surveillance – 2019; Unit 3 Learning in the Post-Coronavirus World – 2019, 4) Learning Management, and 5) Measurement and Evaluation. 3) Results of curriculum evaluation showed the highest values were in appropriateness, feasibility, and usefulness. Suggestion for policy implications is that schools should take measures to take care of the community in the service area.

I. INTRODUCTION

The current climate of countries all over the world has changed immensely. The impact of the changing climate will be a major concern for humanity to cooperate in order to prevent and strengthen the ability to support these upcoming changes [1]. The factors impacting climate change on human epidemics are diverse, including climate, temperature, and environmental conditions [2]. The convenience of communication allows easy connections between countries, resulting in the rapid spread of pathogens. In December 2019, the World Health Organization reported that a novel coronavirus has spread to other countries. Therefore, knowledge and understanding of the novel virus 2019 is an important basis for preparing Thai people to be able to cope with the epidemic and disease control in Thailand [3].

Human resource development after the epidemic of Coronavirus-2019 is, therefore, an important issue that needs to be considered to bring a paradigm shift. The right principles of thinking, life skills, and vocational skills are necessary to lead humanity to the future of survival [4].

Curriculum development is the core and heart of knowledge management to achieve educational goals. The understanding of the curriculum and its implementation is essential for educational arrangements to work well for both learners and teachers. During the spread of COVID-19 in Nakhon Ratchasima province, many sectors have worked together to raise awareness and gain participation from the people, changing them from fearful citizens to self-aware citizens that understand how to take care of their families and themselves and participate in dealing with the COVID-19 epidemic [5]. It is, therefore, necessary to develop a curriculum to use in educational institutions and educational personnel are needed to cooperate to improve or create new curricula to keep up with the changing world situations. Teachers in Mueang Nakhon Ratchasima city can also further apply the mentioned curriculum following the objectives of the school curriculum.

A. Climate Change Impact on Humans

Climate change refers to the changing of the climate as a result from human activities, both directly and indirectly [6], causing the global temperature to rise and climate variabilities to occur [7] [8]. Distribution of various pathogens causes the tendency to increase the rates of illnesses, injuries, and deaths [1]. Coping with the epidemic requires cooperation from all sectors [2]. The variety of impact on humans includes stress from extreme heat, malnutrition due to drought causing climate disasters, the high temperatures causing various diseases [9] both animals and people are contagions that have increasingly high epidemic rates and the decreasing of agricultural and industrial productions result in droughts and floods [7].

B. Thailand's Risk during the COVID-19 Pandemic

Re-emerging infectious diseases and serious re-emerging infectious diseases are result mostly from climate change and transportation causes rapid infection. The current pandemic is COVID-19, a virus that can cause respiratory diseases and can lead to pneumonia and death [2]. There has

been a widespread outbreak in the People's Republic of China since December 30, 2019, and later, patients in many countries around the world have been diagnosed. The World Health Organization recommends that all countries monitor, prevent, and control this disease. Thailand's first case of the COVID-19 was detected at Suvarnabhumi Airport. Samples were sent to be examined at the Thai Red Cross Emerging Infectious Diseases Health Science Center, Chulalongkorn Hospital. The viral transcription from the samples turned out to be 2019-nCoV, making Thailand the first country outside of China to detect the 2019—nCoV virus before any other country. The COVID-19 global pandemic has brought massive disruption to education throughout the planet [10] and there are no exceptions even in Thailand.

C. Curriculum – Concept and Theory

The research team has presented concepts and theories about the curriculum in terms of curriculum definition, curriculum importance, curriculum guidelines, curriculum objectives and curriculum components as follows,

Curriculum refers to the mass of experience, which has been designed and created as a learning option that suits the needs and nature of the learner with an emphasis on the development of specific learner potential [11]. A curriculum has more depth and variety than a regular course; it uses teaching strategies that emphasize a higher level of thinking to provide the learner with desirable attributes [12].

The curriculum is characterized by a wide variety of subjects, content and a wide range of teaching methods [11] that are student-centered, preparing students for development of life skills in communication, decision making, teamwork, lifelong learning and learning from surroundings [13] which develop students' talents and promotes advanced thinking processes.

Objectives of the curriculum are to develop learners to have knowledge, skills and attitudes in various fields. Learners learn and develop desirable characteristics, focus on working with others in a democratic system, as well as being a great use of leisure time that benefits the individual, community, society, and nation [13].

The components if the curriculum consists of 1) the principles and rationale of the supplementary course, 2) the aim of the supplementary course, 3) the content, 4) learning management, and 5) measurement and evaluation [11] [14] [15].

II. OBJECTIVES OF THE RESEARCH

- To study basic information of the process of developing an educational curriculum to support climate change in schools in Mueang Nakhon Ratchasima city.
- To develop an educational curriculum to support climate change in schools in Mueang Nakhon Ratchasima city.
- To assess the educational curriculum to support climate change in schools in Mueang Nakhon Ratchasima city in terms of appropriateness, feasibility, and benefits.

The researchers have synthesized concepts, principles and done relevant research on basic information of the curriculum development process to support climate change development and evaluation of curriculum, as well as research on the concepts of climate change towards the incidence of COVID-19 infection [6] [8] [2] [1] as illustrated in Figure 1.
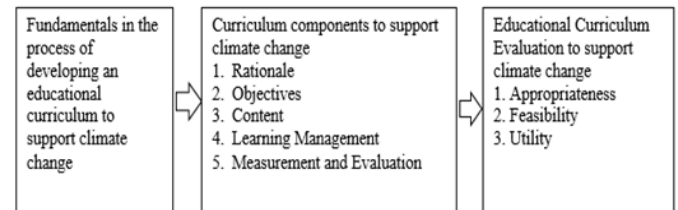

Fig. 1. Conceptual framework

III. RESEARCH METHODOLOGY

This research is a mixed methods research with an explanatory sequential design which is divided into three phases as follows:

A. Phase 1: Fundamentals of the Educational Curriculum Development Process to Support Climate Change

This phase is to assess teachers' needs to support climate change in the incidence of COVID-19. The sample is 32 schools in Mueang Nakhon Ratchasima city, Academic year 2020. The sample size was determined according to [16] table of samples and using stratified randomness. The main informants were the school director and the head instructor from every class. The research instruments were a questionnaire of actual conditions and expectations to support climate change in schools in Mueang Nakhon Ratchasima city against the incidence of COVID-19. There were 40 questions in the questionnaire which used a five-point rating scale rating from highest to least. The questionnaire content was examined for content validity by five experts in which the content was about knowledge, skills, and attitudes, including the analysis of discriminant index in each item by specifying the correlation between each item score and the total score together with the content validity of the questionnaire using Cronbach's alpha coefficient. The questionnaire had a discriminant index of 0.306 – 0.786, with the total content validity of 0.983. The research team collected data from the sample of school directors and the head instructors of schools under the Nakhon Ratchasima Primary Education Service Area Office 1, the Secondary Education Service Area Office 31, and the Nakhon Ratchasima Municipality Office between October 1-30, 2020. The quantitative data were analyzed using SPSS software to find the frequency, percentage, mean, standard deviation and to determine the index priority of items that needed improvement (Priority Needs Index : PNIModified) [17].

B. Phase 2: Developing Educational Curriculum to Support Climate Change of Schools at Mueang Nakhon Ratchasima District

This phase used the information obtained for the process of developing an educational curriculum to support

climate change obtained from phase 1 to develop the educational curriculum which consists of 5 components: 2.1) Principle and rationale, 2.2) Objectives, 2.3) Content; Unit 1 Knowledge of Coronavirus Disease – 2019; Unit 2 Corona Infectious Disease Prevention and Surveillance – 2019; Unit 3 Learning in the Post-Coronavirus World – 2019, 4) Learning Management, and 5) Measurement and Evaluation.

C. Phase 3: Assessment of Educational Curriculum for Supporting Climate Change of Schools at Mueang Nakhon Ratchasima District

The last phase was the assessment of the educational curriculum to support climate change of schools at Mueang Nakhon Ratchasima District in terms of appropriateness, feasibility and utility by seminars based on experts. There are a total of 7 key informants who were curriculum development experts in measurement and evaluation, environmental education, and public health. The instrument used was a appropriateness, feasibility and benefit assessment of the educational curriculum to support climate change in the incidence of COVID-19 in schools in Nakhon Ratchasima city. The assessment is a 5-point rating scale from highest to least. The research team organized an expert-based seminar on December 15, 2020, from 10:00 AM to 12:00 PM at the Kurumitr Conference Room, Faculty of Education, Nakhon Ratchasima province. The quantitative data were analyzed by using SPSS software to calculate the mean and standard deviation. Qualitative data were analyzed by content analysis.

IV. IV. FINDINGS

A. Phases 1

TABLE I. ASSESSMENT RESULTS OF TEACHERS' NEEDS ON CLIMATE CHANGE IN THE INCIDENCE OF CORONAVIRUS-2019 DISEASE OVERVIEW AND ASPECTS

Component	Real Condition				Needs				PNI	Order
	M	SD	Level	Order	M	SD	Order	Order		
Knowledge	4.19	0.66	High	2	4.70	0.46	Highest	1	0.12	1
Skill	4.17	0.54	High	3	4.69	0.41	Highest	2	0.12	1
Attitude	4.22	0.51	High	1	4.67	0.40	Highest	3	0.11	2
Overview	4.20	0.47	High		4.68	0.37	Highest			

From Table 1, it was found that the teacher's Priority Needs Index (PNI) of climate change on COVID-19 incidences found that the knowledge and skills were the highest priority needed (PNI = 0.12).

B. Phase 2

The development of an educational curriculum to support climate change in schools in Nakhon Ratchasima city consisted of five components as follows,

Curriculum Principles and Rationale

School administrators need to understand the context of educational institutions in an era where the external environment has a significant impact on the educational institution, for example, the COVID-19 epidemic that almost every country around the world must eventually get through by coping with it and Thailand had to face and overcome

such crisis, as well as to lead humanity to future survival [4]. Schools in Nakhon Ratchasima city must build inner strength by implementing the philosophy of sufficient economy. The foundation and the strongest defense against COVID-19 is discipline and learning where schools play a crucial role. The researchers, therefore, developed an educational curriculum to support climate change in schools in Nakhon Ratchasima city to provide teachers and educational personnel with accurate knowledge, skills, and attitudes towards the coronavirus-2019 epidemic.

Curriculum Objectives

The objectives of this curriculum are to provide teachers and educational personnel with accurate knowledge and understanding of the COVID-19 epidemic, have the skills to prevent and provide care to family and themselves, and have the right attitude towards the epidemic.

Curriculum Content

Unit 1 Knowledge of Coronavirus Disease-2019 (14-day quarantine procedures in the case of staying with family or sharing living space with others, how to treat Coronavirus Disease-2019)

Unit 2 Corona Infectious Disease Prevention and Surveillance (changing clothes and bathing immediately after work and entering the house, washing hands with soap and water after handling or touching shared items)

Unit 3 Learning in the Post-Coronavirus World (make contributions to the Complaint Center of Mental Health or observe mental crisis or mental crisis hotline, participate in activities that which the public and private sectors campaign against the spread of Coronavirus Disease-2019, have confidence in Thai medical personnel in the treatment of Coronavirus Disease-2019, and confidence in the preventative measure against COVID-19 in Nakhon Ratchasima province.

Learning Management

Teachers and educational personnel study the educational curriculum to support the climate change in schools in Nakhon Ratchasima city through various learning methods and summarize the content by synthesizing or mind-mapping focusing on self-learning and questions and answers session at the end of each unit. If the learner cannot find the right answer, they are advised to go back and re-study the content in the unit. Learners should keep up to date with the news and the situation of the ongoing global Coronavirus-2019 epidemic.

Measurement and evaluation

- The ability to answer questions at the end of the unit.
- The ability to apply the knowledge gained for the curriculum in real-world situations.

C. Phase 3

The results of the evaluation of the education curriculum to support climate change in schools in Nakhon Ratchasima city in terms of appropriateness, feasibility and utility are presented in Table 2 and suggestions for curriculum improvement from seven experts are as follow:

"…the overall curriculum is good. Add an assessment tool on page 13, namely an observation form. Adjust the qualification criteria following the moral assessment on page 17, for example, 3 points are 100%, 2 points is 67%, 1 point is 33%. The satisfaction assessment form for activity participation in "Knowledge of Coronavirus Disease-2019" on page 18 should have an assessment criterion. The exam is done well. The workload/piece in Unit 2, page 41 does not correlate with the criteria on page 41. The attributes assessment may add more attributes, such as group responsibility, assistance, creating a working atmosphere…"

Expert 1

"...the curriculum is in accordance with the current problems and needs of society. It is appropriate for the current situation as school administers are looking for more ways for children to assess this curriculum. Word usage in the curriculum is appropriate for the learner's age and daily life, content is detailed and can be truly used in the child's everyday life. Paragraph 2 of Page 2 and Paragraph 5 are the same content and should be in the same paragraph. The third learning objective should have more details on what the topic is about, should add more content on page 24 and items 1 and 2 should be switched on page 38…"

Expert 2

"...I appreciate your perseverance in developing this curriculum. The content should be adjusted according to the current situation. The content should cover knowledge of the disease, causes, symptoms, and treatment according to symptoms. Details on item 6 should be updated. Item 8 on page 15 should be eliminated and spelling errors are found. The introduction step on page 38 should be adjusted to the likelihood of infection and severity. Review items 4-9 on page 40 to have all the 7 handwashing procedures. Worksheet relates to activity on page 42…"

Expert 3

"...for the background/concept of the curriculum, it should begin with addressing the physical, social, economic situations or impact, disease control policies, indicators/activities, and activities leading to the policy must be clear and use KPIs. Should add content about 1) outbreak 2) physical, social, economic, opportunity impact 3) causes 4) activities (what to do before and after the disease) 5) measures. Use the word 'attitude' for unit 3 because the word 'habit' is abstract. Schools should be a learning center for cultivating attitudes…"

Expert 4

"...there should be a pre- and post-test using the same examination paper. Attitude will take a long time to cultivate, therefore, the design of the learning activities in this unit should be timely adjusted to cultivate attitudes. Objectives should be set to reflect attitude. The assessment criteria should be consistent with the worksheet. There should be a link between learning objectives. What are the measurement and evaluation tools? For example, what methods are used to assess and evaluate problem solving skills. Satisfaction assessment may appear in any objective…"

Expert 5

"...I appreciate the research team. It can be seen that the curriculum has three dimensions: objectives, activities, and measurement and evaluation. The Priority Needs Index (PNI) is calculated according to the assessment structure, thus, item 2 on skills and item 3 on attitudes takes time so this should be adjusted accordingly. The worksheet on page 76 should be adjusted to reflect feelings or prevention. The rubric threshold should be adjusted or add criterions on page 41. …"

Expert 6

"...the research team had done well on publishing and printing. Adjustments should be made about the principles and rationale. The learning objectives on page 9 should be adjusted. What does the word "dong-ra-bad" on page 24 mean? Is it possible to use another term? The learning objectives on page 73 are missing content for item 1 and 3…"

Expert 7

TABLE II. ASSESSMENT OF THE EDUCATIONAL CURRICULUM

Curriculum Component	Appropriateness			Feasibility			Utility		
	M	SD	Level	M	SD	Level	M	SD	Level
Curriculum Principles and Rationale	4.85	0.37	Highest	4.85	0.37	Highest	4.85	0.37	Highest
Objectives	4.85	0.37	Highest	4.85	0.37	Highest	4.85	0.37	Highest
Content	4.76	0.41	Highest	4.85	0.37	Highest	5.00	0.00	Highest
Learning Management	4.71	0.48	Highest	4.57	0.53	Highest	4.71	0.48	Highest
Measurement and Evaluation	4.71	0.48	Highest	4.71	0.48	Highest	4.71	0.48	Highest
Overview	4.77	0.29	Highest	4.79	0.32	Highest	4.87	0.20	Highest

Table II. shows the assessment of the educational curriculum to support climate change in Schools in Nakhon Ratchasima city which the appropriateness overall, was at the highest level (M̄=4.77, SD=0.29), the feasibility was at the highest level (M=4.79, SD=0.32) and the utility was also overall at the highest level (M=4.87, SD=0.20).

V. V. DISSCUSSION

A. Results of the Fundamental Data Study in the Process of Developing an Educational Curriculum to Support Climate Change of Schools in Nakhon Ratchasima City

The teacher's Priority Needs Index (PNI) on climate change in the incidence of COVID-19 found that the knowledge and skills were the highest priority needed (PNI = 0.12, and 0,11) accordingly. This may be due to climate change for many reasons. Most are caused by human actions causing the global temperature to rise. Weather variability also causes the spread of pathogens which can also lead to the increase of deaths, [7] had a similar view and stated that climate change is both directly and indirectly influenced by human activities which affects public health problem, impairment of work efficiency, and increase the tendency of illnesses, injuries, and deaths [1]. Therefore, teachers and educational personnel have priority needs (PNI) towards climate change in the incidence of Coronavirus-2019 in the field of knowledge and skills which is consistent with [18]

participatory action research on the study of patterns of surveillance and participatory epidemic management of Ban Thamhim Temporary Shelter Center, Suan Phueng District, Rachaburi Province. The study found that the incidence of communicable diseases would decrease if there were academic support for leaders and ad hoc workers to have knowledge and skills in surveillance and epidemic management. The results of the research suggested that a central guideline for implementation of disease surveillance should be established and there should be management of participation for epidemics in temporary shelters in Thailand so that each center can apply the guidelines to their context.

Further analysis showed that item 9, knowledge on 14-day quarantine procedures in the case of staying with family or sharing living space with others is the most priority needed index (PNI = 0.16). The typical incubation period of COVID-19 is 14 days, but also between 0 to 24 days. 50% of the general population had a 3-day incubation period. Only 14 out of 1,099 cases, or 1.27 percent, had an incubation period of 15-24 days, and only one case had an incubation period of 24 days, consistent with the [19] which specified that 98% or more patients will have symptoms within 14 days and most will have symptoms between 3-7 days, so limiting suspected locations of infection with self-quarantine usually takes 14 days. Suspected cases within day 1-14 of the incubation period are admitted into a hospital or placed in the care of the Ministry or medical personnel assigned.

It is also shown that item 15, changing clothes and bathing immediately after work and when entering the house has the most priority needed index (PNI = 0.22). The reason may be the fact that physical cleansing can be performed immediately by changing into new clothes, never approach or come into contact with the elderly or children, the sleeping area should be separated from others as much as possible, and keep windows open for better ventilation agreeing with [20] concept stating that the infection can be transmitted through droplet transmission such as mucus, saliva, aerosols from coughing and sneezing within 1-1.5 meters. If an unhealthy person is infected, including the elderly, they are more likely to die than the general population, therefore, changing clothes and bathing immediately after work and entering the house is the first thing that should be done. These results agree with [21] report that those returning from Bangkok Metropolitan Region should separate themselves from others to observe symptoms for at least 14 days and when returning home should shower, wash hair and thoroughly clean the body, and never approach or come into contact with the elderly or children by keeping a distance of at least two meters.

The results of the study also found that item 39, making contributions to the Complaint Center of Mental Health or observe mental crisis or mental crisis hotline was the highest in the priority needs index (PNI = 0.18). This may be because there is yet to be a standardized drug that is effective enough for Coronavirus-2019 as the current drug used is only an experimental drug. Doctors expect to have a vaccine that is tested and approved for general use as early

as 2021, and the general public does not have much knowledge to deal with the crisis. Therefore, being a contributor for Complaint Center of Mental Health or observe mental crisis or mental crisis hotline is the highest priority item in the index. This result further supports the [19] about the criteria and notification in case of dangerous communicable disease, communicable disease under surveillance and communicable disease occurring in 2017. In the event of a dangerous communicable disease or suspicion of occurrence and a suspected case of dangerous communicable disease, the Communicable Disease Control Officer should be notified immediately either with the Communicable Disease Control Officer who is a government official under the Department of Disease Control or the Communicable Disease Control Officer in the area where there is a suspected case of dangerous communicable disease within three hours. On the other hand, lost public trust in the medical profession may have fatal consequences on the containment of an infectious disease outbreak like COVID-19 [22] because the public may no longer fully trust health workers for assistance and guidance [23].

B. Results of Developing an Educational Curriculum to Support Climate Change of Schools in Nakhon Ratchasima City

The research team developed an educational curriculum to support climate change in schools in Nakhon Ratchasima city which consisted of 5 components: 1) Principle and rationale, 2) Objectives, 3) Content; Unit 1 Knowledge of Coronavirus Disease – 2019; Unit 2 Corona Infectious Disease Prevention and Surveillance – 2019; Unit 3 Learning in the Post-Coronavirus World – 2019, 4) Learning Management, and 5) Measurement and Evaluation. This resulted from the experience in curriculum which is designed and created as an alternative to provide learning experiences that tailor the needs and nature of the learner which an emphasis on developing the learning potential of the learners in a particular field which has more depth and variety than a regular course so that learners possess desirable qualities. In addition, learners will make great use of free time to benefit themselves, the community, the society, and the nation. Learners can use this knowledge to improve the learning and experience of learners through a variety of methods and content [13].

Principles and Rationale of the Curriculum reflects the change in environment and climate that causes the world to lose its balance in every aspect. When COVID-19 epidemic became a crisis, the best foundation and strongest defense against it is discipline and learning which educational institutes play a vital role in making this happen. Having the right knowledge, skills and attitude will help cope with this crisis. Factors contributing to the transmission of pathogens can vary and includes weather, temperature, and environmental [2]. Knowledge of these factors will help cope with potential critical situations because this is something that people around the world are worried about, combined with accessible and convenient and quick transportation between continents make the spread of pathogens occur easily. Furthermore, an educational model

for the community could be developed with a focus on strengthening an individual's locus of control, health motivation, and increasing the knowledge of the COVID-19-like symptoms [24].

Curriculum Objectives reflect the commitment to educating teachers and educational personnel to have the understanding and skills to protect and care for themselves and people who they are in close contact with to be safe from the Coronavirus-2019 epidemic and also have the right attitude. This is because teachers and educational personnel are the people closest to the learners, secondary to the learners' parents. Teachers and educational personnel are recognized as one of the first factions to combat this crisis together. No matter how bad or sever the surrounding is, but the quality of all Thai children is the ultimate goal. Even though schools may be closed, but learning needs to be carried on [25]. Preparation of face masks help build strong teams of teachers and promote and support self-protection against diseases [26].

Content reflects a crucial need for ways to remain safe during the spread of the Coronavirus-19 epidemic. The primary role of teachers and educational personnel is to teach and promote the learning of learners', therefore, teachers must provide students with content that students can use to reduce risks in their daily lives. The Ministry of Education has a policy for all departments in the Ministry of education to adjust the 2020 fiscal year budget to assist the unemployed to be able to work in government offices, schools, educational offices, etc. [27].

Learning Management focuses on self-learning, self-control, and continuous global news monitoring. People from around the world are now taking precautions to protect themselves, their families and communities from the Coronavirus-2019, sharing accurate information will reduce students' fears and worries which agrees with Unicef's concept that teachers must have techniques to communicate with students of different ages about the prevention and surveillance of the Coronavirus epidemic. The suitable management of learning climate caused the students to demonstrate innovative behavior both directly through climate for learning, and indirectly through their interest in the assignments. The cognitive flexibility of the thinking process also enabled work behaviors that were more innovation driven [28].

Measurement and Evaluation is considered by the ability to answer questions at the end of the unit and the ability to apply the knowledge gained from the course in real-world situations. This course has the answers that Thai people need. Since the Coronavirus-2019 outbreak, all sectors have mobilized their opinions and proposed concrete measures appropriate to the areas affected. There has been national assistance and cooperation all over the country [29]. However, the impact is mainly for families with economic instability [30] to help the vulnerable or disadvantaged groups to return to their normal lives and to build strength from the foundation of the community [31].

C. Assessment of Appropriateness, Feasibility, and Utility of the Educational Curriculum to Support Climate Change in Schools in Nakhon Ratchasima City

The overall and individual assessment results were at the highest level. The research team used findings from phase 1 and phase 2 to create a curriculum of study that is consistent with the current situation. In addition, the recommendation from experts who attended the lecture were taken to adjust and made the curriculum possible, so the educational curriculum evaluation was at the highest level which is consistent with the principles of the [32] that proposed that one of the aims of curriculum evaluation is to find ways to improve and fix defects in various parts of the assessment. The evaluation of this nature must answer the question of how the course help learners achieve the course objectives and the efficiency of the course [32] in order to improve the curriculum to be more appropriate [33]. The Joint Committee on Standards for Educational Evaluation [34] proposed assessment principles to normalize the performance audit activities into four categories: 1) feasibility standards, 2) utility standards, 3) propriety standards, and 4) accuracy standards. Effective curriculum evaluation leads to quality teaching and learning.

Data is collected by a moderator who takes notes in the discussions with contributors on specific issues which are selected from the target audience. The moderator will influence groups of ideas and express opinions on issues or guidelines for discussion in a broad and detailed manner. This allows the researchers to perceive opinions, attitudes, feelings, perceptions, beliefs, and especially vague or indeterminate answers to the survey findings to further complete the research. The researchers have adjusted according to the advice of experts. For this reason, the results of the assessment of the educational curriculum to support climate change in schools in Nakhon Ratchasima city in terms of appropriateness, feasibility, and benefits overall, is at the highest level in all of the mentioned aspects.

VI. IMPLICATIONS

The need for knowledge of the procedure for cases that need 14-day quarantine, in case of living with family or sharing with others has the most necessary priority index (PNI = 0.16). The need for changing clothes and bathing immediately after work upon entering the house has the most necessary priority index (PNI = 0.22). The need to be a contributor for the Complaint Center, a Mental Health Center, or Helpline has the most necessary priority index (PNI = 0.18). Social measures should be discussed and established during the restoration and development of the quality of life. A community database system should be developed (resource base for consumers) household and community food security and (Young smart farmers development /Community market development/Local marketing/Transport logistics system development). The educational curriculum of schools in Nakhon Ratchasima should be disseminated and used in educational institutes or other organizations as appropriate which may be adjusted according to the age of the learner. The educational

curriculum should be developed for dealing with other epidemics and emerging diseases. A model for managing mental health problems in the community and the care of community members who are inaccessible to state services on the Coronavirus-19 epidemic should be developed. Patterns of encouragement for communities to jointly design future community measures to restore the quality of life of people affected by the Coronavirus-2019 epidemic should be studied.

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