

## CHAPTER 5

### Conclusion, Discussion, and Recommendations

This study regards research and development. There were three purposes of this study: The objectives of this research were 1) to study the context and needs assessment to develop teaching provision competency of physical education teachers to promote health for primary students, 2) to construct and quality improvement of the development model, and 3) to implement and study the effectiveness of the model. The research was divided into three steps.

**The first step** was for studying the context and assessing the needs for the development. The samples were divided into two groups. The first group: 321 physical education teacher in primary schools under the Office of Basic Education in 8 Northern Province in Thailand, selected through proportional stratified random sampling technique. This samples were studied for the context and needs assessment. The second group: for group discussions, they were 8 physical education teachers who were qualified as a professional that can review performance, give academic learning, health and physical education discussion or a person who has taught physical education at least five years. Research instruments included a questionnaire and record to find the context and needs assessment for developing teaching provision competency of physical education teachers to promote health for primary students. The data were analyzed in terms of frequency, percentage, mean, standard deviation, modified priority need index and content analysis.

**The second step** was to construct and quality improvement of the model by using the priority of the needs and results of the synthesis of the concepts and theories to construct the model whose quality was evaluated by 8 experts. The data were analyzed in terms of mean, standard deviation, and content analysis.

**The third step** was to implement and study the effects of using the model. The sample were divided into two groups. The first group: included 23 primary physical education teachers who volunteered to participate in the project. The instruments included forms to evaluate the physical education teacher's teaching competency and the data were analyzed in terms of frequency, percentage, mean, standard deviation and

test significance by Wilcoxon Sign Rank Test. The second group: included 289 students. The instruments included 3 questionnaires for physical health, mental health and social health and 2 tests for intellectual health. The data were analyzed in terms of frequency, percentage, mean, standard deviation, and content analysis.

## **5.1 Research conclusion**

The conclusion of a result can be reported as follows.

### **5.1.1 A result of studying context**

1) A study found that 2,641 persons answered questionnaires. Most participants were female, 1810 persons (68.53%). Male participants were 831 persons (31.47%). However, most of physical education teachers was male, 236 persons (66.86%). Only 127 schools (44.70%) had enough number of physical education teachers, while 157 schools (55.30%) did not have enough number of physical education teachers. Most schools, 197 schools (69.40%), did not have physical education teachers with the physical education degree. Yet, a significant amount number of schools at 277 schools (97.50%) had a policy for promoting physical education activities. 236 schools (83.10%) had a policy for promoting physical education teachers' development while 48 schools (16.90%) did not have it.

2) An analysis result about students' general information found that there were 27,707 students. Majority number of students is male, 14,103 students (50.90%). A total number of classrooms were 1,613 classrooms. There were students in a special needs education class 296 students (5.27%). There were students with weight exceed a standard 1,401 students (5.06%), students with weight lower than a standard 1,728 students (6.24%), and students with lower than physical fitness level standard 1,271 students (4.59%). Number of students who did not like exercising was 360 students (1.30%). Students with negative attitude toward exercising and playing sports were 203 students (0.73%). Students who did not pass a literacy assessment were 764 students (2.48%).

3) An analysis result about general information of physical education teachers in elementary school found that physical education teachers generally were male, 220 persons (77.50%). Their average age was 46 years old. Large amount number of participants had a bachelor degree, 232 persons (81.70%). Most of participants were

permanent civil servant, 229 persons (80.60%). Most of them was in a professional level, 123 persons (43.30%). 136 persons (47.90%) has taught physical education for 15 years consecutively. A large number of physical education teachers at 89.10%, 253 persons, taught elementary students in various grades. In average of teaching hours in physical education subject were 6.2 hours/week. Mostly, physical education teachers had teaching responsibilities to teach many subjects, 257 persons (90.50%). Only 27 persons (9.50%) taught only physical education. Moreover, the result found that at the highest 73.20%, 208 physical education teachers had other responsibility to handle above their teaching responsibilities which was students' affairs.

#### **5.1.2 A result of studying needs to develop in teaching provision competency of physical education teachers to promote health for primary students**

The needs to develop the competencies of teaching health and physical education for primary students. This was to promote primary school students' health in 5 aspects as following: (1) an analysis on general condition, which the maximum of index of needs was 0.34. When each list of aspect was considered, the result found that the first priority an example group of physical education teachers need was a development in the aspects of analysis on location, media, education aids in teaching physical education for better physical health which had an index of needs making in order at 0.38 while an analysis on local community supports and parents toward to teaching physical education for better physical health was at 0.37 and an analysis on policy of promoting and enhancing on teaching physical education for better physical health was at 0.34, respectively. (2) implementing teaching and learning plan, The index needs was 0.24 which mainly a needed a development in an analysis of general context to apply in teaching and learning plan for the first priority. which had an index of needs making in order at the highest 0.31. At the same time, identifying a benchmark for measurement and evaluation according to content and learning purposes was at 0.27 and choosing appropriate measurement tools according to content and learning purposes was at 0.25, respectively. (3) Teaching, which its index of needs was 0.20, it was found that the need for development on facilitating students to analyze, synthesize, solve problem, and thinking creatively came up first with priority need index of 0.29, followed by training the students to conclude knowledge by themselves (0.28) and opening opportunity for

students to express opinion and recommendation on their own works (0.25). (4) Learner Assessment Aspect, The maximum of index needs was 0.27, it was found that the need for development on effectively constructing and checking the quality of the instruction had the highest priority needs index (0.32) followed by the need for development on correctly using the measurement results to analyze the instrument (0.31) and recording the student's work in an easily understandable way (0.29). and (5) reflecting on the instruction aspect which the maximum of index of needs was 0.27. it was found that sampled physical education teachers wanted to be developed on the ability to clearly express ideas and feeling on student assessment for the first one with the highest priority needs index (0.292). Next one was the ability to clearly analyze and evaluate the situations occurring during the instruction (0.291), and Ability to clearly express ideas and feeling concerning instructional implementation (0.286).

There were 5 steps by the needs to develop the competencies of teaching. Firstly, Paradigm shifting by seminar and workshop. Second step developing knowledge onto the instructional plans through the workshop. Third step companionable supervision. Fourthly, it was a reflection of work by creating a workshop and activity to study and exchange knowledge. Step 5 was learning management that used to create a teachers networking.

### **5.1.3 A Results of the Study on the Needs for Developing Instructional Competency of Physical Education Teachers via Focus Group Discussion**

As the result from focus group among 8 physical education teachers about the needs for developing their teaching, it can be concluded as the following three issues.

#### **Issue 1: Present Condition of instructional provision of Physical Education Teachers**

**In the part of understanding the purpose of teaching physical education,** physical education teachers generally understood very well that they have to provide students the activity that contains a lot of movements, exercise, games, and sports as it was a tool to develop students' physical, mental, emotional, social, intellectual, physical fitness, and health and sports efficiency. However, this issue was based on several factors such as context of education, the ability and aptitude of the

teacher, existing equipment, management policy, the understanding and support of the local administration and the community, parents, and students as well.

**In the part of teaching behavior,** it was found that the physical education teachers who were in middle-aged taught quite well. They have got a lot of experiences and knowledge to prepare a productive and useful class for their students. In the opposite way, the physical education teachers being younger and new generation did not focus on teaching at all. It was found that the teaching given depend on teachers' aptitude which was called a teacher-centered teaching, not child-centered.

**In the part of students' measurement and evaluation,** it was found that physical education teachers should be developed more in this field. Many of them made only observation without any concrete tools to help evaluate their students' skills. Focusing on the problems in teaching, they got overload work, as well as their behavior and techniques used were old-traditional. Besides, it showed that the schools lacked of support, budget, policy, and teaching materials.

**Issue 2: 5 reviews resulted from the study reviews and suggestions to improve the teaching performance as follows.**

**General conditions analysis:** should be firstly developed and improved. Schools or places should be well prepared and increase the availability of space. Physical education teachers should study and focus education policy and management clearly. Meanwhile, they have to pay more attention to their students in order to get the potential and interests of the students and community.

**Implementing Teaching and Learning Plan:** the most important point was teaching techniques which had to be proper and interesting.

**Teaching:** good teachers have to create an atmosphere that promotes interested learning for the students. The tutorials should be given step- by-step with proper information and place. The students are allowed to choose activities they like interest and aptitude. They can freely ask questions and give suggestions while teachers helped them to analyze and find out the solution together. Besides, teachers should give students various kinds of activity to promote sportsmanship, unity, respect, and human behaviors.

**Learner Assessment:** was regarded as the important part, but also the weakness of physical education teachers. Teachers should be well trained and give students an opportunity to participate the evaluation and share their comment.

**Reflection on the Instruction:** The physical education teachers individually gather their own works, then analyze and evaluate their teaching by themselves. In the other hands, the teachers should advise and share knowledge and techniques to each other.

**Issue 3: Appropriate and Feasible Guidelines for Teaching Competency Development.** The focus group had opinion congruent with the need priority for developing every physical education teacher's teaching provision competency. The priority started from the general condition analysis, followed by reflection on the instruction, learner assessment, Instructional provision planning, and Instruction implementation, respectively. The focus group's collective opinions concerning this had come up with 5 competencies as follows:

Competency 1 – General condition analysis - The process could be done through training, seminar, learning exchange, and supervision and follow-up. The conditions for the success were the eager to learn on part of the physical education teachers and moral supports on teacher development of the concerned agencies.

Competency 2 - Instructional provision planning - The appropriate guideline for developing this competency suggested that the teachers should learn this through the experience of knowledgeable persons or model teacher. The teachers could also learn through the idea mobilizing sessions such as seminar or working on the issue.

Competency 3 – Implementing the instruction – The competency should be developed through various methods including classroom visit and peer-assisted learning process.

Competency 4 – Learner assessment – To acquire this competency, the teacher had to start with studying documents such as handbooks in side which had example. The development process should construct the handbooks for the teachers to study and set up the forums for learning exchange on continuous basis. Physical education teacher network for this purpose should be set led by teachers with academic ranks to encourage and support the physical education teachers to learn and develop themselves.

Competency 5 – Reflection on the instruction – This competency could be developed through informal supervision, companionable supervision, reflection from the learners all of which could be used for teacher development.

#### **5.1.4 Results of the Construction and Quality Improvement for A Physical Education Teacher's Teaching Provision Competency Development Model for Primary Student's Health Promotion**

From the need priority index the opinion of physical education teachers and the focus group discussion, it was found that physical education teachers had the needs for developing their competency on 5 aspects are General condition analysis, Instructional provision planning, Implementing the instruction, Learner assessment, and Reflection on the instruction. The researcher had synthesized the empirical results with the results of literature reviews on concepts and theories to design and develop the model for the competency development. The focus group served as the space in which members learned together through mutual analysis and reflection and whatever happening in the constructive atmosphere. From synthesizing all these related researches and literature, the model for developing instructional provision competency of physical education teachers to promote primary student's health was developed with the goals, principles, process, and evaluation on the development. The model was composed of 3 components whose details are as follows:

**Component 1 – Development Direction** – This was guideline for operating the development process to be used by the developer to carry out the development. This component was composed of the following subcomponents, namely: 1) Development goals, and 2) Development principle.

**Component 2 - Development Process** – This was the step of development to set up the objectives, contents, methods, media/learning resources, and roles of the developers. There were 3 procedural steps, namely, Step 1 - Paradigm Shift & Study onto Lesson Plan, Step 2 - Approach to the fieldwork & Mentoring, and Step 3 – Sharing the lesson learned.

**Component 3 – Assessment of the Development** – There were 2 types of assessment as follows:

**1) Assessing along the development goals** – This was the assessment before and after the development on 5 aspects of physical education teacher's teaching provision competency: General condition analysis, Setting up learning provision plans, Implementing the instruction, Learner assessment, and Reflection on the instruction. It also included the assessment on the student's health in 4 aspects, namely, Physical health – their moving behavior, physical exercise, and sports playing; Mental health – feeling and opinions of students on body movement, physical exercise, and sports playing; Social health – feeling and opinion of the students on classmates, family members, and surrounding people, and; Intellectual health – the ability to carry out analytical thinking, synthetic thinking, problem solving thinking, and creative thinking of the students.

**2) Assessing along the development objectives** – It was the assessment along objectives having been set at each step of the development process as follows:

2.1 Step 1 – Paradigm shift and study onto the plans – The step was aimed at building up the awareness of the teachers to be developed to realize the significance of physical education studying for solving health problem, and roles and significance of physical activities for health promotion by providing knowledge and understanding on the principle of physical education learning provision to promote health using brain-based learning principle as well as the ability to appropriately set up the learning provision plans for physical education to promote health and could practice to correctly check on the student's physical fitness.

2.2 Step 2 – Approach the fieldwork and mentoring – This step was aimed at studying on planning and providing physical education instruction for health promotion using brain-based learning approach on part of the teachers having been developed and to get supports, assistance, mentoring, and guidance on physical education instructional provision for health promotion using brain-based learning principle.

2.3 Step 3 – Sharing the lesson learned – This step was objectives to facilitate the teacher being developed to exchange learning and experiences from physical education instructional provision for health promotion using brain-based learning principle, conclude the knowledge gained from the process of developing competency on carrying out the physical education instruction for student's



health promotion and the presentation of the works done by the teachers having been developed.

Afterward, the researcher had created a handbook on using the model of developing physical education teacher's teaching provision competency to promote primary student's health, and validated by 8 experts its quality in 4 aspects, namely, feasibility, appropriateness, correctness and sufficiency, and usefulness. Results of 8 expert's validation were found that the feasibility, appropriateness, correctness and sufficiency, and usefulness were at a high level with an average of 4.38, 4.48, 4.34, 4.50, respectively, and by over all of the high level with an average of 4.42.

#### **5.1.5 Results of the Study on Effectiveness of A Physical Education Teacher's Teaching Provision Competency Development Model for Primary Student's Health Promotion**

1) The effectiveness of a physical education teacher's teaching provision competency development model for primary student's health promotion was found that had overall teaching provision competency before using the model at moderate level with 3.41 mean and after using at much level with 4.32 mean showing higher trend. When significance test on the difference was applied by Wilcoxon Sign Rank Test, it was found that the teaching provision competency of the teachers was higher than before taking part in the program at 0.01 statistical significance level.

2) The effect on student's health after using the development model on 4 aspects of health, namely, physical health, mental health, social health, and intellectual health are as follows:

**Physical Health** – This health included 3 sub-behaviors moving, physical exercise, and sports playing of the students, the students had at a very good level (do it more than 5 days per week) from 38% to 47%, at good level (do it 3-5 days per week) from 25% to 26%, and at fair level from 22% to 19%. For those who never do it, number of students decreased from 15% to 8%. It could be concluded that 73% of the students had health behavior at good and up level.

**Mental Health** – This type of health was the feeling or ideas of the students on body moving, physical exercise, and sports playing, it was found that students had agreed with the positive statement at much level increasing from 57% to 74% and agreed with the negative statement at much level decreasing from 18% to 13%.

Social Health – This type of health was the feeling or opinion of students toward friend, family members, and surrounding people reveals the better trend of student's opinion after using the model. They agreed with the positive statements at much level increasing from 30% to 76%, and agreed with the negative statements decreasing from 18 % to 10%.

Intellectual Health – This type of health was the student's competency on analytical thinking, synthetic thinking, problem solving thinking, and creative thinking. the students had competency after using the development model along the better trend than before using the model. After using it, the students had competency at good and up levels from 37% to be 98% and only 2% who could not pass the good level.

3) The quality of the model covered feasibility, appropriateness, validity and sufficiency, usefulness, satisfaction with participation in the development program as rated by the sampled physical education teachers at most level for all the aspects with the average mean of 4.59 and standard deviation of 0.56. The problems, obstacles, and recommendations for the development are follows:

3.1) School administrators should participate in the development as it is useful for all the concerned sides to utilize the physical education moving activities.

3.2) Time for performing the activities was to minimal and not sufficient. The development activities should be organized for the whole semester to assure the clear impact. Some schools had limited number of teachers some whom had been burdened by a lot of task and could not participate in every activity. Materials and supplies were not on readiness and insufficient. There should be supports from outside as the school's budget was limited.

3.3) The application of the knowledge and experiences gained from the development had not been fully done.

3.4) Some students had overweight because of too much eating without physical exercise. There should be the physical fitness test to make the student informed about his or her fitness to stimulate him or her toward more body movement and physical exercise and be trained on problem solving thinking.

## **5.2 Discussion of research findings**

The researcher discussed the research findings according to the objectives as follows.

### **5.2.1 The study contexts of teaching physical of the physical education teachers**

The research found that most schools did not have enough physical education teachers. The majority of teachers in those schools were experienced teaching physical more than 15 years but they were not actual physical education teachers. Some of them were the school's director, janitor, and the class teacher. From the Saard Pothaya's research (1998), it was found that a very little amount of physical education teachers caused a class teacher had to teach all subjects including physical even if they had never been trained. In Agreement of Ayawat Rasameechan's research (2008), it showed that other subject teachers such as mathematic, drawing, and languages, had to teach physical, too. School should provide more physical education teachers. From the research of Suwicha, Pathumporn (2002), it claimed that to provide the teachers who did not directly graduate a physical education was a huge problem as they lacked of physical knowledge, and experience. They also could not transfer a right knowledge to their students which caused obstacles in the learning process. From the result of the conference on September 16, 2014 between the Minister of Education and the Minister of Tourism and Sports, it was approved to revise the core curriculum for basic education in 2008. Every school had to provide Physical education and Sport at least 120 minutes per week. Children should exercise for at least two hours a week.

### **5.2.2 The study of physical education teachers' need towards the performance's development model**

1) Regarding to the research, the teachers were willing to develop and improve their performances in every part, in agreement with Kijkeukool, Sirinpa (2010) which stated that it was necessary to survey the teachers' need first. After the survey, the research found that physical education teachers needed to develop their performance as they wanted to improve in the field of general analyzing as the first part (PNI = 0.34), followed by an evaluation (PNI = 0.27), the reflect and the feedbacks of teaching (PNI = 0.27), preparation of lesson plans (PNI = 0.24) and teaching (PNI = 0.20). Corresponding to the curriculum learning in class of Wongyai, Wichai (2012), which

said that teachers needed to analyze the students, learning standards and prepare the lesson plans. Moreover, the researcher found that the teachers' need towards their performance's development model was linked to the 2 development models of the Office Basic Education Commission (2010) which the first one was called 5 Core Competencies including operational achievement, good service, personal development, team work, and professional ethics and teacher. The second one was called 6 Functional Competencies, which included program and teaching management, the development of learners, class management, analysis and synthesis to develop students, teachers and leaders, and relationships and partnerships with the community. Teaching management and development was also one of the nine competencies of teachers' desirable learning, health and physical education in the period of 2011-2021. Physical education teachers should have well knowledge and be well planned in order to suit and reaches the purpose. They knew how to provide students with a practice in health care, how to use learning technology appropriately, and how to use knowledge of activities to achieve the objectives highlighted by the learners. Besides, teachers' could adapt the use of local knowledge and ability to select or create the learning of the students which results the learning process improvement continuously. (Wittayaphat Sawang, 2004; Khuna-apisit Wassana, 2006; Taesoongnoen Anuchit, 2011)

The study found that most schools did not provided physical education teachers enough. Thus, most of class teachers had to teach physical and sport, too. However, it was found that most schools have policies to promote the development of physical education teachers and physical education activities. It is one of the factors that caused the teachers to develop competencies of teaching. The foregoing shows that the researcher had conducted a study to analyze and determine the performance of the teaching of physical education teachers properly and according to the needs of physical education teachers in eight Northern provinces on experience.

2) The study how to develop the competencies of teaching physical education in this time, it was found that the survey forms to the development of physical education teachers in eight Northern provinces were consistent with the results of physical education teachers' group discussion. They referred beginning with educating, then planning, training, making use of training practicing and learning with qualified

specialist, teaching how to visit the classroom supervision, giving lessons learned by the learning activities, and creating a network of teachers.

### **5.2.3 The result of teaching development models for physical education teachers in order to promote primary students' health.**

The researcher synthesized information from the theory of human resource development, Teacher Professional Development Organization of teaching physical education and health promotion for students combined with the results of the study needs to develop learning, and teaching of physical education teachers in 8 Northern provinces to get a quality development model as possible which were Possibility, Appropriateness, Correctness and Sufficiency, and Usefulness. From all mentioned factors above, the researcher found the components that create development model as follows. **The first component** – This was guideline for operating the development process to be used by the developer to carry out the development included development goals and development principle. **The second component - Development Process** – This was the step of development to set up the objectives, contents, methods, media/learning resources, and roles of the developers. There were 3 procedural steps, namely, Step 1 - Paradigm Shift & Study onto Lesson Plan, Step 2 - Approach to the fieldwork & Mentoring, and Step 3 – Sharing the lesson learned. **The third component – Assessment of the Development** – There were 2 types of assessment, assessing along the development goals and assessing along the development objectives. This is consistent with the research of Pleankham, Sakonwan (2007) which found that the development model of health and physical education teachers consist of 3 elements. The first element consists of the development concept that is the focus of development. It was the start of a direction in policy development and implementation and aim to developing qualified teachers to meet the group. Consistent with the nature of learning, health and physical education also determines the direction of development effectively. The second element was the development process including knowledge used in development, ways how to develop both inside and outside schools, learning activities, individually and in groups, development Process Media, and the agency responsible for the development. The third element was the evaluation and monitoring developments. It was the evaluation of the performance of teachers and the students. To demonstrate that

the development model was very effective or not, the researcher found the discussions on the following elements.

The development consisted of principles and purpose for development. The researchers used developed model based on the concept of companionable development proposed by Amornvivat, Sumon (2004) 1) the heart is faith, trust and acceptance for development 2) Being sincere and efforts is to work as a team. Sincere was driving the development of the desirable goal. 3) The intention which was to have perseverance painstaking efforts in development. 4) Opening up mind to listen to the opinions of others. It was linked to the 7 Participations of Hord, et al. (1987) which consisted; 1) the recognition that teachers were aware of the changes in the new approach to be used, 2) the teacher became interested in new innovations and information, 3) to build the values. Teachers became aware of the importance of innovation and the need to bring new innovations, 4) to organization which meant teachers are committed to use innovations in order to change coaching the behavior, 5) empirical evaluation which teachers had a good attention to the result from innovation and assesses learners to get information, 6) network was the way to exchange and share experiences and publish their work, also commenting about alternatives and making recommendations appropriately to others, 7) creativity was a step that teacher had joy and confidence in their abilities that can change the behavior of teaching. They were happy to learn new concepts and disseminate innovative experiences of their discovery. Besides, the researcher took the basic concept of teacher development to the professionalism of Sparks and Louks – Horley principles used to develop the model. It is developed on a voluntary basis. It is believed that the teachers will learn most effectively when teachers want to learn, recognize and resolve problems. Moreover, the researcher choose the principles of mentoring proposed by Ibarra (2008), focused on providing mentoring for each individual developing subject and small group of them to follow up and to assure the instructional provision achieve the set goals.

The second component was the development process. It was regarded as the heart of development. The researchers developed theoretical principles and needs to define a three-stage process. Step 1 was paradigm shift Plans, Step 2 was consulting and field work, and Step 3 was lessons learned by each stage of content development objectives. It was found that the development was appropriate. The aim to develop was in a good

level (4.63), the accuracy and adequacy in a very good level (4.75) and the development stage was accurate and met the aim of developing at very good level (4.75). This may come from the way that the researcher applied the Human Resources Development of Swanson (2001) "Cognitive Psychology" which claimed that learning is associated with the person's understanding. A person recognized what motivates him. And as a result of individuals' experience. Thus, it created a stimulating learning and led to improve performance. Together with using the principle of sense of participation by Hord, et al. (1987), which led to practical methods developed in Step 1 Paradigm shift and study onto the plans. The concepts taught physical education to health using the principles of brain-based learning by emphasizing physical education awareness and the importance of education for health students rather than focusing on sports and competition.

As the results from teachers' workshop, the first step was a presentation by using 3 videos for physical education including the Let's Go Hunting, Triangle Tag, and Activity Movement. These videos were about teaching to enhance movement skills in primary students. After the workshop, it was found that the physical education teachers got the higher score about 91% than the previous measurement paradigm for development. They had knowledge to plan and teach it and knew how to provide physical education. The teachers can plan the curriculum for physical education and health by learning principles of the brain (Brain-Based Learning) correctly. Also, the researcher provided physical education teachers the workshop by inviting experts and lecturers who had experience in teaching physical education at the base of the brain based learning in order to give knowledge, suggestions, and samples. Physical education teachers were designed to practice and create lesson plans in accordance with the responsible course to be used in the classroom. The researcher aimed to provide physical education teachers can test the physical fitness of the students correctly.

There is also a demonstration of the correct test. Physical Education teachers had to be trained fitness test in a real situation and share their learning experiences with a lecturer in order to put into practice in the classroom effectively. Besides, this development model is based on important principles to develop professional teachers of Sparks and Louks - Horley (1990) which motivated teachers to participate School-based Activities to ensure that teachers have the knowledge and new approaches to teaching in the classroom.

This research was also consistent with the research of Wittayaphat, Sawang (2004) that suggested physical education teachers should use the concept to facilitate the development of a person completely including physically, mentally and socially. This model process focused on not to relying on the Ministry of Education alone but to the basic movements of each age.

For the second step of development model, the researcher arranged Approach the fieldwork and mentoring. The purpose of this part was to study the planning and learning management education for health promotion, also to assist the teachers and give care, consulting, suggestions, and support. Researcher had developed the model according to the principles of professional development for teachers of Claks (1994). It was stated that learning with practical aspects of participation in class was affecting behavior change teaching and learning of teachers more than just going to seminars with lectures but no follow-up or feedback. This was in line with the recommendations based on strategic education reform in the second decade (2009-2018) of Thailand which accelerated education reforms in teacher and staff, using the school as a base (Office of the Education Council, 2009). In addition, the researcher used the principles of Mentoring by Ibrara (2008) to reflect and analyze of what was happening in the creative atmosphere together with the supervision of goodwill by Amornvivat, Sumon (2004), which was mainly based on the principles of democracy. It was a mutual respect between the giver and the receiver consisting with giving heart, team work, intention, and opening mind.

The third step was sharing the lesson learned which aimed to motivate teachers to offer and publish works in order to promote Health education based of the brain based learning. It was found that the physical education teachers could share an opinion to exchange lessons learned in a good level (4.50), but the problem was there were some teachers could not come to attend this class. Therefore, they should choose the right time for the event and make an appointment, maybe during the holidays. The researcher had used the principle to create a sense of participation by Hord, et al. (1987) which was an advanced networking. It said that physical education teachers had to exchange experience of teaching to each other as well as to publish their work and recommend to others. Additionally, it was found that students were happy with the physical education classes. They had a better health habits and loved to exercise and



play sports. This report came from the observation made by observing the number and frequency of borrowing sport equipment to play at their free time. There was an innovation of physical education teaching for primary school students' health made by Mae Tang School. The school innovated and build the BBL playground based on the concept said that *"The movements will result in learning better and better"*. The students spent about 5-7 minutes playing at the playground before class. Moreover, Physical education teachers who had participated also gave comments which said that *"it is pleasant that the lecturers come to help us. It is like a mirror and the development model makes us to discover more"*

However, there were two obstacles found in this development model. The first one was the teacher's management policy. The teachers need to understand the importance of physical education and give more support. The other obstacle was the limit of materials and equipment. Some were inadequate and expensive. Thus, the researcher gave them a suggestion to use or adapt cheap and local materials instead of the expensive ones.

The third component was the evaluation of the development model which could be divided into two types. 1) Evaluating the purpose of development. 2) An objective assessment of each stage of development. This type was the assessment, a planning and learning management for health promotion which was based on learning principles of brain-based assessed by experts and lecturers. It was in accordance with the research of Pleankham, Sakonwan (2007), suggesting that the evaluation should intensively focus on the concept of the development, together with evaluating the performance of teachers by focusing on practical skills, knowledge, and attitude.

The result of the development model used for performance management in physical education teachers for their students was verified and relied to the principles of The Joint Committee on Standard for Education Evaluation (1994). The process was made up by 8 qualified experts who were experienced in the field of curriculum and instruction of teaching Physical Education Sports Science And development for teachers and education. It was found that the result concerned with feasibility was in a good level (4.38). The result of the appropriateness was in a good level (4.48), too. It showed that the development process is appropriate and consistent with the purpose of development. The result of the correctness and sufficiency was at a good level (4.34). It

showed that there was accuracy in each step of development and the development process was exactly accurate. The result of usefulness was also in a good level (4.50).

In addition, the experts also noted that the development model was quite completed and effective since it inclusively helped to promote the development of performance management. However, it was recommended that this model should be made as a guide book and should make it clear at all stages of the model. It had to be able to evaluate, follow by verifying after using the patterns. The experts also added that there were a lot of objects needed to be concerned including school administrators, teachers, colleagues, parents and, schools' image which the researcher had to study.

#### **5.2.4 The efficiency and effectiveness of the teaching development models for physical education teachers in order to promote primary students' health.**

The researcher had studied the teachers' reactions, behavior, and knowledge, together with their achievements of the students which based on the concept of Seyfarth (cited in the research of Wisalaporn, Sermsak 2002). It was said the easiest way to evaluate a person's development was studying the action of that person. Also, the student's learning will increase, if teachers have more knowledge and could manage classroom (Classroom Management) which was discussed as below.

The study of the physical education teachers' performance teaching was for promote the primary school students' health and it was the ability to study the teaching of physical education teachers. It was evaluated by those who involved which were school administrators and physical education teachers. It was an evaluation for overall parts and was consistent with the research of Pleankham, Sakonwan (2007), proposing that the teachers had to be assessed or evaluated before and after application of development model. Before application made, the study found that teachers were moderate in teaching. After the research done, it seemed that their performance was getting better.

The study also showed that they got the higher range in general conditions since index needs were in the highest priority. But when considering the sub-competencies in the physical fitness of each student, it was found just a small difference. It might be because there were still problems in the implementation of testing the physical fitness of students, some issues could not be carried out.

Focusing on the preparation of lesson plans, there was a higher range found in all subsidiaries of physical education teachers. Before using the model was in the medium range. Perhaps, it was because of the knowledge of measurement and evaluation in the first stage of the development process, so the physical education teachers could apply the knowledge gained to plan, measure and evaluate correctly. However, the result of general management plan's analysis based on teaching physical education with a difference before and after, was in the minimum rate. It might be because the development time between the start of the semester.

In the field of teaching, the physical education teachers had better performance of all subsidiaries. Even though it was regarded as the highest average, it was the last range when compared with the study needs (5th). It was because most of the physical education teachers taught for a long time and had experienced for more than 15 years.

Focusing on the measurement and evaluation, the physical education teachers had better performance of all subsidiaries, too. In the development process, it should focus on the implementation and evaluation of physical education teachers by advising and continuous monitoring which may take the form of development as an individual. In accordance with the principles of Sparks and Louks - Horley (1990), it led to the practical learning plans and assessments as well as the development of Mentoring of Ibarra (2008), claiming that the development requires counseling advice and ongoing monitoring seriously.

In the field of reflection on teaching, the physical education teachers had better performance of all subsidiaries. Before using the model was at the moderate level. After using the model was at a good level. When considering its performance, it was found that teachers had an average performance in outlining the problems arising from the management of teaching and knew the development of students, as well as provided guidelines for improving the curriculum appropriately. In consistent with the assessment of teaching and learning in Step 2 which was consulting field supervision. It was found that the result overall was good. The teachers could make summary and full results with teaching purposes, together with students' suggestion guidelines clearly. Perhaps, this process of developing was a plan to bring the practicality of a physical education teacher which had been monitored counseling, commented, and experienced with the

researcher and experts. It was also based on the principles of goodwill by Amornvivat, Sumon (2004) which based on the principles of democracy, saying that to respect each other, between the developed and developing recipient. It aimed to provide advice to help promoting and encouraging teachers to teaching physical education for primary school students to promote health effectively. Moreover, it was consistent with the theory of Human Resource Development by Swanson (2001), who believed that human beings need to learn and constantly improve their own knowledge and new skills, and according to the Behavioral Psychological Theory which aimed at stimulating and encouraging physical education teacher behavior response.

2) The study of students' health in this study was based on the four aspects of health including physical, mental, social, and intellectual health.

**Focusing on physical health,** it was found that after the development model, student behavior was better. The practicing had been increased (1-2 days), do it 3-5 days, up from 25 % to 26%, and more than 5 days up from 38% to 47%. However, there were still 46% (increased 2%) of students with “Never doing nothing” behavior for more than two hours, like reading, watching television, and playing computer games.

**Focusing on mental health,** it was showed that the students had a better attitude towards sport and fitness (increased from 57% to 74%). They agreed with the negative message at the better level which decreased from 18% to 13% with reviews after the development, the difference in the waiting time to exercise, play sports, was gotten the greatest increase of 27%. There was still a little 12% showed that the students thought sport was boring, cumbersome, and time-consuming.

**Focusing on social health,** the researcher focused to analyze the students' opinions towards their friends, family members, and other people. After the development model made, the improvement was found positively by increasing from 30% to 76%. They agreed with the statement with negative message less than before (from 18% to 10%) and Up to 61% with the feeling that if there were any problems they would think of their friends first. Dropped to 16%, they could control themselves by showing no signs of upset or angry when someone teased them.

**Focusing on intellectual health,** 80% was considered as the mean which the researcher expected to get. It presented that students had a better ability to

critically think, analyze, and imagine. After the development model was used, the result showed that students passed the mean and surprisingly developed themselves since the percentage was increased from 37% to 97%, which higher for 17% than the mean set. This might be because the physical education teachers had the better ability to plan the lessons and teaching plans. They also could organize movement activities, sports, both in and out of the classroom. The physical education teachers are capable of teaching activities according to the procedure. They provided teaching class based on the ability of their students as well as created a good atmosphere for learning. They could give students adequate practice and safety. They allowed the students to play and move more since they urged the students to have movement activities out of the class more such as cycling to the school, cleaning, and enjoy the BBL playground. It was also consistent with the principles of Brain-based learning of Jensen (2004) because the teachers use the curriculum to teach their students including 1) Preparation used after the debate from the previous experience of students 2) Acquisition 3) Encouragement and elaboration 4) Memory formation 5) Functional integration.

More than that, it was consistent with the 3 principles of physical education that change students' behavior: 1) Knowledge, critical thinking, or cognitive domain 2) Attitude or self-esteem, and 3) Skill or ability. The students could do more activities required by each range of ages and could be said that this was a perfect teaching which could be certainly used and was effective (Chaitieng, Arporn 1997). It also resulted in students the fundamental movement skills and movement controls their own. The curriculum gave students a quality learning, health and physical education scheduled by focusing on the students' movement, exercises, and sports activities. Sport was regarded as a tool for overall development, including physical, mental, emotional, social, intellectual, physical, health, and sports.

### **5.3 Suggestions**

#### **5.3.1 Suggestions to the application of the research finding**

1) The researcher found that there were not enough of physical education teachers and most of them got too much work to do, so agencies or school ministrations should implement the project to provide physical education teachers more to students as well as reduce their unnecessary work in order to help them serve fully and develop the students' opportunity to develop themselves continuously.

2) All the ministrations and people who have responsibility in management should analyze the shortage staffing of physical education teachers. They have to accelerate enough the recruitment and appointment to fulfill the needs of the schools appropriately, as well as to meet the policies which support the core curriculum for basic education increased in 2008 by physical education class time.

3) One factor of the teaching competency of teachers was to give priority to the development. Thus, the administrators, teachers, and scholars should provide support and encouragement, as well as provide the policy, places, the media, and materials which are used in teaching physical education, adequate and reasonable.

4) There are 2 parts of the conditions for the success which are the condition of development and the process. Therefore, agencies and interested parties who would like to bring development model to use have to screen and conduct to get the effective trainers or experts. They have to be qualified that meet the format set and development and project management to the role. They have to know how the pattern develops duration according to the development needs of the recipient. Moreover, they are able to set a long-term project to develop one semester or one academic year and are continuously monitoring developments very seriously in order to obtain concrete results.

### **5.3.2 Suggestion for future research**

1) In order to give teachers awareness to develop themselves, it should be more research focusing on physical education teachers' development, the problems, and needs, according to a survey of real health problems of the students, then analyze the causes for the problems that led to the selection of solutions developed through the teaching of teachers.

2) According to the school context, there should be research and development of teachers individually, or a small group with a similar context.

3) For the further development, physical education teachers should be encouraged to carry out research and development for the teaching of physical education in order to promote the health of students.

4) Techniques and lesson plans of the teaching the physical education teachers from this research should be further researched and developed of new forms of teaching physical education and physical activity that contribute to the health of the students.

5) To improve its effectiveness continuously and sustainably, there should be a research about the development, performance management, learning, and teaching within the context of using the classroom as a teacher. Besides, it should be provided for a long-term supervision which estimates the reaction behavior of teachers, also develop the students consistently to statement that **“The students’ quality reflect to teachers’ quality.”**



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