

## **CHAPTER 2**

### **Review of Literature**

In this research, the researcher had reviewed the literatures and summarized the related literatures and researches as follows:

1. Concepts, Theories, and Principles related to Human Resource Development
  - 1.1 Definitions of and beliefs in human resource development
  - 1.2 Human resource development principles
  - 1.3 Adult learning theories
2. Concepts, Theories, and Principles related to Teacher Development
  - 2.1 Concepts and theories on participatory development
  - 2.2 Principles on building up attitude toward participation in the teacher development
  - 2.3 Principles on developing the teachers toward teaching professionalism
  - 2.4 Model for professional teaching development
  - 2.5 Principles of guidance and counseling
  - 2.6 Educational supervision for teacher development
  - 2.7 Model of teaching profession development in Thailand
  - 2.8 Policy on teacher and educational personnel development in Thailand
3. Concepts, Theories, and Principles on Physical Education Instructional Provision for the Health Promotion
  - 3.1 2008 basic education core-curriculum
  - 3.2 Principle principles for teaching physical education
  - 3.3 Measurement and evaluation in physical education
4. Concepts, Theories, and Principles on Health Promotion
  - 4.1 Meaning and significance of health promotion
  - 4.2 Health promotion principles
  - 4.3 Physical competence relating to health
5. Researches related to physical education teacher development
6. Research conceptual framework

## **2.1 Concepts, Theories, and Principles on Human Resource Development**

### **2.1.1 Meaning of and Beliefs in Human Resource Development**

Swanson (2009) had defined human resource development as the process of developing and releasing the expertise aiming at improving the organization and team working and individual performance. Before that the author and another colleague, (Swanson and Holton, 2001) had proposed about the beliefs which were center of human resource development called “Core HRD Beliefs” which included 3 beliefs as follows:

1. Organization was the body created by people from their expertise which led to the formation of an organization and accomplishment of it.

2. Development of the expertise aiming at yielding the highest benefits could be done through the process of human resource development and should be done to yield mutual benefits both in the long and short runs and at the organizational and individual levels.

3. Professional experts on human resource development were the ones who promoted the completeness and unity of the individuals, people, and operational process of the organization.

Human resource development was based on 7 assumptions reflecting the philosophy of the human resource development as follows:

1. Worth of individual – Hence, humans were important and worthy for the organization whose quality was assumed from the employee’s yielding benefit and their value to the organization.

2. Employees as the resource – They had status in the organization satisfying its present and future needs through their skills on learning new things.

3. Quality work environment – Quality of working life was the legitimate thing by which the organization should pay attention to the rights, safety, and cleanliness related to the employee’s performance.

4. Employee satisfaction – Every human had the rights to get satisfaction and good feeling on the ways they would yield benefits to organization. The work’s success was the result of the deep satisfaction of the employees. Thus, organization should design its working process to fit the employee’s nature. Instead of treating them

as the robot, there should be the organizational design that fitted nature of the employees – the congruence between technology and employee's competence.

5. Continuous learning need - The employee's training and development should not be done only on certain period of time. No employee could come in the work and had all the skills required by the organization though each of them were carefully selected basing on a certain set of basic knowledge and skill. The employees need to be challenged to improve themselves to have new knowledge and skill. Thus, the organization had to provide them the continuing learning.

6. Change opportunities preparation – The changing situation, environment, and needs for resources, there had to be a preparation to have the employee work in the new position as there were continuous changes both inside and outside the organization. It had to realize its function on enhancing the employee's capacity.

7. Awareness on human resource development - The human resource development was beyond the training but included the understanding on human behavior, responding to the needs of the employees, and interaction of the employees with variety of things in the organization all of which would lead the their organizational productivity. They had to know more than just the responsible tasks. Thus the employee's comprehensive knowledge, understanding, and skill are significant to the organization.

The main beliefs and assumptions on human resource development to base the competency development on teaching provision of the physical education teachers to promote health of the primary students had to take into consideration and realize the human's self, values, environments, and the needs as well as the needs of the organization. The process should various and continuous to turn the employees to the valuable resources to produce the quality products for the organization and could cope the changes to come.

### **2.1.2 Foundation of Human Resource Development**

Swanson and Holton (2001) had explained the foundation of human resource development that it should be on the theoretical foundation to build up understanding and help accomplish the roles of the employees and the process of human resource development composed of psychological theory, economic theory, system

theory 3 of which were like the legs of a chair setting on the ethic base. Each leg was a component of the human resource development theory which had been integrated to serve as the theoretical foundations for the human resource development as follows:

**Economic Theory** – The theory required the concern on efficiency and effectiveness of the resource utilization to assure the products along the goals of the organization. The process require the manipulation of the scarce resource to yield the highest benefit for the organization. The investment on human resource had to make incomes for the organization. There are 3 sub-theories to explain economic operation as follows:

1. Scarce resource theory – This theory contended that the resources, namely, capital, raw materials, time, etc. were scarce. They had to used in the way to yield the highest return. The practitioners had to make decision and anticipate the outcomes to choose the choice that was worth investing.

2. Sustainable resource using theory – This theory was similar to that on scarce resource but it had differed in its focusing on the choice that promised the continuous long term benefits.

3. Human capital theory – Becker, one of the economic thinkers, had contended that the organization could make difference by adding value to human resource in terms of health, education, training, and public health all of which had to be worth investing for the provisions of education, training, and public health.

**Psychological Theory** – This is the theory related to the individual's mental process affecting his or her human behavior. It had focused on the relationship between learning and behavior and explained learning, motivation, process of information delivery, and action of individual or group of individuals. The principles could be used to improve the individual's performance. There are 3 groups of psychological theories as follows:

1. Gestalt psychology – This group of psychological theory contended that, when one studying any particular situation, if he or she separately studied part by part, he or she would never be able to understand nor explain such situation. On the contrary, the person had to look at the overall picture of it to understand the meaning of it. Gestalt theorists believed that each individual could do thing differently as they had different

experience. Thus, in studying human behavior, one had to see the overall picture first before differentiating it to build up understanding of his or her.

2. Behavioral psychology – This group of theory focused on developing behavior of human resource focusing on stimulus and response through the process on stimulating, encouraging, forcing, punishing, and learning programs.

3. Cognitive psychology – This type of theory had integrated gestalt psychological theory with behavioral theory to explain the relationship between the individual's learning and thinking, understanding, and perceiving the stimulants all of which had been formed through the individual's experience. Thus, in designing the human resource development program, one had to be concerned with the experience, perception, or factors that stimulated the individual's motivation to learn leading to the improvement of his/her performance.

**Systems theory** – This is a minor type of knowledge comparing to the economic or psychological theories. Systems theory had focused on general principles of rules and tools for solving the problem by connecting all parts on the issues concerning human resource development. Systems theory is composed of 3 subsets of the theory.

1. General systems theory – This type of systems theory focused on general principles of systems covering the inputs, process, and outputs, and the feedback. Human resource development activities had to be designed as an open system than the close one. The open approach would as well take into consideration the environment and feedback when designing the human resource development activities.

2. Chaos theory – This theory was concerned about the phenomena that had not necessarily followed any definite rules blocking one from predicting what would happen next. Human resource development too could not be exempted from this uncertainty.

3. Future theory – This theory had attempted to predict what would happen in the future suggesting that human resource development activities had to be designed and planned to deal with the changes in the future to come.

The 3 theories on human resource development had been integrated to have guided the model development of this physical education teachers' teaching provision competency development model for primary students' health promotion. The model had

been developed basing on ethical principles focusing on the learning experience to efficiently use the existing resources.

**2.1.3 Adult learning theory** – This theory was about learning which was comprehensive and practical. As the adults had to get involved with the job for maintaining life, they needed continuing learning and life-long learning. The adults would accept the outcomes of their learning and education that could enhance their knowledge without taking a long time with minimal expenses. The most important thing was that adult learners were happy with their learning. This had agreed with the concept of adult learning proposed by Knowles (cited in Desimone, Werner & Harris, 2002; Kolb, et al., and Torrington, Hall & Taylor, 2002) who discussed on the technique and pattern of decision making that adult learning had to open for them to plan and analyze by themselves on the learning objectives and participate in the instruction and the achievement that was realized through their participation in the evaluative process including the learning from the true experience of problem solving.

**Principle of Adults Learning** - Knowles (1970, cited in Knowles, 2005) had defined the term “Andragogy” as the art and science of facilitating the adults to learn. This theory was based on the assumption that each adult had maturity. They should have the capacity on self – directing, utilizing their experiences to learn about things, realizing their readiness to learn, and organizing the learning to solve the problems occurring in their life time. Such theory had been based on the 6 assumptions differing from those on the young people’s learning. These assumptions are as follows:

1. The learner’s need to know - The adults would realize that they had to learn something first before learning the things for which they had aimed. Thus the first function of the learning facilitator was to help the learners realize their own need to know or to learn.

2. Concept of the learner – The people who were adult had to have the deep desire to see themselves being able to control and lead themselves had changed their role from depending on others to the one who could lead themselves. The facilitator then had to encourage the adult learners to guide themselves along their individual needs.

3. Roles of learners experience – When people have become more mature, they would have more experiences making them the learning resource. At the same time, they would have strong foundation for assimilating pieces of new knowledge. This is particularly true for the adults as they have accumulated knowledge for their life time. These experiences would serve as the learning resource for the individual him/herself and others. The adults would understand and be able to learn from the experience than from the words orally given by the learner giver or teacher. The adult's way of learning thus is mainly on top of experiences.

4. Readiness to learn - The adults are ready to learn when they feel that such thing is needed for performing the role on the same status as theirs. To them, learning responds to the need to solve problem in the real life. Learning then should be provided in response to the needs of the learners, relevant to the ability and readiness of each individual learner. The learner would try to search for knowledge that could be used to solve the problem right away on the site. Learning should concern with real life and could be used to take action and yield the benefit right away.

5. Orientation to learning – Learning of the adults tends to center on problem as the knowledge gained would be used right away and had no need to wait for using it in the future. Moreover, the adult's learning would lead to continuing learning and stands ready for developing the capacity of the individual to the highest level of efficiency. The knowledge provider then should set up the environment to support the learning of the adults.

6. Motivation – The adults would respond to the external motivation such as higher job position, higher salary, or others. However, the motivation that is powerful the one that is pushed out by internal drive such as the desire to have more satisfaction with the job, self-respect, life quality, and job duty.

Concerning the development, adult is the age of high participation in the society. Thus the factors that motivate the adults take part in the learning process would be of social nature which could be classified in 6 types as follows:

1. Social relationship - Adults want to meet new friends and have the need to develop relationship and friendship with others.

2. External expectations – Adults want to respond to the expectation or recommendation of other individuals such as family members, superiors, etc.

3. Social welfare - Adults want to develop their abilities to provide services to others, to help prepare readiness for the community, and to participate in the community.

4. Personal advancement - Adults want to assume higher position, be confident in their career progress, and be able to stand up against the competitor.

5. Escape / Stimulation - Adults want to get rid of the boredom and take a break from their daily routines at home or the office, and open themselves for excitement in their life.

6. Cognitive interest – Adults want to learn how to learn and search for knowledge and get satisfaction from doing so.

Motivation leads adults to engage in the learning activities. In general, this would include the need to have professional competency or career license, expectation get the promotion to upper rank, career supports, skill maintenance, new skill learning, adjustment to the change, and learning to comply to the policy of the organization. The most powerful motivation is the internal drive such as the desire to get higher satisfaction from the job, self-respect, and better life quality ( Knowles, 2005) . The effective way to motivate the adult learners is to increase the justification in taking part in the activities and reduce the obstacles of the participation in the learning activities. The teacher has to realize why the learner has taken part in the learning activities and find out what obstructs them from engaging in the learning activities. The motivational planning has 6 factors to be concerned with. These are: 1) Attitude –the combination between the conceptualization and the trend of the feeling respond or react to, 2) Needs – the internal drive leading the learners to move from an unclear goal, 3) Stimulation – the change on understanding or experience by the environment to help the adults maintain their learning behavior, 4) Affection – the internal motive or positive feeling to continue participating and perpetuate deep interest in the content or activities, emotional experience emerged during learning, emotion that gives meaning to and be relevant to the learning, 5) Competence - Adult would be motivated when realizing that he or she had achieved the outcomes of the learning activities helping him or her to have higher efficiency on the things regarded valuable, 6) Reinforcement – In using reinforcement, one has to clearly explain the progress the subject has had. As adults



have many responsibilities, differing from when they were teenagers, they had to balance all these responsibilities with their learning needs. These responsibilities could be obstacles that block their participation in the learning activities. The obstacles or barriers that block the learning activities could be classified in 3 types: Situational barrier – the adult's responsibilities for their career and family having no time nor money left to spend for taking part in learning activities, Institutional barrier – the school programs that have been designed such as schedule, place, duration, etc. that have not fitted the needs and constraints of the adult, Dispositional barriers - This is the attitude of the adults to treat themselves as learner could obstruct their learning, such as attitude on thinking that they are too old to learn, have no ability to learn, would not be able to compete with others, have not seen the benefit of learning, are shy, or are lazy to engage in the learning activities.

Moreover, Jones (2000) had come up with 9 points of concern when planning the learning activities and training for the adults. These points are:

1. Motivation – Learning has to have the learners put into practice. This internal state is initiated by learners who feel free to do or not to do something to search for knowledge, to have the attitude or skill the teacher has been teaching. The teacher could not always motivate the learners to motivate themselves to continuously do things. Only the learner could motivate him/herself to do certain thing. The desire to have his or her needs satisfied is the cause pushing the individual to take action.

2. Utilization – The learners have to recognize the usefulness of the contents to learn. Role of the teacher is to help the learners work better. One has to keep in mind all the time that the adults learn the best when centering at the problems they have encountered. If the learner could not see how the content being learned would benefit him or her, he or she would not try to learn it.

3. Stimulus - Learning is stimulated by the 4 senses of humans. Human mind is like muscle which would be sensitive when sensory parts all over the body have been stimulated. The sensory motors of the learner have to be stimulated before he or she could realize and accept the facts, concepts, and skills the teacher had wanted the learners to learn.

4. Interest - The teacher has to know how to make the learners interested. One function of the teacher is to create their interest in learning. First of all, the teacher

has to be an interesting subject who could continuously create their interest during the learning period and has to maintain their interest. In doing so, the teacher has first been interested in the learner to satisfy their interest. The student would be sincerely active if the teacher has individually interacted with him or her. It is quite hard to differentiate between interest and motivation. The two seem to have cause and effect interaction. If interest is high, there is a minimal need to motivate one to learn. If motivation is used continuously along the learning process, the problem of lacking interest would have been solved. Consequently, there is a need to maintain these two to maintain the interest on part of the learners and make them want to learn through the process in which the teacher have kept the learners interested.

5. Transfer - A learner would easily learn when he or she could transfer the learning. Normally, the learner would have some prior knowledge and understanding on the subject contents. These knowledge and understanding could be useful to start with. It is the teacher's duty to utilize such prior knowledge and understanding to promote the learning process. This principle has been known as "transfer" that is the process of building up new knowledge from what learners has had proceeding from known to the unknown one which is termed positive transfer. If the existing knowledge conflicts with new one, it is termed negative transfer. Negative transfer could be avoided by focusing on learning again. It is a new learning which needs to be recreated. Nonetheless, individual always deny the change on the idea he or she has accepted all along. Teaching the learners with new idea is then easier as the learner has not need to confront with the learning that conflicts with the one previously learned.

6. Logic - The learner has to recognize the cause and effect of the content. Individual's thinking process could start with sensory perception but there is still something known as "Think-power" which forms the foundation of mind and is used in the reasoning process to reach in one's mind and later is selected through analytical process which might refuse it or at least be questioned. The teacher using reasoning principle to prepare the lesson plans could make the instruction flow along the mind's reasoning mechanism.

7. Immediate Application – This principle could lead the teacher to the experimentation using skills and facts learned. Consequently, the application should be tried first in the classroom. The learner could begin to apply what he or she has learned

or realized the outcome occurred to him or her. This would enable the individual to identify the relationship among the contents and try to test his or her understanding. This would serve as a stronger motive to learn.

8. Participation - The learner would learn better if he or she has participated in the learning activities. The good rule to take is the one contending the more one participate, the more he or she learns. Without participation, learner would not think nor apply to lead to more learning. As a teacher, one has to plan for the participation of everyone for the learners to do and gives them the opportunity to question or recommend on the content being taught. Through the process, the learners would have a sense of being part of the learning situation. The activity that facilitates the participation are oral or written expressions, group or individual work, focus group, drafting the materials to be printed out, acting or demonstrating, etc.

9. Repetition – Doing thing repeatedly would help increase the individual's learning. This does not mean, however, that the teacher would have to repeatedly teach a thing as if it is the tape recording. It is to have the teacher understand how human mind works in memorizing the content and realize the significance of doing thing repeatedly in the learning situation.

Consequently, this research and development process on physical education teacher development model has utilized the theories and principles of adult learning or andragogy which believes that each adult has full maturity, the needs for, and ability on self – directing in using the learning experience, and readiness to learn and organize the learning to solve the problems occurred in his or her life time.

## **2.2 Concepts and Theories Related to Teacher Development**

This physical education teacher development on instructional organization had applied the new learning organizing model in providing education. The researcher had realized the significance of the sense of participation on part of the trainees. She then started with building up this participatory attitude. In the process of the operation using participatory development model, there would be supervision, reflection on the operation, and exchange on knowledge and experience. The concepts, theories, and principles on the teacher development had been examined and reviewed as follows:

### **2.2.1 Concepts and Theories on Participatory Development**

Patanaponasa, Narinchai, ( 2003), and, Burikul, Thawilwadi, ( 2005) had referred to the concept, theory, and process of participation as the process of mutual learning among every concerned side. It was a two-way communication. There were at least by 2 sides of individuals taking part in a certain activity aiming at mutual goals to assure the effective decision making and public support. The participation in this development process started first at the step of identifying the things desired by the community or society up to the last step of the project. The participants worked together to identify the problem before setting. After that, they set up the guideline for getting what they had desired for. Afterward, they collaboratively worked on it before collaboratively worked on evaluation and shared the outcomes derived. There were 3 conditions for the participation – freedom to participate on voluntary basis, equality of rights, and participant's ability to participate. Components of the participation included: 1) clear objectives or goals, 2) target activities with form and process, and, 3) individuals or target groups to participate had to be relevant to the objectives and activities to participate.

Factors and guideline for encouraging the participation as suggested Patanaponasa, Narinchai came up with 7 factors as follows:

1. Managerial Factor – The Project had to promote the participation by modifying the organizational culture. Employees, in particular, had to have commitment with their career. The organization had to facilitate the understanding on interdependence, collaborative development, and attempt to get the consensus on the job to be carried out by each sector, build up mutual trust, reduce competition among the sectors, and assure that every sector would gain benefit from working together.

2. Communicative Factor – This would facilitate the participation aiming at having everyone to realize his or her self-esteem and build up the employee's confidence. Communication to be promoted had to have crucial nature of building up mutual trust focusing on verbal communication with the use of the combination of various media accessed by individuals of every level. The communication could be both formal and informal. If personal media were used, it should start from the individual's dress which should look simple, gentle, and intimate, avoiding the authoritative symbol, using gentle and soft voice that stimulated opinion, promoted attitude toward

participation, using mini-communicative tools, and focusing on horizontal communication at every societal level. The communication should comply to the democratic principle. The contents and goals were not prescribed from above. It should build up satisfaction of the participants who would be happy in participating. The duration of participation should be continuous not just occasional.

3. Political, Social, and Cultural Factors – These factors could be manipulated to serve the purpose decentralization opening for the participants to decide and actualize their rights. They were also the economic and cultural conditions that facilitated participation.

4. Project Factors – The project-related factor very much facilitated the participants and put on them with the sense of ownership from the beginning until the end of the project.

5. Mentoring and Facilitating Factors – The mentors and facilitators had to examine various components of the project, had knowledge and understanding on the participatory process, and pooled the people in, identified the leaders, provided information, provided moral support, and had collaborated in solving the problems and obstacle, and, were sincere, trustable, and admirable.

6. Leadership Factor – The leaders were sincere to assist and able to encourage the participants to work out the problem and realize the significance of solving the problem.

7. Social and Psychological Factors – The factors would stimulate the participants to be interested in and concerned with the problem and had the sense of ownership on the problems and decided to work together to solve them.

Advantages and disadvantages of the participation could be concluded as follows:

1. Participation could facilitate the exchange on experiences and ideas among the participants leading them to accept the difference which was the basis for democracy. However, the participation process might cause the delay of certain activities. If there was some disagreement in a certain activity, it might lead to disharmony. If there was disagreement on certain issue, it might take a lot of time to settle down on.

2. Participation could help push out the difficult task. Nonetheless, it would take a lot of resources as well.

3. If the participation being mobilized was relevant to the problem and needs and initiated by the people in the community to help themselves without having to solely wait for external assistance, it would lead the people to have the sense of ownership and pride on what had been together done. However, it might be dominated and led to a certain hidden goals making the participation wasteful.

4. Participation could strengthen the community or society as they had taken part in decision making, operating with transparency, and protecting the mutual benefit, leading the community or society to the goal of self-determination.

### **2.2.2 Principles for Building up Sense of Participation in Teacher Development**

Hord, et al. (1987), had contended that the adoption of the innovation to apply in the organization required the creation of the sense of participation on part of the organization's members first. They then proposed seven steps which were positively related to the beliefs of teachers on changing their instructional behavior as follows:

**1. Perceiving Step** – In this step, the teacher had not yet changed their instructional behavior nor had taken part in the innovation being adopted to be used in the school. They simply acknowledged the change.

**2. Responding Step** - At this step, the teachers began to pay attention to the new innovation by asking for addition information but had not yet promised themselves to participate or still had anxiety with the new innovation.

**3. Value Creating Step** – At this step, the teachers began to realize the significance of such new innovation and needed to adopt the new innovation to be used but such need was not yet certain. They still had doubt, uncertainty, as well as the conflict on their instructional behavior, and problems and obstacles on resources and budget for the new innovation on certain case.

**4. System Organizing Step** – At this step, the teachers had determination to adopt the new innovation. They had some instructional behavioral change focusing on

the procedure and tasks they had to do. Having adopted the new innovation, the teachers had set up the plans on information, resources, and time.

**5. Empirical Outcome Realizing Step** – At this step, the teachers had developed the sense of participation at the level of concerning with the impact of using the innovation. They paid attention to the impact on learners wondering if and how the adopted new innovation would lead to behavioral change on part of the learners. The teachers would evaluate the learners to get the information on knowledge, skill, and attitude of the learners to make conclusion and decision on improving their instruction and the instructional system.

**6. Network Creating Step** – At this step, the teachers had developed the sense of participation. They wanted to exchange experience and ideas on the most appropriate choice with others and had the need to publicize their works as well as to recommend it to others.

**7. Constructing Step** – This was the last step of developing the sense of participation. At this step, the teachers had been delighted and confident in their ability to change their instructional behavior along the new idea and extend the experience encountered to the new innovation discovered themselves.

Thus, in adoption of innovation into school aiming at having the teachers change their instructional behavior, it was necessary for the teachers to be concerned with sense of participation. This 7<sup>th</sup> step was the main goal of developing the teachers toward professionalism.

### **2.2.3 Principles of Developing the Teachers Toward Professionalism**

Clarke (1994) had proposed the 10 key principles for developing the teachers toward professionalism as follows:

**Principle 1** – This was the principle of building up the sense of participation by the teachers themselves. The process should open the opportunity for the teachers to participate on their own volunteer in the program set to develop professional teachers leading to the success on adopting the teacher development program. There were many researches which agreed that the program for teacher development of the “One Shot Model” type such as a one-day workshop during the vacation had the least impact on instructional behavioral change of the teachers. Moreover, the individual difference of

the teachers such as knowledge, belief, and skill as well as the flexibility possessed by each of the teachers while engaging in the teacher development program also had impact on instructional behavioral change of the teachers.

**Principle 2** – The program should emphasize on developing the group of teachers than individual of them supported by school, community, including the learners, parents, and school board members. The teacher development had to be in the atmosphere of friendly working culture which would lead to the success on changing instructional behavior of the teachers and assure the effective implementation in the real situation. The normal instructional task of the teachers could be integrated with the teacher development program in term of feedback under the internal supervision, idea exchange forum, focus group, as well as the problem and obstacles, and the opportunity for the teachers to present the adopted instructional innovation adopted to the public.

**Principle 3** – It should be accepted that in developing the teachers toward professionalism would have some obstacles occurring in the process of teacher development. Concerning this, Clarke (1994) had summarized the obstacles occurring in the process of teacher development and came up in 4 groups as follows:

**Obstacles from External Factors** – This group included the inappropriate application of the theory, lack of support from the central agencies, lack of budget, lack of monitoring and evaluation, and the failure of building up mutual understanding.

**Obstacles Concerning Management, School Management, and Community** – This group included 1) No opportunity opened for each teacher to study on the program and work together to set up the instructional plans, and implement them together, 2) Method of evaluating the learners and the teacher was not relevant to the innovation used for teacher development, 3) Perception of the learners, parents, school administrators, school board members, and on the innovation to be used for the teacher development.

**Obstacles Concerning Beliefs, Knowledge, and Practice of the teachers** – This group included 1) Lack of determination on part of the teachers in changing their instructional behavior, 2) Familiarity and obsession with what had been practiced leading to their resistance to the new innovation, and, 3) The teacher's insufficient knowledge on the subject and content being taught.



**Obstacles Concerning School Working Team Development** – This group included 1) Lack of connection between theory and practice in the real classroom, 2) The focus on correcting the wrong doing rather than simulating for the improvement and development, 3) Lack of integration of knowledge on teaching and learning and method of working team development.

**Principle 4** - Experience-based learning or learning through practice in the real situation by taking part in the various classroom activities were the methods affecting instructional behavioral change of the teachers. Activities for teacher development in form of 1-2 day period of listening to the lecture or watching the demonstration by experts without monitoring and follow-up would be the methods minimally led to the teacher's behavioral change.

**Principle 5** – Motivating the teachers to actively take part and be committed in the process of development toward professionalism and to willingly study on and put into practice the activities and assignments improved or developed for their classroom. The factor led the teachers to keep the promise in adopting the new innovation to the real practice was their being facilitated and supported by the colleagues and administrators to get the experience on perception and change leading to the practice by themselves, the improvement on their instruction on continuous basis and step by step, and realize the impacts on learning of the learners.

**Principle 6** – It should be realized that change on the belief of the teachers on instruction had the deep root in the actual practice in the classroom on continuous basis and it was the result of opening the opportunity for the teachers to reflect on and examine their own practice by observing the learning behavior of the learners.

Most teacher development toward professionalism programs were aimed at facilitating the teachers to change their knowledge, belief, and attitude on the classroom instructional practice and the change on the learner's learning. Consequently, the development process should attempt to build up the teacher's motivation to be confident that they had the ability to improve their instructional capacity and their belief that such development would yield benefit to the learners. This motivating process would assure the teacher's determination and self-promise in continuing developing the curriculum and instruction and implementing it in the classroom. After the teachers had realized the effect on the learners and changed their belief and attitude, the effect on them would

begin to be on permanent basis. Thus, whatever teaching development, if had been set up out of the authentic condition and the instructional practice normally carried out by the teachers, would only minimally lead to the change on teacher's behavior nor the learner's learning behavior. Having the teachers participate in dealing with the instructional problems and assessing and readjusting their belief through reflective process would change instructional behavior to the desirable one.

**Principle 7** – There should be time allocation and opportunity opening for the teachers to plan, reflect, and feedback on their success or failure in performing their instruction to themselves and the group of colleagues to share the ideas and obtain the better and more appropriate method and discuss the problems and attempt to find the best approach to solve the problem maintain the newly found instructional approach.

**Principle 8** - The teachers should be convinced in participating in the decision to adopt the new instructional innovation. The teacher development program taken part by the teachers at every step from the planning to the implementing one would facilitate the teachers in applying the techniques and methods learned through the process in their practice in the classroom.

**Principle 9** – One should realize that changes on instructional behavior and learning could occur eventually and little by little. Sometimes, there are some complication or trouble, the teachers could have anxiety or conflict in their mind. Building up the atmosphere of facilitation and supports by the colleagues and close friends is then important.

**Principle 10** – There should be the encouragement for the teachers to participate in setting up the future goal of maintaining their teaching professionalism. Sustainable development has assured that the teachers could finally create the innovation after the develop program comes to an end after which the teachers could maintain self-directed job and create and expand the network for developing other teachers as well.

#### **2.2.4 Model of Teacher Development Toward Professionalism**

The concept on teacher development using development principle suggested by Sparks and Louks – Horley (1990) had offered 5 models of teacher development as follows:

**Development Process Participating Model** – This model emphasized the on learning from the experience the teachers had in participating in the school's curriculum development and education quality improvement projects. The model was composed of the crucial processes including problem and need identifying, school operational plan developing, searching for knowledge and skills needed for putting plans into practice to obtain the curriculum products and evaluate the outcome. The assumption laying the basic for using this model for teacher development toward professionalism claimed that the teachers would get the highest learning effectiveness when they had the need to realize the problems and solve them. The teachers having been developed through the approach would gain the development on creating the sense of participation through the last step.

**Training Model** - Teachers were the capable learners. Training model involved knowledge inquiry and skill acquisition through the teaching process. Training was composed of theory explanation, demonstration, or creating a skill practicing model, practicing such skill, and giving the feedback on the practice. The assumption of the training model for teacher development toward professionalism contended that the teachers had knowledge on variety of things that had influence on their belief enabling them to imitate or adopt them for their instructional technique. The training should be appropriated to the attempt to develop the sense of participation in the first 3 steps, namely, perception, response, and value creation in setting up the teacher development program using training. The program should open the opportunity for the teachers in the working team to have participation in the step of planning which included the selection of the content, identifying the objective, setting up the training schedule, and assigning the presenters.

**Self-Inquiry for Knowledge and Method Model** – In this model, the teachers would identify the problem or issues on instruction of their interest. They then compiled information to find the cause before creating the instructional innovation relevant to the cause of problem and proceeding the instruction along the new concept having been developed. This model was flexible for being used to develop the teachers both individually or in groups – small one or for the whole school. The process was composed of main steps, namely, problem identifying step, collecting information, analyzing and interpreting the information, creating the instructional innovation basing

on the result of the information analysis, and then, implementing the innovation, evaluating the result. The self-inquiry for knowledge and method was based on the assumption that each teacher had knowledge and ability in solving the problem in his/her classroom. This type of teacher development model could help the teachers to develop the sense of participation from the 2<sup>nd</sup> step – response and developed to other steps to the end.

**Individual Guiding Model** – Under the advice of the teacher developing team, the teachers could learn and practice various things by themselves using the basic knowledge the teachers had had. This kind of teacher development model was based on the assumption that adults were able to learn and achieve the highest effectiveness. They would be highly motivated if allowed to choose the goals and tasks of the learning by themselves. The model could be used with the teachers with different goals. There were many steps of this teacher development model, namely, need identifying, planning for the learning, implementing the plans, and evaluating the results.

**Observation and Evaluation Model** - Observation on the teacher's and then providing the feedback in a constructive way would be the method promising the change on the teacher present behavior. Most teachers had not received any feedback on their instruction. The teacher development model utilizing observation and evaluation was the process of collecting measurable and observable information concerning the operation on instruction of the teachers before evaluating and constructively concluding. The techniques used in collecting information on the teachers could include observation with friendliness by the fellow teachers, the guidance, clinical counseling and operational assessment. This process of observation and evaluation included the pre-observation forum, observation using an observing framework, information analysis, post-observing forum, and the evaluation of the observation, and evaluation on the teacher development model was on the concept of using the feedback results and the analysis that followed to facilitate the teachers in deciding to improve their instruction. One consequence was they had got the new knowledge from their actual practice. The friendliness-based observation by the fellow teachers who helped provide some advices was an effective way to develop the teachers. However, apparently this method had not been widely used. From the results of the research on using the teacher development model, observation form, and evaluation, it was found that the model had helped the

teachers in changing their belief and instructional behavior but had not confirmed the effect on changing behavior of the learners.

In applying all the 5 models teacher development in school, the main goal of develop the regular teachers development was to have the teachers reflect on their knowledge, ability, belief, and instructional practice to assure behavioral change and sustainable learning. It would also comply to the teaching standards that had been set to apply these 5 teacher development models in school basing on the following 6 principles as follows:

1. Opening opportunity for the teachers to participate in setting up the plan with the teacher development working team.
2. The teacher development project had to be on the long-and was composed of sub-projects focusing on enhancing knowledge on the content and methodology for the teachers.
3. The school-based activities were organized for various purposes to assure the teachers applying new knowledge and methods in the classroom, such as the activity in which the teachers had constructed the learning units, analyzing their own instruction by watching the video recording their instruction and making the reflective notes on it.
4. There was a requirement for the teachers to engage in the activities or reflective assessment tasks to review their knowledge and belief and then correct or change knowledge and belief that were erroneous and then maintain the valid knowledge and belief and take leadership in building up the network for developing other teachers.
5. There should be activities to promote leadership. The teachers with experience would have capacity in becoming core-leader teacher and take the leading role in developing expanding the network to develop other teachers.
6. In evaluating the teacher development program, there was a need to evaluate the program during its operation on continuous and in-depth bases.

#### **2.2.5 Principle of Mentoring**

Wikipedia (2015) defined the term mentoring as the relationship in the personnel development process in which the person with more experience or knowledge would help advise the one who had less experience and knowledge. The mentor was an

expert which could be older or younger. Thamavitheekul, Anchalee (2009) stated that mentoring was the facilitation provided by the person who had knowledge and ability accepted as the one who could provide counseling and advices to the teachers to increase capacity to be able to learning activities with quality. The mentor would provide assistance to the teachers who were regarded as mentee. The school could set up the mentoring system for the teachers who were beginner at the school. The mentors could be the school principal, the internal supervisor, the model teachers, or the educational personnel who were with knowledge, experience, and expertise in providing education. The most important characteristic of the one who would serve as the mentor for the new teacher was his or her attitude of positive thinking. The mentor had to serve as the good model for the mentees. Their main roles included the transmission of knowledge and experiences on educational provision for the new teachers to be able to learn. The mentor should also provide counseling and guidance to facilitate the teachers to adjust themselves to the organizational culture and monitor and follow up the result of such knowledge and understanding provision to the new teachers.

Ibrara (2008) had defined the term “Mentor” as an adviser who was well-rounded and trustable. Mentor would stand ready to help other peoples to gain experience in learning and progress. Mentoring, meanwhile, was concerned mainly with career maintenance. It was the counseling and provision of information or guideline by the individual who had experience, skills, and expertise useful for others to develop his or her career and private matters. There were 3 types of benefits gained through the mentoring process which included development of organization’s human resource, the transmission of wisdom or knowledge from one personnel to another, and the organization’s ability to keep valuable personnel with organization. The costs burdened by the organization were time and devotion on part of the mentors. An organization, then, had to weight between the benefits and costs if to decide to go on.

The factors determining effectiveness of a mentor included his/her high standards, willingness to devote time and ability for the mentoring, and effort to find experience to develop the ones who had been under his/her mentoring. The effective mentor should be the one with success and had been well accepted by the personnel in the organization. He or she should have good skill of self-development, be a good listener and considerate, have the quality to maintain a satisfying mentoring, know how

the mentees could learn the best, have ability to acquire information and identify the persons who could help out others concerning the organizational duties, and be straightforward.

For effective mentoring, the mentor had to serve as the model with behavior that led to success. Thus, the mentor's operational behavior would impress the audience than his/her verbal. The incongruence between what one said and did would confuse the mentees leading to their despair. The advice and feedback to use should be workable and understandable by the mentees. They should not be too abstract or theoretical beyond the mentee's control. The mentors had to tolerate the need to jump to solve the problem encountered by the mentees. On the contrary, they should facilitate the mentees to learn to help themselves and reflect the reality made happen by their behavior. The mentors should provide the mentees with alternatives rather than criticizing personal matters. Such guide should help lead the mentees to build up the successful plans with strong foundations of knowledge, goal, and supports by others in and out of the organization and other stakeholders of organization. The mentors should help the mentees to confidently take care of themselves. One most important factor for being an excellent mentor was the good start with every new mentee by knowing one another and building of good relationship, realizing expectation of one another, and identifying the mutual goals. Last but not least was the mentor's ability to realize when the mentoring should end. All these were normally done showing the right way of mentoring

The things to be done by the mentees to gain the highest benefit from mentoring were to note the different behaviors, try out the new behavior, and evaluate the actions.

#### **2.2.6 Educational Supervision for Teacher Development**

According to the Royal Institute dictionary of education, (The Royal Institute, 2010), supervision was referred to the processes and various activities aiming at providing help and guide, and encouraging the individual or group of them. Supervision was the program which included the activities whose objectives were to upgrade quality of the instruction and curriculum. Academics and experts on educational supervision both Thais and foreigners had differently defined the term *educational supervision*. After an attempt to understand them, it would be concluded

that *educational supervision* was a process of management attempting to assist, guide, and encourage the teachers or educational personnel to improve and develop instructional provision by knowing how to choose and improve educational objectives, instructional materials and contents and methods, and instructional measurement and evaluation. It included coordinating with the concerned personnel as well as providing moral supports and guideline to achieve the education professional growth and promoting education to assure its quality at all dimensions to assure the achievement along the expected objectives leading to the quality of students. The supervision process was on the principle of democracy including mutual respect between supervisor and supervisees making the teachers and other personnel satisfied and motivated to develop their instructional provision and carry out any of the school's tasks along standards and maintaining it to have the school accepted by every concerned side.

From the study on learning educational supervision in the United States carried out by Maneesri, Chalee (2005), the meaning of roles and functions, including the clarity and confusion concerning educational supervision that had been changed from the patrolling, controlling, advising, and training teachers to the supervision on democratic bases of using reasons, scientific principles, causal analysis, information collection, and analyzing instruction-concerned problems. The change had made educational supervision having been eventually accepted. It had been more the supervision for instructional development than the supervision on clerical matters.

### **Principle of Supervision**

Boonya, Chat (July 27, 2012: online) had integrated the old meanings and principles of the supervision with the concepts of quality assurance, basic education curriculum, teaching professional standards, and quality levels of the teachers and administrators (NTQ/EMQ) along the modern age supervision that should be as follows:

1. Educational supervision had to respect the individual difference and was the collaboration in using knowledge and ability in carrying out the tasks to achieve the desirable goals.
2. Educational supervision was aimed at helping the teachers to discover their way of duty performance, have self-directing ability, and make decision about their problems.



3. Educational supervision should be the way to gain unique ability of individuals open the opportunity for them to utilize and develop such abilities on full scale.

4. The good supervision had to build up the friendly atmosphere, encourage and create mutual understanding and help the teachers to have the feeling that they would be able to find better way of perform the tasks to achieve the goals.

5. The educational supervision should be done informally without sticking on the specific procedure.

### **Goal of Educational Supervision**

Utranand, Sangad (1987) had stated that educational supervision had 4 main goals whose details are as follows:

1. Educational supervision was to be carried out for developing people. Educational supervision was the process of mutual working between the teachers and educational personnel to assure their change to the right direction.

2. Educational supervision for operational development was the educational supervision that had the ultimate goal on the learners which were the products of the learning process organization of the teachers and educational personnel. Accordingly, the supervision having been set up had to have the goal to develop the tasks of organizing the instructional activities increasing its quality.

3. Educational supervision for relationship building was the educational supervision to build up the relationship between the supervisor and supervisees resulting from the operation mutually carried out basing on the principle of learning exchange, not the operation under the force and checking to find faults with.

4. Educational supervision for building up moral support – This was the organization of the supervision activities that was aimed at motivating and reinforcing the teachers and educational personnel. It was an important goal of supervision as morale and motivation were crucial factors to assure the individual to be attentive in performing his/her duty. If supervision had not built up the morale and motivation for the task performers, activities could fail.

### **Type of Educational Supervision**

Maneesri, Chalee, (1999) had classified educational supervision along the operation and came up with 4 types as follows:

1. Correction Supervision - This was the supervision to find the mistakes to be corrected by variety of methods depending on the extent of the mistake.

2. Preventative Supervision - This was the supervision used by the supervisor to derive variety of methods from his/her experience to prevent the problem that could occur to the target group.

3. Construction Supervision – This type of supervision was aimed at the further growth. It was derived through the attempt to take suitable action to assure the further growth such as regularly using the good instructional method, encouraging the teachers to actively work, providing moral supports, and guide them the way to productively grow.

4. Creation Supervision – Through this type of supervision, the supervisor had used knowledge and intelligence to gain the expected outcome leading the teachers in creating things with less dependency to the outsiders.

### **Educational Supervision Process**

Educational supervision process was the operational cycle with procedural steps to maintain the continuity of the operation from the beginning to the last steps. The process could be set up in form of operational plan and evaluation to assure the operational effectiveness. Harris (cited in Thamavitheekul, Anchalee, 2009: online), had set up the steps of the educational supervision process as follows:

1. Planning Step - This step included the conceptualization, objective up setting, anticipation, schedule up setting, identifying operational method, and laying down the operational programs.

2. Organizing Step - This step was for setting up the standards, compiling resources both humans and materials, linking all the steps together, work assignment, coordinating, decentralizing along the assigned duties, structuring the organization, and setting up the development policy.

3. Leading Step - This step was for decision making, selecting personnel, stimulating and motivating to be creative, demonstrating, advising, communicating, introducing new innovations, and facilitating the operation.

4. Controlling Step – This step was to command, punish, reward, permit, reprimand, and force the compliance.

5. Appraising Step – This step was to judge the performance and research and evaluation on the performance. The major activity was the judging the performance outcomes to check how it had achieved basing on measurement and evaluation that had procedure and validity. There should also be a research conducted along.

From these, it is apparent that the educational supervision process is the operation with standard procedures starting from analyzing the teacher's instructional provision to identify the problems to be solved along their priority and plan to process. Afterward, there would be the action along the guideline following the steps up to the evaluation and using the results for further improvement.

**Supervision Model** - Supervision could be classified into 2 types as follows:

1. Tractive Supervision – Through this model, the supervisor would provide advice for supervisees to use to improve their operation.

2. Dynamic Supervision – Basing on this model, the supervisor would spark up ideas to encourage the supervisees to implement. They could use their knowledge, ability, as well as experiences to improve the instructional provision relevant to the real conditions.

In Thailand, the educational supervision used in foreign countries had been adopted and further developed to fit better with the conditions of Thai society. The process has involved mental relationship. It induced the sincere facilitation to guide the instructional provision along the right direction mutually determined by both the supervisor and supervisee. The model would be used in this physical education teachers' teaching provision competency development model for primary students' health promotion. This supervision model was basing on friendliness developed by Amornvivat, Sumon (2004) emphasizing the guidance and assistance on instruction for fellow teachers. There are 4 main points to be focused by this supervision model as follows:

1. Faith building - The supervisor had to build up the faith to encourage the fellow teachers to accept and be interested in improving the instructional process.

2. Demonstration – The supervisor had to make it clear that the learner-centered instruction could be practical and applied in the real class.

3. Collaboration and learning exchange - The supervisor and supervisees had to regularly meet to collaboratively solve the problems and exchange learning on instructional provision with one another.

4 . Monitoring and evaluation along the process - The supervisor had to regularly record the supervision, observe, and listen to the feedbacks from their fellow teachers and supervisees, examine the problems and set up the solving guideline to create the learning organization in on systematic and sustainable bases.

Goals of this kind of supervision was to develop a learning process composing the steps of heart opening, heart giving, heart pooling, and heart setting. It was a collaborative process aiming at creating quality not quantity basing on democratic principles of mutual respect, between the development giver and development receiver and among the fellow teachers being developed. The process focused on mentoring to encourage and support the target group individuals to provide the physical education instruction to promote the primary student's health with effectiveness. The friendly supervision was composed of 4 factors as follows:

1. Heart Giving – This factor was to build up faith, trust, and acceptance on part of the supervisees for the development. The program started with building up good relationship with the trainees to mutually be determined to achieve the development goals, and increase their awareness on the significance and acceptance of the development that would really have positive impact on the learners.

2 . Heart Pooling – This factor was the team working through the energy pooling to multiply its effect. The participants were sincere in pushing forward the development along the desirable direction. This heart pooling process was important to create collaboration between the developer and trainees to work together in developing, designing, and planning for the learning provision, innovational media, and learning assessment.

3 . Heart Setting – This factor included the persistence, industry, perseverance, and endurance for the development without discouragement to the problems or obstacles, to clearly organize the development program and pursuit along the planned steps. The developers had true knowledge and were with generosity to provide clear advices and guidelines. If problems occurred, they would be determined to mutually solve the problems, taking care and providing moral support for one another.

They created new things and filled up the missing part before analyzing, criticizing, and concluding the solution. The process required persistence, industry, and determination to upgrade and maintain quality of the learners and school.

4. Heart Opening – This factor led to self-acceptance as well as opinion of others both the developers and those being developed. This development had opened opportunity for the fellow teachers to work together in observing the class. Fair comments or criticism was to be accepted by every participants before rethinking about them to use for improving the one's own instructional provision for development and growth of the learners and the teaching profession.

Consequently, in physical education teachers' teaching provision competency development model for primary student's health promotion, the researcher had utilized the friendly supervision which was with mental principles and systematic and clear operational steps in mentoring.

### **2.2.7 Model of Teaching Professional Development of Thailand**

Office of the National Education Commission, (2000), had developed the model for teacher and educational personnel development model along the master plan for teacher training reform and came up with 6 models each of which had the unique characteristic as follows:

1. Self-directed Learning – The mentee teachers created the learning units themselves along their teaching subject both of basic knowledge for everyone and knowledge suiting local needs on which the teachers could register to learn along their interest, need, and present operation. Besides, there had been long-distance learning materials and media to enhance knowledge for the teachers and educational personnel in radio and television forms.

2. Training - Training program was set up for the regular teachers and educational personnel focusing on the learning outcomes for the learners as well as to increase the effectiveness of the operation satisfying needs of the teachers and their affiliating agency. The training approaches included both in class and long distance learning.

3. Study Tour – The study focused on enhancing knowledge and adding up new experiences for the teachers both on issues in general and specific to be adopted for improving and solving the problems encountered in the performing the operation of the teachers.

4. Furthering Education – This was the promotion for the teachers at all levels and types of education to have the educational credential at least bachelor degree and upgrade the regular teachers to get higher educational credential at master or doctoral degree levels to respond to the changes of academic development in various fields. The focus was to develop the teachers along their field of study as well as to develop them to be the thinker, educator, and administrators in the future to come.

5. Participation in Academic Activities – There were variety of academic activities along the interest and duty of the teachers such as academic seminar, activities organized by the professional society or learned organization, publication and presentation, and the discipline promotion and morality development, for example.

6. Personnel Exchange between the Training Institutions and School – The project on personnel exchange should be set up to exchange the personnel of different types of organization to open the opportunity for the lecturers in the teacher training institutions to teach and work in school of various levels and types and for the school teachers, particularly those with expertise, to come to work at the teacher training institutions. However, the schedule for the exchange operation should be appropriate and long enough to acquire the expected knowledge and experience.

In developing the teachers, it was necessary to survey need for the development and design the methods to respond to such needs of individual, group of individuals, or school. Their needs might include the need for improving the present operation, preparation for working along the prescription or standards of skill and attitude for the operation, new approaches and techniques, and, organizational development, for example. The method designed for the development should satisfy certain type of needs such as guiding, recommending, coaching, document reading, self – development, project creation, responsibility change, participation in the seminar, research conduction, study tour, for example. Any teacher developing program had to focus on developing their knowledge and skills to keep up with academic and innovation progress. The teachers had to eager to learn and take academic leading roles

and serve as the good model for schools and communities. Consequently, teacher development was a crucial strategy to promote the teacher's professional progress being able to effectively work and provide learning. Goals of the teacher development, then, had to top up their capacity of be the teachers with quality along variety of contexts in the changing Thai society.

Seyfarth, John T. (cited in Wisalaporn, Sermsak, et al., 2002) had proposed variety of models for professional development. The one which was interesting and could be able to develop the competence of physical education teachers at this time was the teacher network building. Such network would open the opportunity for a teacher to work with other teachers in the activities he or she preferred and developed the subject and students they were teaching. It also opened the opportunity for the teachers to collectively solve problems. The designed network might focus on fact-to-fact interaction or utilize long distance technology to build up electronic networks via internet and e-mail. The teacher network should have an important feature. That is it should focus on the content to teach on and method to teach with. There should be variety of activity such as workshop, seminar, study tour at the model school that had opened the opportunity for the teachers to try the new ideas and have interaction with other teachers. Teachers could perform leadership within their network or school. They had the chance to be close to or touch the problems on instruction more than simply listening the expert's lecture.

**Effectiveness of Personnel Development** - From the study conducted by Wisalaporn, Sermsak, et al., desirable outcomes of personnel development included:

1 . Information transfer - Trainees would obtain information on new knowledge, new instructional method, new administrative approach, and new rules and regulations.

2 . Skill enhancement – Trainees would get the suggestions on specific guideline for operating a certain task.

3 . Behavioral change – New information and new skill acquired by the trainees were expected to be used for learning new thing and led to behavioral change in doing the job.

Professional development activities would have effectiveness or not had to be judged by criteria for the effectiveness of the professional development activities.

The criteria which had been widely acceptable were proposed by Seyfarth, John T., which included the followings:

1. Relevance - The activities organized for personnel development would have effectiveness when such activities had continuity responding to the needs and interest of the teachers. If contents of the development were relevant to the classroom of the teachers, such activities would have continuity.

2. Clear objectives – If both developers and trainees could understand the objectives of the development, they would gain benefits a lot from the development activities. Clear objectives would help the teachers to understand the contents and the development activities had to connect to the operational practice of the teachers.

3. Attractive incentives - The teachers should have incentive to participate in the development activities or incentive to apply new methods into the classroom. The incentive could be in forms of intrinsic reward or extrinsic reward.

4. Application - The development activities would have effectiveness when the trainees could understand the method to apply the things learned from the activities carried out in the classroom instruction. The development activities would be more applicability if they focus on a certain grade or subject.

5. Maintenance – The development activities would have effectiveness when the participants in the activities would be supported in applying the new idea and had problem or difficulties. It was, then, duty of the school administrators in providing support to keep the personnel perform their work to the peak of their capacity and attempt to do it better.

6. Knowledge of the teachers – Effectiveness of the development activities did not depend solely on the trainers having knowledge on such matter, but on the presenting method which should be clear and understandable as well as their ability to influence the instructional behavior of the teachers.

7. Classroom fit - Development activities had to fit the curriculum and were applicable to be used in the classroom without too much time or effort spent by the teachers. The development contents had to fit teaching styles of the teachers and the context and environment of the classroom.

8. Duration - The development activities would lead to the change of instructional behavior of the teachers if they had taken part for a week or month rather



than just a day or two. The activities taking many days would open opportunity for the teachers to try out the new techniques and get appropriate feedback on the operational outcomes.

Effectiveness of the activities on personnel development could be measured by the outcomes in 4 forms, namely, 1) reaction of the teachers evaluated by their opinions and critiques after the training, 2) knowledge of the teachers measured before and after the training to judge how much the trainees had learned from the training, 3) behavioral change of the teachers which occurred after the teachers had applied knowledge and strategies acquired from the personnel development in the classroom, 4) learning of students increases which was the measurement on the academic achievement of students to see if it had increased after the teacher had applied variety of techniques learned from the personnel development in the classroom.

In evaluating effectiveness of the personnel development program, reaction of the teachers was an easiest measure. Meanwhile, it was the least reliable indicator. The enhancement the student's learning was the ultimate goal of student's learning but it was hardest to measure. The personnel development would have the highest effectiveness if it could increase the teacher's knowledge and have the least effectiveness to increase learning of the students. The student's learning would increase if the teachers had increasing knowledge, changed their instructional behavior in the classroom, and had ability on the classroom management. In conclusion, the effectiveness of personnel development would depend on the context, inputs, process, outputs, and impacts on behavioral change of the teachers and development of the student's learning.

Consequently, in developing the instructional provision of physical education teachers along the model used by this research, the researcher had utilized the principle of teacher development toward professionalism: five models of staff development for teacher proposed by Sparks, Loucks - Horsley and used the participatory development model in the development process which was the model to assure the sustainable outcomes in developing the physical education teachers. The model included the systematic and long-term classroom-based planning basing. There was the training to encourage the teachers in acquiring new knowledge through lecture, demonstration, and short time practice. The training activities utilized explanation on

new theories and contents, and new research findings to facilitate the physical education teachers to obtain new perspectives, paradigm, and ideas in designing the instructional provision and physical education activities. The development process was carried out on individual basis to open opportunity for the physical education teachers to take part in planning the instructional units and presenting the work done on the issue of their interest. There was the development process basing on building up the sense of participation along the 7 step on the principle of teacher development toward professionalism. Such sense of participation was developed by the teachers themselves. It was the teacher development on group basis than the individual one using experience of the teachers as the base for development with evaluation during the process of development. The evaluation was also done by examining the instructional plans and classroom instruction and observation on classroom instructional behavior of the teachers, reflection on the instruction, and learning exchange. The teacher development process was sustainable motivating the teachers to be willing to study on and practice the instructional provision to improve student's learning in the classroom. The Project also asked the school for its cooperation in allocating time for the teachers to set up the development plans, creating the facilitative and supportive atmosphere, and motivating the teachers to set up their professional goal. In studying on the effectiveness and efficiency of the development, the focus was on finding the effect of the development on the teacher's competence evaluated by the administrators and experts, as well as self-evaluation. Health of the students was measured by the student's self-evaluation.

#### **2.2.8 Policies on Teacher and Educational Personnel Development in Thailand**

National Education Act B.E. 2542 had recognized the significance of the development of school teachers, university lecturer, and educational personnel. The issue was prescribed in Section - General Provision, Article 9 (4) that prescribed the promotion on professional standards and development of the school teachers, faculty members, and educational personnel on regular basis. In Section 7, Article 52 had prescribed the Ministry to promote the system of school teacher, faculty member, and educational personnel development with quality and standards deserved being a profession. The Ministry had also to control and regulate, and coordinate with the

institution functioning on producing and developing the school teachers, faculty members, and educational personnel to have readiness and strength to prepare the newly recruited personnel and the regular ones on regular basis and the state should allocate sufficient budget and set up the fund for developing these three types of teachers. The Office of the National Education Commission ( ONEC) had to propose the policy-concerned recommendations on teacher and educational personnel development on urgent basis for the education concerned agencies as follows:

1. Accelerating development the quality of instructional provision and teacher management that affected the learner's quality.
2. Promoting and supporting the development of the newly recruited teachers to have the capacity in performing the duty, to have skills, teacherness, and teacher spirit.
3. The school had to set up the systems of supervision, internal monitoring, factors and atmosphere facilitating the teacher's performance, and assign the teaching tasks to fit with the teacher's major, aptitude, and expertise.
4. Realizing the significance of preparing readiness of the teachers and proving supports for the instructional and curriculum media, materials, and documents to effectively manage the curriculum.

Moreover, National Institute for Development of Teachers, Faculty Staffs and Educational Personnel ( 2005) had proposed the guideline for teacher and educational personnel development contending that the development had to aim at the change of the learners. The development had emerged from need of the teachers and educational personnel and had to be the site-based development or school based development. It had variety to be chosen in relevance to individual difference and tasks and duties to perform. It should be operated along the nation-wide network for the convenience in joining either of organizations, individuals, or long-distance. The development had to comply with the policy and regulations of the concerned agency and be comprehensive covering the target groups both inside and outside the Ministry of Education under the budgetary limitation.

The model and method of development were aimed at enhancing competency along the position standards and professional standards either of core competency, functional competency and competency specified by Office of the Teacher

Civil Service and Educational Personnel Commission (OTEPC). Competency, according to McClelland, a psychologist at Harvard University, could be defined as the characteristics of the individual concerning work operation which included knowledge, skills, ability, and others. By these behavioral characteristics, the personnel of organization could perform the job outstanding from the others in the variety of situations. This was due to the individual's motives, traits, self-image, and social role which differed from one individual to another resulting different working behavior. The main competency of the teachers and educational personnel who were government officials at every position included the mutual values and desirable behavior which were melted together. The core-competency of the teachers included the academic achievement orientation, good service, self-development, and team working. Functional competency was competency specified relative to each of the position to enable the personnel who was at the position to have behavior relevant to his or her duty increasing the quality of his/her duty performance. Functional competency of the teachers included the learning provision, learner development, classroom management, analysis, synthesis, and research, and the collaboration with the community.

Consequently, in developing the competency on instructional provision of physical education teachers at this time, there are the concepts on the goals of development on functional competency of the teachers on the issues of curriculum management, learning provision, learner development, and classroom management.

## **2.3 Concepts, Theories, and Principles Concerning Physical Education Instructional Provision for Health Promotion**

### **2.3.1 The 2008 Basic Education Core Curriculum**

The 2008 basic education core-curriculum had been modified to suit the socio-economic change and academic progress requiring the new strategies for education quality development that satisfied the needs of individuals and society and assured the learner's capacity in constructively competing and cooperating in the world society. The strategies were also to implant the learners to have the sense of being Thai and discipline, be concerned with the common interest, and stronghold of democracy

with the King as head of state. The teachers were to have vision on developing all the learners to become the man power of the nation with the balance of body, knowledge, and morality with the sense of Thai citizenship and world citizen. The teachers were to stronghold of democracy with the King as head of state, had knowledge and basic skills including attitude needed for furthering their education, maintaining career, and life-long education, focusing on the learners basing on the belief that everyone could learn and develop oneself to the peak of his/her capacity. An important principle was that the curriculum was the education for the mass to achieve the unity of the nation responding to decentralization inviting the society to have part in providing education relevant to the conditions and needs of locality. It was the learner-centered education aiming at developing the learners to become good man with good intelligence, happiness, capacity to further their education and career maintenance. The curriculum had put significance on developing the learners to have physical and mental health with health habit and love physical exercise and had competency and ability to use life skills which was the ability put all the processes learned into practice in their daily life maintenance. They could learn by themselves on continuous basis, work and coexist in the society by building up interpersonal relationship. They could cope with the problem in an appropriate way, adjust themselves along the societal and environmental changes, and know how to avoid the undesirable behavior that had adverse impact on themselves and others. They had ability in solving the problems and obstacles confronted in an appropriate way basing on reasoning resulted by their ability to think – analytical, synthetic, creative, critical, and systematic thinking to lead to the construction of body of knowledge or the information for appropriately making decision for their own and for the society. They knew how to search for knowledge and apply it in preventing problem or to solve it. They had effective decision making considering the impact on themselves, the society, and the environment. In developing the learners to be well-balanced, one needed to think about the principle on mental development and multiple-intelligence. The basic education core-curriculum had required the learners to learn all of the 8 strands. Health education and physical education was one of them which had prescribed the learning standards on the main goal of developing the learner's quality by identifying what the learners should know and practice aiming at being a complete human in terms of body, mind, social relationship, emotion, intelligence, and competence for health and sports.

The learners were required to study health education and physical education to assure their health or hygiene – the conditions which were complete in physical, mental, social, intellectual, and spiritual terms. Health, then, was important as it had something to do with every dimension of life. Everybody should learn about health to have the correct knowledge and understanding, and appropriate attitude, morality, and values, including skills to practice on health to become normal habit increasing quality of the whole society. Health and physical education was the study on health aiming at sustaining health maintenance and health promotion, life quality development of individual, family and community. Health education focused on facilitating the learners to develop their behavior on knowledge, attitude, morality, values, and practice concerning health altogether. Physical education focused on facilitating the learners to use the activities, movement, physical exercises, game play, and sports as the tools for developing body, mind, emotion, social relationship, intelligence, as well competence on health and sports. The contents of the health education and physical education strand using the framework for developing competency for instructional provision of physical education teachers to promote health are as follows:

Strand 3 – Movement, physical exercises, game play, Thai sports and universal sports

- Standard PE 3.1 – understand and have skill on the movement, physical activities, game play, and sports
- Standard PE 3.2 – love physical exercise, game play, and sports on regular basis, have discipline, and respect rights, rules and regulations, have sportsmanship, competitive spirit, and appreciate health and sports aesthetics

Strand 4 - Health promotion, competence, and disease prevention

- Standard PE 4.1 – Realize values of and have skills on health promotion, health maintenance, disease prevention, and enhancement of the competence for health.

Moreover, the curriculum had prescribed quality of the learners upon their completion of Prathom Suksa 3 as follows:

- Have knowledge and understanding on human growth and development, factors affecting growth and development, and approaches in building up relationship in the family and peer group

- Have good health habit on eating, recreation, sleeping, cleanliness of every body part, plays, and physical exercise
- Prevent oneself from having behavior on narcotic substance use and sexual assault, and know how to refuse the inappropriate matters
- Control their body movement along developmental tasks of each age level, have basic skill of movement, and participate in physical activities, and activities to build up physical fitness for health and game with enjoyment and safety.
- Have skill in choosing what to eat and what to play to promote good health, and avoiding and preventing oneself from the accident
- Behave oneself in appropriate way when confronting with emotional and health problems
- Comply to the rules, regulations, agreement, suggestions, and procedures, and lend cooperation to other with willingness to assure the operational success
- Actualize one own rights and respect rights of others while engaging in the group game

The quality of the learners after completing Prathom Suksa 6 was prescribed by the curriculum as follows:

- Understanding about relationship among body systems and knowing how to take care of the main part of such system
- Understanding about nature of changes on body, mind, emotion, and social engagement, sexual drive of male and female when approaching teen age and ability in adjusting in appropriate way
- Understanding about and realize the value of having good life and warm and happy family
- Being proud and realizing the values of one's own gender and maintaining sexual hygiene in appropriate way
- Protecting oneself from the risk factors and avoiding risk behavior against good health, infection, accident, violence, narcotic substance, and sexual assault
- Having skills in basic movement and controlling oneself in integrated movement
- Knowing the principle of movement, being able to choose to take part in the physical activities, game, folk play, Thai sports, and universal sports with safety and

fun, and having sportsmanship by complying to the rules, regulations, and their rights and duty to get the work done.

- Planning and practicing physical activities and physical fitness activities for good health on appropriate and regular bases
- Coping with emotion, tension, and health problems in appropriate way
- Having skills to search for knowledge, information, and news for health promotion

The indicators on physical education curriculum had required Prathom Suksa 1 – 3 students to control body while staying still and while moving utilizing simple instruments, participate in the physical activities and low organized games with safety, and describe the usefulness of body exercises and play low organized games that benefitted health, do physical exercise, take part in physical activities, folk play, and games along one's aptitude and interest with fun and safety, complying to the rules, regulation, and, agreement, have discipline during the play, maintain cleanliness, store sports equipment in order, and enhance physical fitness along the guideline.

For Prathom Suksa 4 – 6, the focus was on controlling body movement while staying still using some equipment, controlling oneself while using skill for integrated movement while staying still or moving with or without equipment, physical exercise with music, playing games toward sports in which one played at least a type of basic sport and improved skill, mechanism, and ability in engaging in the physical activities, games, folk play, and sports, through observation and practice the physical exercise, games, and sports that they liked on regular and active bases, complying to the rules and regulations along each of the sports and being concerned with safety of oneself and others, learning to loose, to win, and to forgive, maintaining unity while playing game or sport, and enhancing and improving physical fitness for health on continuous basis.

### **2.3.2 Principles of Physical Education Instruction**

From the Dictionary of Education A-L & M-Z, published by The Royal Institute (2008), learning was referred to the learning process or method an individual used to make sense of the information and stimuli acquired through sensory perception enhancing knowledge and understanding, skill, attitude, feeling, and desirable behavior. Learning occurred at any place or time from one's experience, practice, and training in



both formal and informal ways. The instruction was referred to the organization of the process to transmit information, knowledge, concepts, feeling, attitude, values, including various skills by the teacher to the learners or from one individual to another through telling, describing, explaining, notifying, demonstrating, or others relevant to the objectives and situation. The process could be carried out at any place or time not just in the class and schedule. It focused on role of the teacher in organizing the activities that facilitated the target group behavioral change and building up the interaction between teacher and learners.

Hongsawong, Panudej ( 2005) , had also provided the definition for the term instruction which was referred to activities or programs organized and carried out inside and outside the classroom aiming at the learners acquiring learning and behavioral change leading to the development on knowledge, skill, and attitude. Instruction was the term including learning and teaching. Typically, learning was the role of learners and teaching was teacher. How well the instruction was carried out and had effectiveness of not depending on many factors both of internal and external ones. Internal factor was the readiness within the learners which included need, interest, and intelligence. External factors were the teacher's personality, environment, skill and teaching techniques of the teachers which had a lot of impact on the learner's learning. The important factor creating learning and its term had served as the indicator of the instructional quality was experience. Thus, the setting up of the learning conditions, situations, or activities would facilitate the instruction to effectively go on.

Moreover, another definition of instruction describe it as the transmission of knowledge, the training for the learners to know how to solve problems, the creation or setting up of the environment, activities, or situation to enable the learners to derive learning, and provision of guideline for the learners to study and gain knowledge (Pornkul, Chanathip, 2000). It was the learning provision that focused on the learner's experience, contending that the learners had to participate in the instruction not solely taken care of the teachers or the teacher-centered instruction. The process was to transmit knowledge, skills, and attitude with preparation and planning along the principles with the procedural steps and instruction along the clear plans with the goals at which the learning provision was aimed. The learning provision had to include variety of interaction, namely, between individuals and media and between individual

and individual. Instruction could occur at any time or space not just in the classroom. The good learning was of the 360° dimension. For Chaitiang, Arporn (1997), instruction was the process of interaction between teacher and learners to facilitate the learners to have behavioral change along the instructional objectives which required both science and art of the teacher. Characteristics on instruction from the definitions of instruction as mentioned could be summarized into 3 points as follows:

1. Instruction was the process of interaction between teacher and learners on regular and continuous bases along the procedural steps to assure the learner's learning or behavioral change which enabled the learners to gain experience.

2. The instruction was aimed at facilitating the learner's behavioral change along the objectives set in the instruction three domains of objectives were set to make the instruction comprehensive and the students could apply their new experiences. The three domains of the target behavior were: 1) knowledge and thought or cognitive domain by which the learners had intellectual growth developed from not knowing nor understanding and not knowing how to think to knowing, understanding, and knowing how to think, 2) attitude or affective domain by which the learners had development on feeling realizing the value of goodness and beauty, 3) skill or psychomotor domain by which the learners could do things along the age.

3. The instruction that would well achieve the objectives had to depend on science and art of the teacher. It was the focus on competence of the teacher both on knowledge (science) and teaching techniques (art). Both were significant factors of the instruction to assure the learner's behavioral change along the set objectives.

Instructional factors included both the general factor which formed instruction and sub-factors that helped complete the instruction with effectiveness and value for the learners as follows:

1. General factor was referred to the structural factors and instruction which included teachers or lecturers, students or learners, and curriculum or what to teach.

2. Sub-factor was referred to the instructional details composed of 5 processes to make instruction complete. These are:

- 2.1 Instructional objective setting – This is the first factor of instruction to keep the teacher informed of what to teach for to produce what behaviors of the learners to what extent. Meanwhile, the objectives would guide the teacher in

preparing the instruction – in choosing the teaching method, instructional media, and measurement and evaluation.

2.2 Content prescribing – This was referred to the selection and prioritization of the contents making the teacher know what to teach and to what extent, what experience the learners should get and when, at what extent. The prescription of the content in advance would make instruction essential, worthwhile, and valuable to the learners.

2.3 Instructional activity arrangement – This would help the teacher to know how to teach, what instructional methods should be used, or what relevant experience, and features of the subject content, the learners, and the classroom, and their congruence with the set objectives.

2.4 Instructional media utilizing – This was significant to make the teacher know what to use to facilitate the learners to learn the best, with clarity, and faster, simulate their interest, make the instruction smooth, facilitative, and flexible for the learners.

2.5 Measurement and evaluation – This would keep the teacher informed if any how much the instruction so far had achieved the objectives set or which one that had not been achieved enabling the teacher to correct the mistake at the right points benefiting both the teacher and the learners. The teacher had to evaluate the learner's learning every time she or he taught.

Instructional Model – This was the planned form to the instructional operation which had been systematically organized along learning and teaching theories and principles and such model had been proved to have effectiveness and could help the learners to obtain learning along the specific goals of the model. The instructional process had unique features by which the teacher could use to organize or carry out other instructions which share similar goals. Meanwhile, teaching method was the procedural steps used by the teacher in facilitating the learners to learn along the objectives set through various methods along the factors and steps unique for and could not be missed out from that particular method. Teaching skill was the ability to carry out various aspects – planning, design, organizing, and providing learning, teaching methods and techniques, instructional model, instructional system, instructional, media

and instruction evaluation including the use of theories and principles of learning and teaching (Khammani, Tisana, 2007).

Physical education instructional provision was for physical education which was a subject that enables the learners to have many dimensions of growth development including body, skill, knowledge, morality, attitude, and competence for health maintenance and sports using physical education and sports activities, body movement, physical exercise, etc. that had been well selected as the media for learning. In the process, the learners had to participate or put into practice by themselves to assure the expected results (Kuna-apisit, Wasana, 1996; Siriprasert, Jiraporn, 2000; Pienchob, Vorasak, 2005; and, Ministry of Education, 2008). Thus, physical education instructional provision was referred to the process, activities, and program planned and designed by physical education teachers using teaching methods and techniques, instructional models, instructional system, instructional media, instruction evaluation as well as learning theories or principles including various instructional methods to be operated both inside and outside classroom with the same ultimate goal of having learners taking action on the play and practice by themselves resulting their five dimensions of development at the same time, namely, 1) Physical development – to have strong and healthy body, 2) Skills – to have ability to play sports and do it during their free time with fun, 3) Knowledge – to have knowledge and understanding on the basic principle of sports playing and physical exercise and ability to do it with safe. 4) Morality – to have discipline, love in sports, unity, sportsmanship, 5) Attitude – to have good attitude toward physical education and sports as well as physical exercises, love and realize the values of physical education, sports, and physical exercise, leading to play sport and physical exercise along the sports ideology everyday.

**Philosophy of Physical Education Instruction** – It was the set of values, principles, methods, and theories on physical education that had been analyzed, experimented, proved, screened, and cautiously examined to assure the validity and had been accepted by physical education circle that they could be used as guideline for organizing and operating the physical education instructional provision in school with effectiveness. The instructional philosophy of physical education contented that was it was the instruction aiming at making the students the complete human. It was instruction that facilitated the students to have development as well as physical fitness facilitating

them to have comprehensive health with basic movement and sports skills to play sports during their free time along their capacity, knowledge and understanding on the body movement and sports skills enable them to do physical exercise and play sports with safety. On morality, the instruction was to equip the students with discipline and sportsmanship. They were facilitated to have good attitude toward physical exercise and sports playing using knowledge and experience gained to play sports and do physical exercise on daily basis (Pienchob, Vorasak, 2005).

**Principles of and Instructional Methods for Physical Education** – This was referred to the principles, methods, and techniques of physical education used by the teachers as the media to integrate the subject content, activities, and experiences as well as the atmosphere and environments to stimulate the students to play and take part in the practice by themselves in variety of physical education activities to achieve the development prescribed by the learning objectives of the physical education instruction.

Physical education instruction had objectives to promote physical, mental, social, and intellectual development. Consequently, the instruction had to choose the activities and teaching method relevant to the objectives mentioned above. In general, the objectives would cover the following ones:

1. To encourage the students to have competence on body including strength, patience, speed, agility, flexibility, muscle power, and balance.
2. To encourage the students to have variety of sports skills use benefit them in daily life. Success could, in turn, reinforce the person to continue playing such sports.
3. To encourage the students to have knowledge and understanding on rules and regulations, and manners in playing various kinds of sports and, the most important was to encourage them to become a good player and audience at the same time including the studying skills.
4. To encourage the students to have sportsmanship that would make them learn to loose, to win, and to forgive, with unity and harmony, love, generousness, leadership, and followership.
5. To encourage the students to have attitude toward physical exercise for their healthy body and facilitate them to choose the activities that were good and benefited their health and hygiene.

**Teaching Methods for Physical Education** - The physical education was the subject that was very unique in its aim at making the students learn and develop along many dimensions of objectives simultaneously. Some teaching methods to be adopted had to be adjusted to fit the subject and condition of the physical education instruction. These included lecture, lecture along with demonstration, putting to practice, assigning work or project for the students to or studied, homework, experiment, question and answer, using texts, problem solving, teaching how to maintain physical fitness to develop sports skills and teaching to discover one's own movement techniques, for example.

In providing effective physical education instruction, one should be concerned about the following points:

1. Subject contents - The teachers had to have knowledge on the subject contents of the subject to assure the students having knowledge, understanding, and good attitude.
2. Instruction preparation – The teacher had to consider the need and readiness of students for learning, choose, carry out the activities relevant to gender, age, and ability of the students, set up the instruction to directly suit subject contents, and prepare the needed materials and equipment.
3. Physical education instructional principles – These would guide the teacher to keep the students informed about the goal of and benefit to gain from the instruction to keep them interested in the learning. The teacher's verbal explanation or order had to be clear, understandable, and logical with appropriate verbal technique. In carrying out the instruction, the teacher had to encourage the students to take part in the activities as much as possible. Audio-visual aids should be used to facilitate the instruction. The students should be taught to have experience in the success along the law of effect to keep them satisfied with learning the skills by giving time for and number of exercise considering the rate or curve of the learning of each of them. How much student's learning would be effective depended on the teacher's feeling which should be fun and could recognize what student's doing was right or wrong and how. The students should know the results of their learning through the evaluation which could be used to motivate them to learn further.

4. Application – From the sports skill Instruction, students should benefit from apply what they had learned into their real life situation, such as, in their free time which should be utilized by sports playing, school internal sports competition to open for the students to use the skills learned in the competition. Moreover, the impact of the sports skill instruction skill should be the long-term one.

Part of physical education instruction was on the content. Nonetheless, the most important thing was that how effective the teacher's instruction would be depended on the instructional methods used by the teachers in carrying out the physical education instruction to achieve the goals set by the curriculum. Physical education teachers had to have readiness on the following aspects as follows:

1. Teacher's instruction preparation - The physical education teacher should prepare things including the teacher him/herself, students, and equipment, materials, and facilities.

2. Physical education class organization - Good program should be set up for physical education instruction to assure the student's discipline and achievement along the goals expected and had fun and satisfaction as well as the experiences valuable to their life. A good teacher had to spend time on designing the instructional plan from the beginning until the end of the class.

3. Time organization for classroom physical education - It was necessary to organize the schedule for physical education on the time utilized for the student's learning the most including sufficient instructional equipment and facilities with good quality, places suitable and relevant to nature of the activities, student's group in which there was control and regulations both for all the whole class and small groups, facilities for special purpose such as dressing room and lavatory.

4. Accident prevention during physical education studying – There was the creation of preparation of the safe field or inside spaces, matching the activities with the facilities and class size, closely watching while students were practicing and playing, regularly warning students to be aware of the accident that could occur at any time if not following the rules and regulations set, organizing training or workshop on accident prevention for the students, checking and getting rid of the barriers or objects on risk of accident, always checking equipment and facilities to assure their quality and safe use, and having knowledge and expertise on first aid during emergency.

5. Name calling during teaching physical education - the teacher had to have duty and responsibility for students to assure their order, safety, and attendance by calling their name. Name calling suitable to the physical education class was to have each student calling up his/her personal class number and enter his/her group before the group leader would check attendance of the group's members. The method would speed up the process and, at the same time, build up good leadership and followership onto the students and train them to be responsible along. Calling name of each student would facilitate the teacher in knowing the students individually and create familiarity in the class. It would take too much time if the class was very big. Anyway, the teacher should stronghold on the principles of time saving, reliability, and validity, without any confusion.

6. Advantages of good classroom management

6.1 It assured the highest usefulness and effectiveness of each instructional period as it had time constraint. Good classroom management would lead to the smooth operation of the instruction and assure its effectiveness and time saving.

6.2 It assured safety for every student - Each student would comply the rules and regulations set such as standing in line, walking up or down the stairs, entering the cloth changing room in order, etc.

6.3 It set up the atmosphere and condition to get set for the instruction - The students would be well informed where and how they would line up after they finished their cloth changing.

6.4 The students could be trained to comply to the rules and regulations set on daily basis to promote their self-discipline and activeness in their study.

6.5 It encouraged the students to maintain responsibility to oneself and others. The students could realize that he or she was a part of the class. It not complying the rules and regulations set, bad consequence would fall on every one of them. Each of them, then, should take the common responsibility.

6.6 It promoted the good relationship between teacher and students assuring the good learning atmosphere in the classroom and on.

6.7 It had crated unity in the classroom. Every student would feel comfortable and had familiarity in the class.



6.8 It had recognized the needs and interests of each of the students in the classroom and the satisfaction of such needs and interests.

6.9 It had enabled the teachers to use time and use ability to facilitate the student's achievement to the peak of their capacity.

6.10 It had opened the opportunity for the teachers to manage the classroom for the students to gain learning to their best.

### **Physical Education Instructional Process Design**

The physical education instruction had focused on learning through the processes of body movement, physical exercises, sports playing, and the likes. The instructional process had to always cope with the skills on body movement mechanism. Steps of physical education instruction, in general, had been set into 5 steps as follows (Samahito, Supitr, 1992):

#### **Step of Warm Up**

This step was regarded significant before the students to heavily do physical exercise. The body's function had to stimulate to assure the muscles, bones, joints, internal body system such as functions of the heart and blood circulation to assure the body's readiness to heavily function. Moreover, the body warm-up had primarily stimulated the brain's learning assuring more effectiveness and quality of the learning. Normally, it would take 5-10 minutes resulting to the pulse rate of 100-110/ minutes.

#### **Step of Explanation and Demonstration**

The introduction to the lesson had stimulated the interest of the learners which could be done through story-telling, question answering, or opinion expression on the things to be learned to encourage the learners to think and dare to express. The process could be done through the use of photos, slides, movies, etc. to connect the prior knowledge with the things to be learned. It normally took 5-6 minutes. Explanation and demonstration were regarded significant for the process of skill learning as they would enable the learners to know the method and see the movement gesture, think, analyze, differentiate, and, master the whole set of skills. In explaining and demonstrating, the teacher could assign the students to act out or do it by the teacher herself for students to observe. At this step, there would be discussion and questioning to check the student's knowledge and understanding to enable them to

differentiate between right and wrong before furthering the discussion. The process could also incorporate knowledge into the learning.

### **Step of Practice**

Practicing was the crucial activity for teaching physical education as it would help the learners to achieve the main objectives of the instruction. Before this, the teacher had to prepare the practice approaches appropriate for the things to learn, the learners, time, place, and facilities to be used for the instruction, and how such activities were to be carried out. In general, practice would take 20-30 minutes. At this step, game or play could be used for the competition. In practicing sports skills, for example, the students would be encouraged to use their sports skills to play game and do other activities to open the opportunity for them to use their skills and have fun at the same time.

### **Principles for Carrying Out the Practice**

1. Every learner should have the opportunity to participate in the activities as much as he or she can so that they would not need to stand in line waiting for playing the game. The students should also engage a lot in the movement activities to distract them from having nothing to do and engage in other non-sense activities than the lesson.
2. Practice could start from basic skill and move further to harder or more complex appropriate to the student's capacity and age. The practice could begin with the staying still skill before movement skills and without tools before with the tools, and on separate parts before dealing with the whole. The tools used in the instruction should be effective and workable.
3. The teacher had to observe and paid attention to every student or group of students to see if there was anything wrong which, if found, should be corrected right away. If most of the students had made something wrong or used the wrong skill and there was no correction, there would be some negative consequence in the long run.
4. The instruction should of the child-centered one opening the opportunity for students to take role and to practice good leadership and followership, helping one another, and contributing to the work of common interests.
5. The instructional activities had to be interesting to and challenging the student's ability. They should not be too easy or difficult for the students who had engaged them with joy and happiness. Everybody could have all kinds of movement in carrying out the play and learn.

### **Cool Down Step**

This step followed the practicing step. It was the time for students to relax their muscle from the practice and play. The goal was to reduce the pulse rate down to normal. In general, the activities popularly used were stretching, breathing in breathing out, slowly rhythmic movement, for example. Normally, the cool down would take about 5 – 10 minutes.

### **Concluding and Evaluating Step**

This was the last step of each instruction. After the cool down, the teacher would spend 5 – 10 minutes to conclude the lesson through questioning, analyzing, and observing the lessons and contents of activities if there were any advantages or problems or obstacles, what to be improved, including the recommendations and opinions mutually made by the teacher and students taking 5 – 10 minutes.

Thus, it could be seen that during the process and procedural steps of physical education instruction, the teacher could develop the learners in every aspect. Nonetheless, it depended on the teacher's knowledge, experience, ability, techniques, methods, and creativity in searching for new knowledge to apply in the instruction aiming at developing the student's body, mind, emotion, social competence, and intelligence on effective basis.

### **2.3.3 Measurement and Evaluation for Physical Education**

Learning measurement and evaluation were the important parts of teaching and learning process. They should be operated along one another. The evaluation was also needed to be integrated with the learning provided to the learners. The results could be used for developing the learners in various ways such as the feedback information could be used to follow-up and manage the progress of the learners. It could also be used to modify the guideline on organizing the activities to suit the individual learner making him or her realize his or her ability and develop his or her learning continuously. It focused on the learner's knowledge, morality, and learning process utilizing variety of methods relevant to the process of learning organized for the learners along or close to the authentic situation clearly reflecting the learner's ability and performance.

## **Principles and Philosophy of Physical Education Assessment**

Principles and philosophy of assessment in physical education was also the same as those in other subjects. It has to assess along learning objectives, learning indicators, and standards set by the curriculum for each grade. The teacher had to analyze the learning objectives along the learning strands and standards. Principles and philosophy of physical education instruction suggested that the subject required students to acquire learning through action or practice by themselves. When students put into practice by themselves, they would gain development or learning on every aspect simultaneously, namely, body, skill, knowledge, morality, and attitude.

## **Physical Education Evaluation and Measurement**

Measurement for evaluation in physical education was to find the quantitative terms of development occurred within the individual student along the principles and process of teaching and learning in physical education basing on the learning standards and objectives prescribed by curriculum. Then the quantitative results obtained from the measurement to evaluate by comparing to the criteria and standards or others existent evidences to check if the results were due to the instructional process and at what level, and if there were any points to be improved or corrected. In evaluating the physical education learning, the teacher would give out the score of the student after the practice period and level of score at the end of the semester or study program.

## **Purposes of Measurement for Physical Education Evaluation**

Physical education measurement could be done on many aspects but most of them would aim at the following objectives:

1. To encourage the learners to have interest in the lesson, better knowledge and understanding, effort to study and do exercise, and train themselves to gain higher expertise
2. To keep the teacher well informed about the progress of the learners and keep the learners informed about their progress and state of their learning
3. To keep the teacher well informed about the state of his/her instruction to how it was, how to improve it, and, and to guide the learners to improve their learning methods along

4. To use the evaluative results as the guideline to classify students to organize the classroom and group the students basing on their ability that was clearly observable.

5. To use the evaluative results as the guideline for setting the standards for comparing the learner's learning outcomes for the future to come

6. To use as the criteria for scoring the learner's performance after finishing the semester or study program to keep the teacher, the learners, or other concerned individuals informed if and how much, after finishing the subject or study program, the learners had achieved the set goals

### **What to be Measured and Evaluated in Physical Education**

Samahito, Supitr had stated that the learning results in physical education expected to be acquired by the learners should cover knowledge, attitude, morality, values, health practice, and competency, as follows:

1. On knowledge - Knowledge could be divided to knowledge on learning, knowledge on process, and knowledge on context covering the individual's ability to use his/her thinking and intelligence to solve the problem, use imagination, and creativity.

2. On skill - Physical education study program should focus on having the learners to gain learning from the real practice. The results of practice were obtained through process basing on on brain-based learning principle contending the brain was the base of the individual's performance. The teacher should, then, evaluated both process and the products of what the learners had done and shown on morality, ethics, values, and other desirable characteristics. Assessment on morality and ethics had to be continuously carried out at all time to obtain the information relevant to the real conditions of the learners. Consequently, variety of measurement and evaluation methods, such as learner's self-evaluation, evaluation by fellow teachers, and parents, for example, should be used.

3. On attitude - Learning outcome would be acquired and sustained by the learners had been related to their attitude encouraging them to realize the value and usefulness of, to accept, to be able to choose, and to be interested in sports and physical exercise, and regard physical exercise a part of their life.

4. On physical fitness – The learners should have knowledge and understanding on the methods of building up their physical fitness and their health onto their life by the physical exercises appropriate to build up their physical fitness. They should regard it a significant part of life quality and could identify the appropriate pattern of their physical exercise, evaluate, and realize the value of having physical fitness.

5. On social development - In general, in engaging with physical exercise, plays, and sports, one would always have friend and others who had participated in the activities. Physical education instruction in school could build up social relationship and encourage individuals to behave themselves in participating in the play or competition under the same rules and regulations enabling the learners to learn to adjust themselves on cognitive and emotional aspects and have understanding, patience, friendship, and good relationship with others.

Consequently, in this research, the concepts, principles, and theories mentioned above would serves as the factors and contents of physical education instruction to promote student's health.

## **2.4 Concepts, Theories, and Principles on Health Promotion**

### **2.4.1 Meaning and Significance of Health Promotion**

This research on developing competency instructional provision models of physical education teachers for promoting primary student's health focused on 4 aspects of student's health, namely, body, mind, social competence, and intelligence. The research had surveyed the concepts concerning health promotion. The 2008 basic core curriculum had defined the term health as well-being or wellness which came up on integrated and balancing bases including spiritual, social, physical, and mental dimensions. The concept had not referred only the being without impairment nor disease, but it also included the concepts of health behavior and self-care taking to encourage the individual to realize his or her health. This might be regarded as health intelligence reflecting the individual's health consciousness, knowledge on health, and health condition of individual, and community and environment. The health intelligence would reflect the ability of the individual in choosing way of doing concerning health, safety life maintenance to assure one's physical and mental health as well as the good

environments, healthy living, including the good personal health. It was believed that those who had good physical health would good mental health to lead their life to the success along the 9 factors of good health, namely, physical exercise for health, nutrition-based food consumption, keeping oneself away from narcotic substances, personal health maintenance, disease prevention, life safety, environmental health maintenance, and stress and emotion management. To have comprehensive good health to maintain life safety and happiness along the life span, Thais should know and realize the significance of health intelligence since when they were young to accumulate good health. A Buddhist saying contended that “Being without sickness is the best fortune.” Another blessing often made by monks or aging people was “Long live, nice skin, happiness, and physical power” which wished the people to have mind-fostered life, nice skin, happiness without stress and pressure, strength, and good health ( Intarakamhang, Ungsinun, 2009).

Moreover, World Health Organization (WHO, 1986) had stated that “Health is a state of complete physical, mental and social well-being not merely an absence of disease and infirmity” recommending the process to enhance capacity of individual in maintaining and improving his/her health in physical, mental, and social terms. Moreover, it was the process to enable people to respond to their needs or desires and cope with the environments surround them. Professor Dr. Wasi, Prawase (1998) had defined the term “health” as referring to “health conditions or condition of happiness both in physical, mental, and social terms, not only with no sickness or impairment.” Later, the World Health Assembly held in May, 1998, had agreed to add the phrase “spiritual well-being” into the former definition. Hence, according to WHO, health was referred to well-being or the condition of being happy. The people’s happiness in physical, mental, social, and spiritual terms was the ultimate level of human happiness. This level of happiness reflected the individual’s achieving self-actualization. Meanwhile, the person had to be free from sickness or impairment and was able to maintain stability. WHO had placed significance on both the people and the environments both of internal and external one. It was the holistic concept of the term health.

Ottawa charter, meanwhile, had defined the term “Health promotion” as the process to enhance competency of the people to enable them to take care of and

improve their own health. To the charter, health had positive connotation emphasizing human resources and society as well as various competencies of the body. The term health promotion had been translated into Thai and had been unanimously accepted. Health promotion emphasized the operation on service provision of the public health personnel for health of the mass. The meaning had become more inclusive serving as a strategy to mass healthy. At the present time, the term "health promotion" had implied "the construction" meaning the constructing something new. The term "Promotion" was referred to the enhancement which everyone or every side could be able to do and do it together though some might have to wait for the "promotion" from others. The Thai term for "health promotion," according to the 2001 Fund for Health Promotion Act, was referred to any operation aiming at facilitating the people to have physical, mental, and social health, by supporting the individual behavior, social conditions, and environments leading the individual to have strong body, good mental health, long live, and good life quality. Thus, health promotion was referred to the process to enhance health of and encouraging individuals to practice and develop health as well as managing the factors and environments that had impacts on health to achieve the state of having good health in physical, mental, social, and intellectual terms, and could co-exist happily in the society.

### **Significance of Health Promotion**

Health promotion was regarded the crucial foundation of life enabling humans to normally maintain their life with good life quality. At the present, the concerned agencies and organizations had progressively operated using variety of processes to enable individuals to take care of their health to the peak of their capacity through the collaboration of individuals, families, and communities resulting the physical, mental, social, and intelligence health of every age group of people. Health promotion, then, should not solely be the responsibility of any particular organizations in the health sector but all of those concerning health of individuals in the family, community, society, and nation.

Health promotion is significant to life maintenance of individuals who have wanted perfect good health which served as the capital for engaging in the activities and tasks in their daily life along the roles and responsibility on effective



basis. It is apparent that the health-concerned operation at the present has changed to creating than repairing health from the former focus on defensive health system by which people has waited until getting sick before being sent to repair or heal. Such practice has accounted for the fact that a lot of Thai people often get sick and die before they should resulting huge amount of economic loss. The contemporary concept is of a defensive system advocating variety of attempts to maintain good health as much as one can. Everyone has to have knowledge on health and behave oneself or have right health behavior by doing everything to keep oneself happy and avoid risk behavior or constrain from taking risky or health endangering behavior. People should regularly do physical exercise, eat along nutritious principle, be careful not to consume unsafe food without toxin contamination, maintain mental health, manage stress, and reduce the risk by preventing and avoiding narcotic substances and all vices having been taken as the health promotion issues by the health-concerned agencies and operation all along. At the present, there have been the attempts to continuously campaign on health building making the public aware and behave themselves in increasingly taking care of their own health. All these are the efforts of health promotion. If it had been continuously campaigned, people would not easily get sick of disease. If they do, it would be only with the easily healed, or non-contagious, and the ones associated with way of life such as coronary heart disease, hypertension, diabetes, and metabolic syndrome, for example. Without all these diseases, people would have good health, prevent themselves from them, and could save money on the healing.

Health promotion is significant at individual and societal levels encouraging people to take care of their health, reduce risks of contacting disease, reduce morbidity rate, and death rate from the preventable disease, reduce the expenses on medical care of the individual and of the country, increase opportunity for the individuals and society to save the expenses, facilitating people to have good life quality and society to have better living standard.

#### **2.4.2 Principles of Health Promotion**

Principles of health promotion to promote health-caring behavior proposed by Professor Dr. Prawase Wasi (1998) were as follows:

1. Regular physical exercise could help maintain physical strength and cheerful mind, and prevent many diseases such as heart disease, coronary artery disease, diabetes, and allergy, for example.
2. Proper or moderate food consumption to obtain sufficient for nutritive value and proportion, eating a lot of vegetables and fruits to help heal metabolic syndrome, diabetes, heart disease, cancer, Alzheimer, etc.
3. Avoiding risk behavior on four issues at least, namely, cigarette smoking, drinking too much alcohol, promiscuity, and risk behavior of accident and danger.
4. Building up life skills to peacefully co-exist and having ability to cope with the negative social situation such as pressure or persuasion to have risk behavior.
5. Setting up the environment that facilitate health in all aspects – physical, biological, and social ones, making them peaceful and clean without any pollution but safety and care for one another.
6. Having ways for spiritual development along variety of methods to guide people away selfishness toward good deeds such as playing, learning, religious interest, getting together, kindness maintaining, nature touch, etc. leading to accessing spiritual happiness enhancing the individual's health.
7. Having good learning approach making learning joyful but intellectual, free, and enhancing one's motivation to learn.

### **Health Promotion for Physical Activity and Exercise**

The World Health Organization had defined the term “physical activity” as the body movement in any form resulted from the function of muscles requiring energy. The current medical knowledge had pointed out that appropriate physical activities would help promote good living both in terms of physical and mental health. It would also lead to disease prevention, social linkage and life quality providing economic benefit and contributing to environmental sustainability.

At the present, technological advancement and urbanization have led people to increasingly stay still and sedentary way of life. Moreover, community had been designed in the way that requires transportation vehicles leading to less physical activities in daily life of people. The confusing life mode and competition had changed the structure and function of family lacking the connection to the society could be a

cause of physical activity shortage and the continuous decrease of the opportunity for physical activities. Meanwhile, in most countries, people increasingly have sitting still life styles resulting negative impact on health, society, and economy. Having majority of people in the country increasingly with sitting still life styles could adversely impact the individual's health, society and economy as follows:

Concerning health, it had been found that insufficiency of physical activities was the fourth case of death from chronic disease such hearth disease, coronary heart disease, diabetes, and cancer accounting for the death per year of more than 3 million people all over the world caused by the diseases otherwise preventable. The lack or insufficiency of physical activities had partly increased the rate of metabolic syndrome among young people and adults. Moreover, physical activities could also benefit the population of all ages reducing their risk on getting chronic disease and help maintain mental health of the adults.

Concerning sustainable development, the promotion on travelling that utilizes energy such as walking, biking, and using mass transportation could reduce the pollution in the atmosphere and the release of green-house gas affecting health. The new age of urban design and development was aimed at reducing the motor uses leading to more physical activities on part of the people.

Concerning economy, physical activities had a big part in reducing the cost of health service provision both directly and indirectly leading to life maintenance with good health. The policy and operation that increased the participation in physical activities were the powerful investment for preventing chronic disease, and developing public health, social relationship, and good life quality.

At the present, it is evident that physical activities are necessary for health and well-being of individuals. It is regarded significant factors of daily life of the people along with eating well nutritious food, no alcohol drinking nor cigarette smoking and constraining from all kinds of narcotic substance. There had been scientific evidences and societal experience that confirmed the usefulness of physical exercise and sport playing for health of the people of every gender and age who would gain benefit in social, emotional, and mental terms which also related to cigarette and alcohol reduction and appropriate eating. It also helped reduce violence and increase the level of social interaction. The World Health Organization had contended that physical activity had contributed to economy and

sustainable environment development. Any community that had carried out the health promotion by encouraging variety of physical activities to assure the accessibility of the target group and affordability of target group for all of their life time would succeed in helping them achieved such health outcomes.

### **Types of Physical Activities and Exercise**

Physical activity was the body movement in any form emerged from the contraction of large muscle causing the body to use more energy than when the person sat still. This had something to do with health and physical fitness of the individual. Physical activity could be divided into 2 main types as follows:

1. Daily Life Physical Activity – In daily life such as household working, career maintaining, and life-maintaining of each individual.

2. Physical Activities at Free Time – This included 1) play which was the participate activity engaged voluntarily, freely, and joyfully, with minimal focus on competition, 2) physical exercise which was physical activity along the procedure and system requiring regular engagement aiming at having physical health or competence, and, 3) sports which was the physical activity that required highly competitive skills and focused mainly on competition along the rules and regulations, standard procedures, and specialty than physical exercise. All these physical activities had differed in their function, intensity, duration, frequency, as well as the model and method to achieve the goals and objectives of health or physical fitness (Krabuanrat, Charoen, n.d.)

World Health Organization (WHO, 2010) had classified physical activities for people of all age as follows:

**Vigorous Physical Activity** – This was referred the movement activity continuously carried out at least 3 days/week increasing the pulse rate to the point the person felt tired and gasped for breath resulting the energy metabolism of at least 1,500 MET -minutes/week or activity continuously carried out for 7 days/week.

**Moderate Physical Activity** – This was the activity at moderate level carried out continuously for 3 days at least and for at least 20 minutes per day or the moderate activity carried out continuously for 5 days, or walking continuously for 30 minutes and up, to burn up the energy of at least 600 MET minutes/week.

**Low Physical Activity** – This was the activity that used up energy at low level carried out for fewer than 3 days/week and used up the energy less than 600 MET-minutes/week. The World Health Organization had suggested that the aging people should carry out moderate - vigorous physical activity (MVPA) which was the moderate physical activity taking 150 minutes and up per week or the vigorous activity at least 75 minutes per week.

Department of Physical Exercise for Health, Ministry of Public Health, had defined the term physical activity as follows:

1. Body movement or physical activity was referred to the engagement in the activities of body part moving functioned by skeletal muscle resulting higher energy consumption than normal during relaxation. There were 4 types of this type of activities classified along the action context as follows;

1.1 Occupational activity such as carrying the pole on shoulder with equal weighted things on both end, carrying things up or down, riding the tricycle, rice harvesting, etc.

1.2 Household activity such as included household working, cooking, dish cleaning, washing off the glass, cleaning the floor, wiping up the floor, harvesting flower and vegetable, , digging up the soil, trimming twigs, mowing, for example.

1.3 Transportation activity such as walking or biking to work, to do certain errand, walking up the stairs, for example.

1.4 Leisure time activity such as strolling, long distance walking, biking, ballroom dancing, Chinese martial arts, Yoga exercising, jogging, aerobics dancing, swimming, and playing variety of sports. Moreover, leisure time activities could be classified into 3 types, namely, 1) recreational activities, such as strolling, long-distance walking, mountain climbing, hiking, biking, swimming, ballroom dancing, swimming, ballroom dancing, Chinese martial arts exercising, Yoga exercising, for example, 2) competitive sports, and 3) physical exercise or body training focusing on the body movement along a procedural patterns to be repeated aiming at building up a certain competence or all of it. It was activity requiring energy using such as walking, running, long-distance running, biking, aerobics dancing, swimming, skipping, rowing, and, enduring sports playing.

From all these, one can see that forms of activities might overlap depending on the objectives and context of engaging in such activities.

2. Regular physical exercise activity was referred to the physical activity engaged every day or almost. If it was a moderate activity, the engagement should be done for 5 days or more per week. If it was an intensive activity, the engagement should be done for 3 days or more per week.

3. Duration of physical exercise activity engagement was referred to the time spent for physical exercise at a time. If the activity was moderate, the engagement should accumulatively take at least 30 minutes a day. The engagement should be done for a short duration, e.g. 10 minutes for 3 times a day or continuously take 30 minutes for the period. In engaging in the heavy activity, one should take at least 20 minutes a day to carry out the activity.

4. The physical exercise activity of moderate intensity was referred to the activity after which the individual felt rather tired, with the rate of heartbeat a little bit faster than at normal. While engaging in it, the individual could still engage in the conversation with others till the end of the sentence without having to stop to take the breath. The activity was regarded with equal intensity with that of rapid walk. If the activity had been regularly and continuously done, the pulse rate would be constant. During jogging at moderate intensity level, the pulse rate would be about 55- 69% of the highest rate of heartbeat. The activity on household works, gardening, field working, labor career working, travelling, and recreation was mostly at moderate level of intensity. Intensive activity or exertion was referred to the activity already been done that made the individual tired or exhausted resulting hyperventilation or gasp for breath the same as when the person run, jog, walkathon, power walk, fast aerobic dance, swim back and forth, bike fast, or uphill. In playing sports to train on tolerance, if such activity could maintain pulse rate or the physical exercise was at high intensity, 70% and up of the highest pulse rate. Most physical exercise activities or body train were at moderate to high intensity level. Besides, there were many house works that were at mild, not moderate, level, such as dish cleaning, cooking, ironing, cloth washing, feeding animal, making bed, and watering plants that would not count.

### **Physical Exercise for Health**

Many had defined the term physical exercise. In general, *physical exercise* was the attempt to have body use the power existing to have body part or parts and systems move at appropriate rate and generate energy on consistent, regular, and sufficient bases assuring the full growth of the body, with health and strength, and high physical fitness, enabling the individual to carry out variety of activities or work with effectiveness and enhance social, intellectual, and emotional developments. The activity's form and procedure should be chosen to fit gender, age, and readiness of body of the person. Physical exercise had effect on body to strengthen the muscle system assuring its effectiveness and nervous system as the result of adrenal gland's released adrenaline and the respiratory system resulted from the lung's having been functioning and becoming larger improving the gas exchange ratio and circulatory system. Heart was enlarged being able to pump higher amount of blood each time. Blood vessel's diameter became larger and stronger. Digestive and excretory systems which had been affected by the energy using required higher density of energy. As a result, they would stimulate the digestive system to more effectively defecate the wastes. For all these, it is apparent that physical exercise is a necessity for humans as is the food or rest.

### **Principle of Physical Exercise for Health**

From reviewing literatures and recommendations made by academics, the principles of physical exercise for health could be derived as follows:

1. At the beginning, physical exercise should be carried out eventually starting with mild intensity and simple method. When body began to get used to it, one should eventually increase the intensity and complexity of it.
2. One should warm up his/her body before doing the physical exercise for 5-10 minutes and cool down the muscle before ending physical exercise every time.
3. One should have every part of body of her or his a chance to exercise not just certain ones and do it right along the principle.
4. The individual should be sure that the body condition is at readiness state not risking any danger such as diarrhea, not sleep at all, feel like vomiting, get dizzy, shaking, etc.

## **Types of Physical Exercise Activities**

In conducting physical exercise for health, one should choose the activity that fits him or her. Everyone had unique goal in doing physical exercise. It is beneficial to choose the right. Otherwise, one would not only get the benefit out of it but the bad consequence. The types of physical exercise are as follows:

1. *Isometric Exercise or Static Exercise* – This is the physical exercise by contracting the muscle with moving any part of body either body, hands, legs, bone, or joint by contracting a certain muscle bundle or many of it for a while and release before do it another time. Another way is through standing pushing both hands on the wall.

2. *Isotonic Exercise or Dynamic Exercise* – This is the physical exercise by contracting the muscle with variety of time but fixing the contraction such as body exercise and weight lifting. This type of physical exercise is to directly exercise various muscle bundles making it grow and stronger. This muscle contracting physical exercise does not have much impact on heart or vessel but the muscle.

3. *Isokinetic Exercise* – This is the exercise to resist the pressure with constant speed. It is the new physical exercise using the innovative tools along with the computer. It is somewhat similar to the second type but one has to push the pressure on the tool either, pulling in or out, or lifting up or down, jogging in place, etc. It requires the equal force and constant speed. Using the modern turn could enable the exerciser to control the speed and movement.

4. *Anaerobic Exercise* – This exercise does not focus on oxygen using as the body does not extremely need it such as a 100 meter short distance jogging. It is to run as fast as possible for a short distance and period of time. The person would not even time to breath during running along this 100 meter distance. The body does not need much extra oxygen.

5. *Aerobic Exercise* – This is the exercise to enhance the body's ability to its peak in absorbing oxygen. It is the management of heart and lung for the period sufficient for the changes benefitting the body, and stimulating the function of heart and lung and energy metabolism in the muscle. It is the body exercise that opens for the movement of various parts of body with medium speed taking 10 minutes and up. Through the process, the body would breath in oxygen to be increasingly used in building up energy more than usual helping the respiratory system breath in more



oxygen to be used in building up energy than at normal time. Consequently, the respiratory and circulatory systems function and high level for a period of time resulting of the persistence of such systems.

The aerobic physical exercise has been regarded the one that benefit body the most as it has the goal to exercise to maximize body's ability to absorb oxygen or "Aerobic capacity." This would enable the lung to breath faster to get the highest amount of oxygen as much as possible leading to faster heartbeat and stronger blood pumping causing more blood circulation in the body. Oxygen is distributed to various parts of body strengthening the lung and heart and increase blood vessel system's effectiveness. This is because the amount of oxygen is the gauge indicating the condition of all these significant body parts. It is the best indicator of the perfection of human body. There have been recommendations for those who do the physical exercise for health that they should choose to do the aerobic exercise.

### **Significance and Necessity of Physical Exercise**

Physical exercise is the necessity for everyone. At children age which is the growing period, the children need physical exercise to develop various developmental tasks. These include physical development and the physical exercise would assure the child's body strength and persistence of the muscle and body parts concerning blood circulation and respiratory system to assure their functional effectiveness. They should have appropriate size and body proportion to facilitate their basic movement no matter it is walking, running, jumping, pitching, throwing, stretching, casting, falling down, or, kicking, to assure its agility. Moreover, children could also practice these movement skills in their everyday life task, and spend their free time in the way benefitting themselves or the society at large. Concerning emotional and mental developments, physical exercise could bring up enjoyment alleviating their stress and preventing aggression compensating the disappointing feeling and getting rid of anxiety from various causes. Concerning social development, physical exercise and participation in the sports activities could train the children on morality, compliance to rules and regulations of the play, duty maintenance, learning to loose, to win, and to forgive, responsibility taking, having discipline in the play, and learning to sacrifice for the common interest. Concerning the intellectual development, the children could develop

their learning and creativity, use their resourcefulness in making decision, and know how to adapt themselves to variety of the situations and environments in the wise way.

### **Disadvantages of Lacking Physical Exercise of Children**

At the present, physical educators, sports concerned physicians, sports scientists, and others concerning sports have become very much interested and paid the close attention to physical exercise of the children. They had seriously studied on the model of physical exercise to develop physical fitness concerning health and skills of the children as well as the consequences that followed after the children had correctly and appropriately carry out the physical exercise and realized the adverse impact of lacking physical exercise. It had been found that if the children had lacked physical exercise, the bad consequences would come as follows:

1. Growth – Body size expands. Height of the body depends on the bone length. Physical exercise would facilitate the bone growth to the size it should be both in terms of length and thickness. Such growth was made possible by the accumulated body minerals, particularly calcium in the bone. In children lacking physical exercise, the bone would be small, fragile, and have not expanded on length as good as it should. As a result, the child would have slow growth, dwarfism, and height having not grown as much as it should. The child would slowly grow and be dwarfed accumulating problems particularly when he or she reached the old age. This is particularly the case for woman who would get osteoporosis making their bone and easily broken.

2. Shape – The skeleton and the covered muscle form the shape visible to others. If the bone hardly grew and the muscle was less tight due to lack of physical exercise, the individual's body would be thin. The children who had eaten a lot of food but lack of physical exercise would have a lot of under-skin fat or technically subcutaneous fat making them looking fat. However, their minimal and non-strong muscle could lose out the muscle tightness affecting their shape and movement. The think or fat children would lose their manner such as bowlegs or knock knees, hunchback, head drop or wry neck, non-straight up body, etc. All these would lead to bad personality.

3. General health – Children lacking daily physical exercise would be weak, have low immunity, easily get sick and if do would slowly be healed, and often have

opportunity to get complications. This health problem would prolong up to when they become adults.

4. Physical exercise for physical fitness would have impact on the individual's competence of various aspects. The physical exercise focusing on muscle use would increase muscle strength by increasing muscle mass. Enduring physical exercise with not much intensity but taking continuously for a relative long time period would increase the person's tolerance by increasing effectiveness of the circulatory and respiratory systems. Children lacking physical exercise would have lower physical fitness than those with regular physical exercise. The latter would have advantages in their studying, sports activities, and physical exercise. Moreover, physical fitness on coordination between the muscle and low nervous system leads to their low level of reaction to avoid danger. The children would easily and often get a fall accident.

5. School-record – In comparing the school-record between children with high physical fitness and those with the low one, it was found that children with high physical fitness would have better school record than those with low physical fitness. Thus, lacking physical exercise sports playing of the children has negative impact on their study too.

6. Social and mental development - physical exercise and sports playing in group facilitates the children to learn to adapt to the social situation. On personal development, the children would have self-confidence and joyfulness. Those lacking physical exercise always withdraw from others and have few friends without cheerful mind. Moreover, the children who have had regular physical exercise since they were young would have the habit of doing physical exercise up to when they become adults. On the contrary, the children who had lacked physical exercise would derive the habit of not preferring physical exercise and increasingly get the adverse impacts of lacking physical exercise when they become adults.

For all these reasons, physical exercise is something necessary and significant for the children, particularly those in the school age when the children need physical exercise as they do for food for their growth and good health and strength.

#### **2.4.3 Physical Fitness Related to Health**

Physical educators both Thai and foreign ones had defined the term “Physical fitness” in various ways which could be generalized as ability of the body in

carrying out the daily activities in an active and quickly ways without exhaustion with enough energy to carrying out entertaining activities during the free time. The person should quickly recover standing ready to cope well with the emergency. He or she should have other features of good health and good living. Physical fitness included the body's ability on circulatory and respiratory systems, endurance, strength, flexibility, and body composition.

### **Significance of Physical Fitness**

Physical fitness is significant in facilitating individual to carry out the tasks and maintain his/her life in an effective way. It also keep the individual free from sickness and help him or her maintain the strength and endurance, being agile to well carry out the daily tasks contributing to his or her mental and emotional development. Concerning individual health, perfections of body and mind has close relationship with physical fitness. It could be said that physical fitness had deep root in having good health. If body was weak and non-perfect, the ability of body in carrying out the daily life tasks would also be reduced (Institute for Development of Physical Education and Sports Personnel, Department of Physical Education, 2002). Physical fitness would be the case solely when body had movement or physical exercise. Physical fitness was the condition of body that could come and go. To maintain physical fitness was solely through regular physical exercise. Significance of physical fitness via regular and consistent physical exercise is as follows: (Worabovorn, Bussarin, 2005)

1. Regular physical exercise would enable the body to fully grow, particularly during the child period during which muscles of all parts of body have fully grown and well-proportioned and have competence in carry out various tasks with effectiveness. For the same amount of work, muscle with high competence would succeed in carrying it out with less energy and tiresome. The person could use the remaining energy to work on something else.
2. The good body competence of the person would make his or her personality graceful being able to quickly and actively move around along the rhythm or style of moving or walking. The body could save energy and well dignify the individual.
3. The individual who has body competence would have good health and effectiveness in carrying out various tasks and works with high productivity. If the

person is in school age, he or she could persist and concentrate on the study for a long period of time making his or her scholastic performance better than that of those who are without physical fitness.

4. Lower part of back muscle is crucial for protecting from the back pain when entering old age. If there is good and relevant physical exercise on this part since when the person was young, it could be an effective way to prevent the back pain.

5. For the children at child age, good physical fitness would stimulate the child to be active and has the need to move and gain high self-confidence.

6. Physical exercise to enhance the body's competence is a good method to maintain and control the body weight. Food reduction alone is not a good way to maintain and control the weight, particularly among the children who are in the growing age. The best and correct method was the one through physical exercise along the consumption control.

7. Physical exercise to equip the body with competence is to enhance effectiveness in coordination between the circulatory and respiratory systems keeping heart disease away. There has been a belief physical fitness decline is the cause of chronic heart failure which is a horrifying disease in modern society. One of the best ways to prevent to it is regular physical exercise to maintain physical fitness.

8. To make the famous ancient Greek saying "A sound mind is in a sound body" more meaningful, there should be an extended explanation that "The sound body is the one with physical fitness." Thus the body with good competence and health would have effective impact on mind as well.

### **Factor of Physical Fitness Related to Health**

Samahito, Supitr et al. (cited by Thai Health Promotion Foundation, 2006) stated that physical fitness for health was the competence to reduce risk of having health problems via 5 factors as follows:

1. Muscular strength – This was the ability of muscle to contract when the individual used force to lift up or pull down thing. Muscular strength would support the body up in good posture which was the ability of muscle to support the body stand up resisting the gravitational force not to fall down. It was the muscle strength used for basic movement such as running, jumping, tiptoeing, bounding, single-leg jumping, leg-

switching jump, for example. Another kind of strength was for moving body part in different angle such as arms and legs to play sports or to throw, kick, beat, for example. The last kind of strength was the strength of muscle in running. It was the ability of body or part of it in resisting the force from outside without falling down or losing balance. Strengthening muscle by weight lifting or moving parts of body was known as isotonic exercise aiming at resisting the friction during a certain period of movement such as bending arms to lift up the barbell or pushing the floor using body weight as the friction.

2. Muscular endurance was referred to the ability of muscle in forcing an object to move continuously for a long period of time or many times continuously. The exercise would strengthen the muscular endurance by increasing the number of the activity engagement which would depend on many factors such as age, gender, level of physical fitness of the child and type of physical exercise.

3. Cardio and respiratory endurance was referred to the ability of heart, lung, and blood vessel to carry circulate oxygen and nutrients to the muscle having been used for exertion. Meanwhile, it would get rid of the unwanted substances accumulated out of the muscle exerting force. In developing and enhancing endurance of the blood circulation and breathing system, the children had to move their large muscle such as running and jumping for the period of about 10-15 minutes.

4. Flexibility was referred to the ability to move body parts to the peak of their capacity in such movement. Flexibility development could be obtained through stretching muscle and tendon while staying still or moving. In order to gain the highest benefit, the exerciser should stretch out the muscle while staying still having arms, legs, and body stretch out to the point of feeling tense. The exerciser should stay with this kind of muscle stretch for about 10-15 seconds. The development of muscle flexibility was an effective way to increase the functioning ability of the muscle and joints covering the whole angle of movement. Muscle flexibility could be acquired only when the exerciser had followed the right procedure.

5. Body composition – This was the indicator for the individual to realize the proportion or weight of fat in his/her body. Body composition was composed of 2 parts – fat in the body and weight of the body parts that were without fat such as bone and muscle. Maintaining body composition at the appropriate level would keep one away from obesity which was the start of further getting variety of hazardous diseases

such as Coronary heart disease, chronic heart failure, and diabetes, for example. Physical exercise was a way to get rid of fatness improving life quality and body immunity. Body composition could be checked by measuring the skinfold thickness using the instrument called skinfold caliper.

In general, it could be concluded that the factors of physical fitness related to health were the crucial factors to enable people to have good health which included five main factors, namely, endurance of the cardiorespiratory system, muscle strength, muscle endurance, body flexibility, and body composition.

### **Assessing Physical Fitness of Students**

Assessing on physical fitness of students was an important process to which the concerned individuals had to pay attention to. Some recommendations for carrying out the assessment are as follows, (Samahito, Supitr et al., 2006):

1. The teachers had to prepare the equipment to be used in the assessment and check the readiness and quality of the tools and equipment.
2. Form used for recording information obtained from the assessment was every important. The teachers had to prepare it and write down the child's name along with information on his/her weight and height which had been checked for a week in advance before the actual assessment. When carrying out the assessment, the teacher preceded it through the steps and note down the information right away.
3. The teacher had to carefully set up the plan for assessing physical fitness. She should anticipate how long it would take for each of the items to be assessed and how to do it to assure the assessment effectiveness and to avoid confusion and get reliable and valid information.
4. During the assessing process being carried out with a student, the teacher should not allow other students to come in to engage in the activities of physical exercise or other plays on the site as such intrusion might affect the information to be obtained for student being assessed.
5. In assessing on certain thing, there might be a need to have an assistant. If so, the teacher had to make sure to have made the assistant understand on the details and method of the assessment to prevent any mistake.

6. Before assessing physical fitness related to health, the teacher should spend a short period of time to explain the student about the assessment that it was the assessment of the individual ability not the competition to assure the student's best practice. After that, the teacher would demonstrate how to practice such activity.

7. Before the assessment on each item of the list, the teacher should have student try out thing on such item. In assessing each of the items listed, the teacher should follow the standard procedure having been detailed.

8. The teacher had to check the students if any of them had chronic disease or being ill and would not let him or her assessed until being sure that there was safety and no danger from such chronic disease.

9. Before the assessment, every student should do the body warm up to stretch his or her muscles, joints, and tendons by running in place, arm rotation, arm stretching, body twist, and moving arms, legs, and body to stimulate muscular readiness to practice.

10. As there are many assessing items, the teacher could extend the time for another day or do it in one day but splitting the practice base. The teacher should keep in mind that every student should get through the same standard procedure every time.

11. During the test, if there was an accident occurred due to the test or body malfunction, the teacher had to have such student stop and take a rest to come back later for the rest of the test.

Consequently, the assessment on physical fitness required the assessing form as a tool to stimulate the student being assessed to actualize the physical ability signifying physical fitness level. What important was during and after the physical fitness assessment, the assessor had to study and be well prepared to assure the assessment's validity, reliability, and effectiveness. The research and development on developing competency on instructional provision of physical education teachers to enhance health of students would utilize the assessing form and physical fitness standard related to health of the student aging 7-18 years and program for information processing created by the committee to promote physical exercise and sports playing for health in educational institutions, Office of Thai Health Promotion Foundation (2006) including 7 aspects, namely, 1) Body mass index (  $\text{weight}/\text{height}^2$  ), 2) Skinfold thickness, 3) Sit up for 60 seconds, 4) Push the floor for 30 seconds, 5) Trunk forward



flexion, 6) Run around, 7) Long distance run, (age 7-12 years for 1,200 meters, age 13-18 years for 1,600 meters.

## **2.5 Research Related to Physical Education Teacher Development**

In conducting the research on and developing the model to develop the instructional provision competency of physical education teachers to promote health of students, the researcher had studied and analyzed the related literatures as follows:

Wittayapitak, Sawang (2004) had studied desirable competencies of physical education teachers for Thai educational reforming era B.E. 2542 by analyzing and synthesizing desirable competencies from the related documents, articles, and researches to set up the framework of the desirable competencies of physical education teachers. The author had interviewed 7 experts for the study cases along the interviews, observation on the instruction, and compiled information from the teacher who had been announced a national physical education teacher, 3 model physical education teachers, and other concerned individuals to check the inclusiveness of structure and key elements of the desirable competencies of physical education teachers. After that, the researcher had examined the ideas and comments of 600 physical education teachers from all over the country by analyzing the components of the desirable competencies of physical education teachers before analyzed information in terms of frequency, percentage, mean, and standard deviation. Factor analysis was also used to extract the factors by focusing on the prime factor and using varimax rotation. The findings reveal that the structure of desirable competencies of physical education teachers was composed of 8 aspects, namely, thinking and applying technology for physical education, personality and human relations, physical education curriculum and learning organization, physical education management, physical education measurement and evaluation, principle and philosophy of physical education, morality, and research conduction. Moreover, the structure covered 66 key elements altogether.

Kuna-apisit, Wasana (2004) had conducted the research and developed teacher development model to set up the curriculum strand on health education and physical education using teacher development model and came up with 3 programs covering 3 phases. Phase 1 was organized for school-based teaching training taking 3 days at each of the participating schools to organize the curriculum strands. Phase 2 was on

supervision along friendliness principles and on evaluating the teacher's learning organizing behavior. Phase 3 – a forum was organized to conclude the results and evaluate attitude on teacher development model for building up the curriculum along friendliness principle and behavioral change theory. The model was effective and appropriate for teacher development at the present which should be adopted by the education service area offices and the Office of Basic Education Commission for teacher development for years to come. Nonetheless, there are recommendations for applying as follows:

1. The old teacher development model should be revised to have continuity along the 3 phases to assure the highest effectiveness.
2. The school-based training should be concerned with flexibility of the training by using friendliness principle as well as various techniques. It should also be competency-based in-service training system.
3. School-based teacher training has to reveal the quick and sudden results to impact the effectiveness of the school's instruction in general.
4. The successful training or profession development for the teachers relies on the supports of the school administrators. Hence, in organizing any training, besides focusing on satisfying needs of the teachers, it should also be approved and realized in its significance by the administrators and their supports for the development on continuous basis.
5. Physical education has its uniqueness. The training should be organized to suit the needs and necessity of the teachers, particularly the vision change to see health education and physical education that focuses on health promotion to assure the student's happy living or wellness. The trainers have to have complete knowledge in this field to be sure that the teachers would obtain the right principles.
6. Academic achievement of the students should also be taken into consideration when effectiveness of the teacher was assessed in addition to his or her knowledge, competency, and attitude.

Pliankham, Sakolwan ( 2007) had proposed a teacher development model for health education and physical education learning strand basing on 3 main factors, namely, direction on the development, process of the development, and assessment of the development outcomes. Such factors shared the conceptual framework had

interrelationship. Factor 1- direction of development included the concept taken as the focus and goal of the development. It would be the starting point for the development with the direction in terms of policy and practice requiring the administrator to recognize the significance of teacher development to set up the policy and strategic plans to enhance the teacher's capacity and encourage the teachers to have academic qualification required by the learning strand. The development model should vary and fit specific nature of health education and physical education learn strand covering domains of knowledge, skill, and attitude.

Moreover, the development goal could also set the direction of teacher development to assure its effectiveness and enable the teachers to provide the learner-centered learning. The teacher should develop the learning program along the objectives of learning and philosophy for health education and physical education strand instruction. The teacher should also teach along curriculum in an integrative way becoming professional teacher who were equipped with analytical thinking, creativity, ability to appropriately apply innovation and technology for the instructional purpose. The teacher should have good health and take leadership for the health-concerned network. Factor 2 – development process was composed of knowledge used for developing knowledge, skill, and attitude, which included philosophy and principles of health education and physical education learning strand, instructional techniques, integration of learning provision, health program and physical education program in school, health maintenance along self-sufficiency economy philosophy, measurement and evaluation, learning media, innovation, and technology for health education and physical education instruction, research for learning development, thinking process, personality development, collective work, research, sports, teacherness, sportsmanship, curiosity, good attitude toward the profession, and good values on teacher development.

The development methods both in and out of school included internal supervision, friend helping friend, work mentoring, team working, knowledge management, workshop, project proposal development, short-course and/or long-course trainings, formal training along informal one, setting up school network, and activities to coordinate cooperation among school, and study tour to schools and agencies having successfully implemented.

Individual and group learning activities included self-study, using integrated learning units, learning through practice, learning through electronic media, correspondence education, computer-assisted instruction, education via information technology or internet, following up the progress on health education and physical education from the meetings, seminars, and training, further study, experience exchange, discussion/focus-group discussion for building up the concept and goals for the operation, brain storming, case study analysis, questioning, and opinion expression.

Operational steps for the development included analyzing and assessing the trend, designing the tasks of teacher development, setting up the general model and activities of the development, surveying and assessing the individual's capacity to realize what to be developed, assessing teacher development necessity on individual basis, providing program responding to such need, notifying on general goals and steps of carrying the activities along with the results of development of which the development recipients should get, and grouping teachers along the results of development necessity assessment.

Media used in the development included printed media ( documents, textbooks, programmed instruction, manual for developing learning unit by oneself, model media, etc.), multimedia (video, CD, VCD, DVD, etc.), health education medias and physical education, person media such as model health education teacher, nationally recognized physical education teachers, and learning resources such as library and model school.

Agencies responsible for the development included offices of education service area office, Office of Basic Education Commission, Ministry of Education, National Institute for Development of Teachers, Faculty Staffs and Educational Personnel, Supervisory Unit, groups of schools, professional associations, and higher education institutions.

Factor 3 - evaluation and follow-up results of the development. This included evaluation on the concept focused by the development in policy term by examining the operational strategies of the Ministry of Education, and evaluation on the practice of the teachers. The evaluation should be conducted along the appropriate proportion of health education and physical education in aspects of knowledge, attitude, practice, and skill as there was certain specific nature of the learning strands that

emphasized the practice and skills along knowledge and attitude aiming at becoming best practice of the evaluation. Evaluator should also look at the outcome occurring to the learners and school personnel, and the concerned individuals in the community. Method used in the assessment included needs assessment, and individual development plan (ID Plan). It had to be comprehensively done by all the concerned sides both of internal and external ones. The follow-up should be carried out after the program came to the end at least once a semester. There should be an annual assessment report every year.

Teacher development model for strand health education and physical education strands along the 3 factors reflects the systematic internal interrelationship. It had clear goals for the development. The development process had also been set up along the set goals. There was also the assessment of the development results to show how much effectiveness such development model had in order to reflect on which part, which direction, what content, and which process to be to be developed further more.

Moreover, had researched on and developed effective model for developing competency of the teachers in health education and physical education strand for small sized schools in the areas responsible by Udon Thani Educational Service Area 1 Office. The findings reveal that the teachers needed development on instructional competency which included 2 types of them. Type 1 competency was the competency of being good health education and physical education teacher, and Type 2 competency included the competency in learning provision on health education and physical education strands, particularly the competency on developing innovation for health education and physical education strand instruction. These competencies were required when the teacher submitted the petition for being appointed as special expertise teacher. The effective model for developing competency of the teachers in health education and physical education strand for small-sized schools in the areas responsible by Udon Thani Educational Service Area 1 Office constructed by the researcher included 3 main activities, namely, 1) Training which included seminar, workshop, learning exchange, study tour, and operational practicum, 2) Mentoring which included supervision, monitoring and following up the performance of the teachers, participation in seminar, counseling and guidance provided for the teachers in group or individually, and, 3) Self-learning which included the study and searching for information for the work assigned for each day of the training, observing the instruction of the core-leader health

education and physical education teachers, coordination via internet or telephone to improve the performance, and the participation in activities concerning health education and physical education. After engaging the training utilizing the development model, the teachers had gained higher achievement. From the assessment of the mentoring program on teaching health education and physical education, it was found that the participating teachers had effectiveness in learning provision on health education and physical education strand at high level on every item. From the assessment of the teacher's competency by the students, teachers participating in competency development, fellow teachers, mentors, and administrators, it was found that subjects had the opinion that the teachers who had participated in the development via the model constructed had competency of being good health education and physical education teachers. Their competency in providing learning was at most level. The model for developing competency of the health education and physical education strand teachers that had been developed was a good model having been tried and had effectiveness and efficiency. Institutes of Physical Education which had the mission of producing and developing the health education and physical education teachers should adopt this teaching development model to develop the competency of the lecturers in all of its campuses later on.

Thaesungnern, Anuchit (2011) has studied the desirable competency of the health education and physical education strand teachers during 2011-2021 using ethnographic Delphi futures research (EDFR) and focus group technique and purposive selected sample including 17 special expertise teachers who had knowledge, ability, and experiences on health education and / or physical education. The instrument was the semi-structured interview form, and a rating scale questionnaire. The statistics used for analyzing the obtained information were median, mode, and Interquartile range. The findings reveal that the desirable competencies of health education and physical education strand teachers during 2011–2521 included 9 aspects, namely, self-competency, knowledge and professional experience competency, learning management competency, research competency, technological competency, communicative competency, guidance and counseling competency, community development competency, and leadership competency. Moreover, there were focus group discussions between the producers and the consumers

who had suggested the ideas about the desirable competencies of health education and physical education strand teachers during 2011-2021.

From the review of the concepts, theories, principles, and researches cited above, the researcher developed the model for developing instructional provision competency of physical education teachers model for promoting primary student's health. The model was composed of 3 main factors, namely, factor 1- development direction, factor 2 – development process including 3 stages: stage 1 – adjusting paradigm and putting knowledge into instructional plans, stage 2 – carrying out the field work and providing guidance and counseling, and stage 3 – learning exchange to extract lessons learned, and factor 3 – assessing the results of the development. The development was carried out basing on the needs of physical education teachers and principle of building up the sense of participation using the classroom as the base for development with the approval of the school administrators and cooperation from the concerned individuals. It was the development that continuously took long period of time with the counseling, caring, network building for learning exchange, and publicizing the innovation used for developing the learners. There was a study on effectiveness and efficiency of teacher development model in producing the competencies of the physical education teachers and health of students along the research framework as shown in chart 2.1 that follows:

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**Chart 2.1 Research Conceptual Framework on Model for Developing Instructional Competency of Physical Education Teachers to Promote Primary Student's Health**

