

## Chapter Two

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## **2.1 Teacher's role to promote lifelong learning skills of students at the basic educational level**

### **2.1.1 Concept of Lifelong Learning**

#### **2.1.1.1 Definition and Importance of Lifelong Learning**

There were many meanings used to define "Lifelong Learning" in the similar way by explaining that it's the individual's continual learning process. It's also relevant to the definition from European Lifelong Learning Initiative that Lifelong Learning is the lifelong continual process which stimulated the individual to input the knowledge, value and understanding to be able to confidently and creatively apply that knowledge in every aspect of life, situations and environment. The International Education in 21<sup>st</sup> century Committee presented the report on "Learning: The Treasure Within" to UNESCO. The Lifelong Learning was mentioned as the key to the world in 21<sup>st</sup> century. It contained with 4 main principles (Office of the National Education Committee, 2000) 1) Learn to Know was the combination of general knowledge which was appropriate to intensive learning opportunity in some topics, practice to gain benefit from lifelong learning. 2) Learn to Do was to be able to cope with different situation and work as a team. It's the learning by social experiences and earning a living. 3) Learn to Live together was a learning to understand other people which was the basic conscience in interdependence and 4) Learn to Be was the ability to improve the individual's personality, to work independently, to be more considerate and to be responsible to own self. Besides, Cropley (1978, p.49) defined that Lifelong Learning was the response to the curiosity of learner and it was the attempt of education institutes to initiate the situation which facilitates the learning, Wichai Tansiri (1996, p. 9-13). Besides, some academics defined the meaning of Lifelong Learning in the more specific way. Knapper & Cropley (2000, p11-12) explained Lifelong Learning as a lifelong independent learning that one could do. It contained with 4 main specific characteristics which were Learning from learners' good interests and intention. Second, there should be a specific goal; not a vague expectation; for example, mind development. Third, that specific goal must be the cause for learning. Lastly, learner should have an intention to keep and apply that knowledge in daily life. The difference between the definition of Lifelong Learning and Lifelong Education was explained in learner's and learning

providers' point of views, Sumalee Sungsi (2001, p. 14-17). Lifelong Learning was the activity of learners based on the beliefs and hypothesis that a person was the one who created the learning. A person who was capable for learning and always learned in every moments of life which gave the importance to oneself. In the meantime, Management was one important thing which needed to be considered. It conducted learning to the right way; qualitative and brought the most out of the benefit to learners. Lifelong Education was used to create this condition as it gave the importance in school's activities. So, these two conditions aimed a person to learn throughout life and learn appropriately to be able to develop quality of life.

It could be concluded from the definition above that Lifelong Learning was the process in seeking for knowledge in every moment of life. It was the learning which was created from the intention to develop oneself pertaining to objectives or interest in life. There was motivation in continual learning in life to benefit those knowledge in daily life and used them for personal development.

### **The importance of Lifelong Learning**

Lifelong Learning was regarded as a key to the world after 2000. It's essential in developing a person's ability in corresponding to the need of labor market, which had been changing, and appropriately adjusting oneself in every condition in life. Many countries saw this importance so they applied this Lifelong Learning concept as part of the educational policy. Lifelong Learning took an important role as the strategy in developing country in Thailand. Many experts mentioned to the importance of Lifelong Learning as such Kriangsak Chanreonwongsak (2000, p.124). He said Lifelong Learning had an importance in Thai society. The advancement in information technology had connected worldwide information rapidly and boundlessly. The massive quantity of information which circulated in the system and the continual changing process in society had lessened the advantages of the old knowledge when it's applied to the real world. Whenever we neglected to things, the Lifelong Learning and developing process would be stopped. Having the right social understanding in learning would benefit Thai people to adjust themselves in the current world. This was also corresponded with the concept of Vichit Sri-saan (2002, p. 14) which said that the importance of Lifelong Learning had been developing from the concept of philosophy,

authority and opportunity on democracy. Lifelong Learning increased its importance when it came to globalization. Knowledge was rapidly out of date which caused people tried to keep up with new information. So, learning became the fifth factor for the living. It could be said that Lifelong Learning had an essential in developing; from the person, community, country to the international level. It could help a person to live a peaceful quality of life. So, Lifelong Learning was accepted and applied as a way in developing education management from UNESCO and was widespread to many countries.

### **2.1.1.2 Policy Concept Theory about foreign Lifelong Learning and Thai**

#### **Education Institutes**

In 1960, the world economic had developed. The Ideology of “Lifelong Learning” or “General Education” was raised for the first time in order to increase a person’s ability as it could be seen from many articles at that time such as Recurrent Education: A Strategy for Lifelong Learning (OECD: Organization for Economic Cooperation and Development, 1973) and Recurrent Education and Lifelong Learning (Schuller & Megarry, 1979). However, Lifelong Learning concept was clearly different from Learning Review concept (Hasan, 1996, p.33). In 1972, the article about Learning to Be was published with an attempt to create the Lifelong Learning concept. It gave the importance to the right and need of each individual to develop economic, social and political status. The article promoted “Lifelong Learning” as a master concept of educational policy for both developed and developing countries (Medel Anonuevo, 2001, p.1). Moreover, National Advisory Group for Continuing Education and Lifelong Learning (NAGCELL) reported about Lifelong Learning for the 21<sup>st</sup> Century to the Minister of Education. The vision of this report was “The access to learning, the importance of learner, and the own lifelong management of learner (Elliot, 1999, p.104–105). Kemp (1998) mentioned that Lifelong Learning aimed to the expanded results from that learning and the advantages for people by finding the possible way to respond to the educational needs and staff training. It was the educational institutes’ responsibility in responding to the learners’ requirements. Lifelong Learning: policy, strategy culture of Colin Griffin (2001) showed that Lifelong Learning was the educational policy which was important to everyone. It covered in many aspects; from

strategic policy to many more concerned which were process and the form of Lifelong Learning, factor which affected to Lifelong Learning, Lifelong Learner's characteristics, Lifelong learning's quality indicators, needs, problems and obstacles in Lifelong Learning.

### **Foreign Lifelong Learning Concept**

Hasan (2001, p.382 – 389) had studied about roles and importance of Lifelong Learning which was specified in foreign educational policy. 1) The policy in Australia regarded that Lifelong Learning improved skills, knowledge in every age group and careers for opportunity in career and individual value. 2) European Union regarded that Lifelong Learning played an important role for population to be able to adjust themselves in social and economic change. Lifelong Learning created new learning and equality in learning opportunity allocation. 3) Finland regarded Lifelong Learning as an essential in learning for career which was relevant to people life style, equality in democratic value, living together in society, social creativity and productivity. 4) France regarded Lifelong Learning as the utmost importance in country's population development. It gave the educational opportunity for adult population. They had to graduate higher than senior school. Moreover, they gave opportunity to youths to study in vocational degree. 5) Italy regarded Lifelong Learning as an importance in human resources development toward production. It aimed in clearly supporting this learning by encouraging institutes' and people's participations. It also developed college institutes (Tertiary) as a choice for Lifelong Learning. 6) Japan showed the importance of Lifelong Learning by being the first country that demonstrated the full attitude of the learning by integrating education to every age group. It was the educational system which supported a person's Lifelong Learning. 7) Korea gave an importance of Lifelong Learning as the policy to develop infrastructures to access to the education in every age group, especially adult. There was support and service to Lifelong Learning. 8) Netherlands had been using Lifelong Learning as a long-term policy in economic and social development. It also promoted operator's potentials including teacher's ability. 9) Norway gave an importance to Lifelong Learning to the youth an adult educational management by using the participation from government and society. 10) England regarded Lifelong Learning as

a key to prosperity and the success. It was the tool in population's mind and intelligence development to be able to adjust themselves to every aspect of change. 11) United States of America regarded Lifelong Learning as a country's association.

### **Policy, Concept, Status and Way of Lifelong Learning in Thailand**

**The Importance of Educational Ideology** was to provide lifelong learning and to create Thai society as a learning society. Educational sections in every level should apply it as the method in educational management which would be relevant to national education standard (Education Council Ministry of Education, 2005, p.3-9)

**National Education Act 1999** by National Education Committee (2000, p.8-18) presented about lifelong learning principles for Thai people. It included with 1) Creating Thai society as a lifelong learning society and culture. 2) Lifelong Learning was a continual process 3) Right and equality in Lifelong Learning for Thai people 4) An importance and good relations between learner and learning with a happy way of life. 5) The opportunity and choice in learning by format and various ways of quality and flexible learning. 6) Learning in every appropriate environment. 7) Creating the surrounding as learning resources. 8) Every section in society was responsible for education management and providing convenience in Lifelong Learning for people. 9) The integration of Lifelong Learning between formal, non-formal and informal education systems. 10) Quality of Lifelong Learning on learners and all concerned.

**Lifelong Learning Strategies** included with 9 strategies (National Education Committee, 2000, p.5). 1) creating a clear Lifelong Learning vision which covered 10 principles 2) creating reading habit and self-learning culture 3) creating learning connections and concerned information from every sections 4) raise an importance and relations of the individual, family, community, local intelligence, religious and company as learning resources 5) contributing learning resources to cover in every path of the society. 6) developing learning format and process with various ways 7) developing information, communication and technology for learning. 8) developing and ensuring the quality, process and activity in learning and 9) mobilizing the resources and allocating finance for promoting and supporting Lifelong Learning.

**National Economic Development Plan.** The national economic development plan no.11 (2012-2016) strategic 2 sustainable developing people to

Lifelong Learning society (Office of the National Economics and Social Development Board, 2006, p.47-56)

**Method in promoting Lifelong Learning in Thailand** (Pissamai Sri-umpai and Anun Sri-umpai, 2006, p.75-77) aimed to have a section, which was responsible for Lifelong Learning, appointed as “Board of National Lifelong Learning” with an attempt to manage Lifelong Learning system for personnel, to promote Lifelong Learning to learner in formal and non-formal schools, to manage Lifelong Learning by educational service area bureau, to encourage the participation of family, community and academic in Lifelong Learning management, to promote information technology for Lifelong Learning.

In conclusion, Lifelong Learning promotion for Thai people was needed in developing country. People who had Lifelong Learning skill would be able to continually improve themselves and would always follow the academic change. They would be an expert and understand the change. They would be able to apply the knowledge appropriately and lived their lives strongly.

### **2.1.1.3 Definition Importance and Concept of Lifelong Learning skill**

Royal Institute Dictionary 1999 (2013, p.517) gave the definition of skill as a proficiency which was relevant to Education Academy Dictionary (Royal Institute Dictionary, 2010, p.110) which gave the definition of skill as proficiency or the ability to do some particular things physically thoughtfully or socially. It's the result of practice or a frequent act. Moreover, Macmillan School Dictionary (2004, p. 688) said that skill was the ability to do something very well by experience and training. So, skill was the expertise or the ability to do something or practice something by experience or training. Learning skill was the expertise or the ability to learn something from experience and training. Lifelong Learning skill was important. It created motivation to learners to understand the reason and the need of Lifelong Learning. It encouraged learners to continue the learning. Moreover, learners should improve their skill, the ability in learning or searching for the knowledge, way of learning and be capable in learning efficiently. The learners should be educated from every academic institutes (Office of the National Education Committee, 2000, p.33). Basic standard course in developing learners 2008 aimed to develop learners qualitatively which would help

learners to produce the important desired characteristics (Ministry of Education, 2008, p.6-7) which were the ability in communication, the ability in consideration, problem solving, life skills, technology usage. It also aimed to be able to live happily in society as Thai and the world citizen.

### **Lifelong Learning Concept**

Knapper & Copley (2000, p.47) mentioned that Lifelong Learners should have 5 main characters which were a strong realization in the relation between learning and way of life, realization in the importance of the need of Lifelong Learning, a high motivation in Lifelong Learning, an appropriate attitude toward Lifelong Learning, realization in 7 essential skills for Lifelong Learning ; which were the ability in specifying the practical personal objectives, the readiness in applying the knowledge efficiently, the ability in estimating his own knowledge efficiently, the skill in accessing to the knowledge resources, the ability in applying various knowledge, effective learning in different environment, the skill in applying knowledge from many resources such as library and media, the ability in applying and presenting information. Commission of the European Communities (2002, p.13) had defined 8 main essential principles and skill for Lifelong Learning which were using mother tongue language in communication, using foreign language in communication, numeracy capability, basic knowledge of science and technology, using computer devices, ability in learning, ability in working, good citizenship, capability in being entrepreneur, ability in maintaining good culture of the country. Secretary of labour skill for American success committee (Knapper & Copley, 2000, p.44) had defined skill and basic knowledge for learners to prepare for changes. It was directly relevant to Lifelong learning as it's called "Skill and knowledge as a Key to the Learning Responses." It contained with 8 characters which were knowledge and skill in collecting, analyzing and categorizing information, knowledge and skill in communicating information, knowledge and skill in planning and managing resources, knowledge and skill in systematic thought, knowledge and skill in technology, knowledge and skill in problem solving, knowledge and skill in technics and Mathematics, and knowledge and skill in cooperation. Knowles (1985, p.308) said that academic institutes should help developing effective learning skills for learners to be able to do self-learning according to the individual's interest.

There were 7 main characters for those skills which were the ability in improving and following new knowledge, the ability in self-evaluation, the ability in improving self-ability, the ability in considering, the ability in accessing to the leaning resources, the ability in choosing appropriate learning method, the ability in evaluating the progress and success according self-learning's abojectives. Candy Crebert & Olearly (1994, p. 43) had defined 5 qualifications and characters of a successful Lifelong-Learning bachelor which were curiosity to new things, good vision, skill in analysis, self-reliance, and skill in learning. Smith ; & Spurling (1999, p.134) talked about 11 essential character for Lifelong learning which were the ability in communication and advanced numeracy, the ability in computer usage, the ability in self-evaluation and self-improvement, financial vigilance and consumers' right, the ability to understand Lifelong Learning's value and confindent to practice, the ability to compare and deduce the capability and confidence in research and analysis, the ability for group learning, realization and understanding about mind development and attitude, the ability in applying knowledge to society, basic knowledge in planning advanced learning, the interest in basic systematic knowledge, and self-leading. Murphy, Tolley & Wilmot (2001, p.1) said that social rapid change in the technology world needs skill especially in Lifelong Learning. Lifelong learners needs 4 characters which were the realization about the management – know the way of learning which led to the the change, the ability to communicate technology and appropriate figures, motivation to learn and earn a living simultaneously. Nittaya Sumredphol (2004, p.183, 263) had studied about educational development indicator for Lifelong Learning. The result from the study showed 4 main important charaters of Lifelong Learners. There were indicators in each aspect. Lifelong Learning aspect consisted of 6 indicators which were applying knowledge for the best benefit, using various learning strategy in every forms of learning, applying and interpretation of the information, using learning tools, self-evaluation, indicating the objectives. Aspect of skill and the ability in learning consisted of 3 indicators which were thinking skill, basic writing, reading and numeracy skill, information technology skill. Learning attitudes consisted of 3 indicators which were the understanding the value in learning, understanding the need of continual learning, happy learning. The important elements which promoted Lifelong Learning consisted of 11 indicators which were the attemtion to led oneself to learning, trust in the ability, high motivation in

learning, continual learning after graduate, love reading and researching, using various information as a references for decision making, goals in life, a continual self-improvement, a belief that learning could happen anywhere, seeking for knowledge, opening to the others' opinions. The result from the study of Lifelong Learning's indicators of the European Commission (2002) European Report on Quality Indicators of Lifelong Learning Brussels: European Commission showed 4 characters and 15 indicators. The first aspect was capability, skill and attitude which consisted of indicators which were 1) Literacy 2) Numeracy 3) New skill for the learning Society 4) Learning – to- Learn Skills 5) Active citizenship, cultural and social Skills. The second aspect was access and participation. Its indicators were 6) access to Lifelong Learning 7) participation in Lifelong Learning. The third aspect was resources for Lifelong Learning. Its indicators were 8) investment in LifeLong Learning 9) Educators and Learning 10) ICT in Learning. The fourth aspect was strategies and system development. Its indicators were 11) strategies for LifeLong Learning 12) coherence of supply 13) counselling and guidance 14) accreditation and certification 15) quality assurance. Sirichai Rintharatch (2010) had studied the Indicator of Lifelong Learning environment development and found 2 dimensions which were inside academic institute dimension and outside academic institute dimension. It could be concluded that there were 7 indicators for learners' qualification aspect, 11 indicators for learners' skill and attitude. Jitpinya Choomsai Na Ayuthaya (2008) had studied Lifelong Learning's characteristics of the senior with an aim to study the character of Lifelong Learner. The result showed that it consisted of 6 aspects which were analysis skill, yearning for knowledge, self-reliance, broad vision, learning skill, and language skill. Besides, learning skill in 21<sup>st</sup> century was also important as it was related to Lifelong Learning skill. Skills which were required for people in 21<sup>st</sup> century, from kindergarten to bachelor and Lifelong-Learning, (Wicharn Phanich, 2012, p.19-22) were literacy skill, numeracy, critical thinking and problem solving, creativity & innovation, cross cultural understanding, collaboration, teamwork and leadership, communications, information and media literacy, computing and ICT literacy, career and learning skills. There were also new concept about Future Skill: The study for 21<sup>st</sup> century which was conducted by the cooperation in Illinois for the skills in 21<sup>st</sup> century. Ken Kay, president of 21<sup>st</sup> century Skill Association, promoted 5 skills in the future which were learning and innovation

skills, life skills, information, media and technology skills, core subjects ; Thai language, Foreign language, Arts, Mathematics, Science, Geography, History, Economics, Government and Citizenship. Specific knowledge for 21<sup>st</sup> century were global awareness, financial, economic, business, and entrepreneurial literacy, civic literacy, health literacy, environmental literacy (Worapoj Wongkijroongreong and Athip Jitpreuk, 2011, p.118-120). The result of the Lifelong Learning study could be shown in the table 2.1

**Table 2.1 Analysis Lifelong Learning skill from education sector’s policy and related research**

Lifelong Learning Skill	Core basic education program (2008)	Jitpinya Choomsai Na Ayuthaya (2008)	Sirichai Rintharatch (2010)	Nittaya Sumredphol (2004)	Knapper ; & Cropley (2000)	Commission of the European Communities (2005)	Knowles (1985)	Candy ; Crebert ; & Olearly (1994)	Smith ; & Spurling (1999)	Murphy ; Tolley ; & Wilmot (2001)	Wichan Panich (2012)	Worapoj Wongkijroongreong and Athip Jitpreuk (2011)
Seeking for knowledge, reading and research		✓	✓	✓		✓		✓				
High motivation in learning, self-confidence			✓	✓	✓							
Good attitude towards learning			✓		✓					✓		
Wide vision and knowledge		✓		✓				✓				
Ability in seeking for knowledge, information choosing, relate and apply knowledge			✓	✓	✓		✓	✓	✓			
Clear objectives and intention to learn			✓	✓			✓					
Analysis skill	✓	✓	✓	✓	✓	✓	✓	✓			✓	
Language for communication skill	✓	✓	✓	✓	✓	✓			✓			
Basic learning skill, literacy and numeracy	✓	✓	✓	✓	✓	✓			✓		✓	✓
Social skill, cooperation, knowledge exchange, open to opinion	✓			✓	✓						✓	
IT skill	✓		✓	✓	✓	✓			✓	✓	✓	✓

It could be concluded from table 2.1 that Lifelong Learning skill means the learners’ capability or performance in knowledge seeking, researching, high motivation

in learning, self-confidence, good attitude in learning, wide vision and knowledge, the ability in information searching, information choosing, knowledge relation, and applying, clear objectives and intention to learn, analysis skill, language and communication skill, basic knowledge skill, literacy, numeracy, social skill, cooperation, knowledge exchange, opening to opinions, and IT skill.

## **2.1.2 Concept of teacher's role**

### **2.1.2.1 Definition and Importance of Teacher's Roles**

Role was the important. There were many definition given. Dictionary of Sociology, English-Thai Academic of Letters 1981 explained the definition of Role as duty or behavior which society defined and expected for an individual to act. Owen (1998, p.48) said that Role was the individual behavior when socialize, on duty and was expected the reaction. Levinson (1971, p. 32) summarized the meaning of Role as 1) social norm, expectation, prohibition, responsibility and others. It was bounded in social position which defined role by the expectation to responsibility than person. 2) the opinions of the authority and 3) the individual's act which related with social structure or it could be said that it's the way the authority should act. Good (1973) said that Role was the social position, commitment and behavior from a position to another one. Mead (1950, p.12) said that Role was the relationship process between behavior and responsibility. Couch (1965, p.170) said that Role was the expected act from society. It could be concluded that Role was the act of authority depending on the responsibility. The act would depend on self-expectation, regulation and social expectation. The structure of role consisted of a person or a group of people, behavior or act, and status or position.

### **2.1.2.2 Policy of Educational Section which relates to teacher's role in Learning Management in 21<sup>st</sup> Century and Learning Skill in 21<sup>st</sup> Century**

Teacher's roles according to the standard of The Teachers' Council of Thailand (1998, p. 33-34) had conducted 11 standard of manner and duty for teachers which were 1) academic activity on professional development 2) decision making based on the effect to the learners 3) aiming for learner development 4) developing a practical teaching plan 5) developing effective teaching media 6) preparing teaching plan by emphasizing on the efficiency to learners 7) systematic report on learners' quality

development 8) being role model to learners 9) creative cooperation in academic institutes 10) creative cooperation in community and 11) searching for information for development

**Role of Teacher according to National Education Act 1999** Office of Educational Reform (2001, p. 3) had defined the standard of teacher for they had the required character pertaining to the National Education Act 1999. According to the education management category 4, teacher meant staff who was responsible for teaching, developing curriculum and professional development along with management participation. The important indicators for the reformation were managing education focusing learners as a main (section 22), educational management focusing on the importance, knowledge, virtue, learning process and appropriate integration (section 23), applying research as part of learning process (section 24), managing learning everywhere and everytime, cooperation from every departments (section 24), learners evaluation progressively (section 26), allocation learning assessment by various ways and take the result as a reference in consideration (section 26), developing local course (section 27), applying local wisdom for teaching management (section 27), appropriate research for learner on learning development (section 30), insurance on learning, teaching and managing quality (section 47), developing learner's ICT skill for a continual lifelong self-learning (section 66).

**Teacher's Role according to the Core Basic Educational Standard 2008** It aimed for a qualification for learner according to the course's objectives. Teacher should (Ministry of Education, 2008, p. 26) 1) study and analyze each learner 2) defined a goal for learner 3) designed learning which would respond to different learners 4) provided learning environment 5) prepared appropriate media and activity 6) evaluated learner in various ways 7) took a result as a reference in developing teaching management.

#### **Teacher's Role in Learning Management focusing on Learner**

Somsak Poowiphadawat (2001, p. 1-2) had concluded that learner-centered principle were learning activities based on learner's need and interest, a chance for learner's participation, learner's knowledge management - a self reliance to create applicable skills, self-evaluation which would help learner to understand strong and weak points for the improvement, focusing on life skills which focused on study format and was relevant to Department of Curriculum and Instruction Development (2001,

p.7). Teacher's role in learning management focusing on learner was defined as a continual self-development by research and teaching design focusing on learner, a learning management by research process for teaching development and learning environment. They were relevant to Chanathip Pornkul (2000, p.12-14) who saw teacher's role as a convenience provider, teaching manager, learning environment creator, instructor, learner's behavior observer, supporter for learner to show behavior, question and answer provider to stimulate learner's thought. Titsana Khammanee (1999, p. 23-25) defined teaching management and evaluation as the required characteristics for teacher in teaching management focusing on learner. Kulwadee Paijit (2001) had studied Mathematics teacher's role in 5 aspects 1) teaching plan 2) help, support and reinforcement 3) learning environment 4) class management 5) examination and evaluation. Yon Choomjit (2010, p.91) defined the teacher's role and duty as the academic knowledge instructor, ethic and value teacher, learner's well-being care taker, learner's progress valuator, career instructor, academic activity provider, completing assignment and duty, overseeing school's property, continual self-learner, and being a role model. Wilai Tangjitsomkit (2011, p. 18) classified teacher's role into 3 roles which were general role, teacher to learner role, teacher to society role.

**Teacher's role in self-led learning management** Knowles (1975, p. 18) had presented compositions of self-led learning process. They were freedom environment, systematic teaching plan between teacher and learner, realization in teacher's and learner's requirements, clear objectives and directions in learning, activity design between teacher and learner, following the plan, evaluation between teacher and learner.

**Teacher's role in creative learning management** Brooks & Brooks (1999, p. 103–118) presented the principles of teacher's role in creative learning management. They were the acceptance in individual's diversity, applying general information to stimulate students' learning, word choice to encourage students in learning, a chance to show knowledge, , understanding student's idea before sharing the knowledge, helping students in problem solving, the interest in student's experience, giving time for students to answer the question, giving time for student to relate between old and new knowledge, responding the student's curiosity. Booncherd Phinyoanuntapong (1997, p.50) said about creative learning theory and teacher's roles. They were the interaction with the environment and the world outside, a chance to find the answer, learning by

doing, teacher as a supporter for student. Creative knowledge was from creative student who exchanged the meaning by interactions. Teacher's role wasn't just the teacher but to support and simulate the new concept which student could use it to explain the environment and situation. Somsak Sinthuwech (1999, p.54) explained the teacher's role in creative learning management. The teacher should encourage student to observe and see the problem, interact with student, encourage student to create and evaluate the idea.

### **Teacher's Role in 21<sup>st</sup> century Learning Management and 21<sup>st</sup> century**

#### **Learning**

Teacher's role was an important factor for 21<sup>st</sup> century learning management. Wichan Panich (2012, p.19-22) said that the teacher taught less but learn more. Teacher would have to design learning and provide the convenience for learning to student, learn by practice, learn by project-based learning, and do lifelong learning even after retirement. The life skills in 21<sup>st</sup> century were needed from kindergarten to university and lifelong learning which were 3R x 7C. 3R was Reading, (W)Riting and (A)Rithmetics. 7C was consideration skill and problem solving skill, creative and innovative skill, cultural-diversity understanding skill, cooperative skill, team-working skill, leadership, communication and IT skill, career skill and learning skill. There were also 21<sup>st</sup> century skills which were called "Skill for the Future" for teacher's development in order to manage learning process for students to have 5 skills which were Learning and Innovation Skill, Life and Career Skill, Information Communication and Technology Skill, Main-Subject Learning Skill, and Future Knowledge Skill. Schermerhorn, et al. (1991) had the concept on the factors which effected the role which should be consisted of Personal Characteristic Factor which were Population, Capability, Psychology. Operation factor which were Attempt in work, Motivation in work. Cooperation factor which were Time, Financial, Materials and Tools, Information, Training

**Conclusion of teacher's roles in learning support** The result from the report showed that there hadn't been a study in Teacher's role towards Lifelong Learning so it could be concluded in table 2.2

**Table 2.2 Analysis of Teacher’s Role in Learning Support from the Academic Institutes’ Policy and Related Study**

<b>Academic Institutes’ Policy and Related Study</b>  <b>Teacher’s Role</b>	<b>Core basic education program (2008)</b>	<b>Office of Educational Reform (1997)</b>	<b>The Teachers’ Council of Thailand (1998)</b>	<b>Department of Curriculum and Instruction (2001)</b>	<b>Knowles (1975)</b>	<b>Brooks; &amp; Brooks (1999)</b>	<b>Titsana Khammanee (1999)</b>	<b>Kulwadee Pajit (2001)</b>	<b>Wichan Panich (2012)</b>	<b>Schermerhorn, et al. (1991)</b>
Teaching Management	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Helping, Supporting and Reinforcement	✓	✓	✓	✓		✓	✓	✓	✓	
Learning Environment	✓	✓		✓	✓	✓	✓	✓		
Class Management	✓	✓	✓	✓		✓	✓	✓		
Follow Investigating and Evaluation	✓	✓	✓		✓	✓	✓	✓		
Teachers’ Characteristics			✓	✓					✓	✓

### **2.1.3 Synthesis Compositions and Indicators of Teachers’ Roles to Promote Lifelong Learning Skills of Students at the Basic Education Level**

#### **2.1.3.1 Indicator of Teachers’ Roles to Promote Lifelong Learning Skills of Students at the Basic Education Level**

##### **Teachers’ Roles to Promote Lifelong Learning Skills of Students**

There were many studies such as Pimphan Techacoopt (2001) concluded teacher’s indicators which were encouraging student to create new knowledge, student’s participation in learning, creating learning environment, evaluation, the ability in applying the knowledge in daily life, teacher’s role as the convenience provider. Sumol Amornwiwat (2002) had studied the indicators of the teacher which were Teaching plan both the contents, local wisdom and international knowledge, Learning environment, Motivation and Reinforcement for student to learn intensively, Caring for each student, Activity for student to show the knowledge creatively, Supporting the practice and self-development, Exchanging knowledge in the group, Using media for problem solving and finding knowledge and self-evaluation. It was relevant to the study of Suwan Suppayakhom (1999) and Chanathip Pornkul (2001) had defined the indicators of the teacher which were Learning environment for student, Caring for each student, Creating the situation or student to show the knowledge and creative thinking, Encouraging student to practice and do self-improvement, Group learning, Using media for

practicing, Using various learning resources. Pichet Anukul (2003) had concluded teacher's roles which supported Learning Management Focusing on Learner. knew each of the students, evaluation on student's potential, reinforcement and motivation, planning the study with with student, Instruction on study, supporting media and tools for studying, creating new knowledge, preparing learning environment, participation in evaluation from various sections. Nittaya Sumredphol (2004) had studied the development on the indicators of Lifelong Management. The result showed 16 indicators which were 1) supporting Life-Led Learning 2) learning focusing on learner 3) various ways of learning 4) feedback for student to develop the learning 5) evaluation in real situation 6) learning in approach strategy 7) the importance in learning process 8) analysis from the research 9) updating teaching contents 10) studying more research 11) research-based learning 12) supporting the research on Lifelong-learning teaching and applying the research 13) preparing various learning activity for learner 14) conducting evaluation as part of learning 15) the importance of minor assessment to check the progression and 16) learning from group of friend. There were 12 indicators on teacher aspect which were 1) capability in content and Lifelong Learning environment management 2) capability in Self-led-learning teaching 3) capability and skill in student-focused teaching 4) introducing learning resources to student 5) being role model for Lifelong Learning and putting effort in studying persistently 6) using textbooks and various research in teaching 7) undertanding in Lifelong Learning principles 8) knowledge manager – convenience provider and instructor 9) continual study 10) capability in ICT for teaching 11) good attitudes towards Lifelong learning's value and 12) accepting the aim of Lifelong Learning. Sirichai Rintarach (2010) had studied the development on the indicators of Lifelong Management. The result showed 16 indicators which were 1) integrated contents and various skills 2) research-based tudy which was applicable in daily life 3) environmental activity focusing on conditional study 4) outdoor learning 5) project-based learning 6) learning by practicing – environmental activity 7) exchanging knowledge with teacher's groups and philosopher in the community 8) planning for learning resources from inside and outside education institutes 9) increaing learning resources accessment 10) creating environmental learning connections 11) learning from experience 12) a chance for to study environment through integrated activities 13) creating environmental connections

between educational sections and local organizations 14) learning management which covered 3 characters – Environmental knowledge, Learning in environment, Learning for environment, 15) learner-based learning which supported Self-Led Learning 16) environmental learning management in every time and condition. There were 6 indicators for assessment and publishing which were 1) various evaluations by student, teacher and friends 2) various evaluation from real condition 3) reporting the assessment to student periodically 4) evaluation from the change of student's behavior 5) final assessment after course 6) long-term assessment 7) assessment from the operation and student's change of behavior. Komkrid Jankajorn (2008) had studied the concept in informal education development in supporting Lifelong Learning. The result showed 4 compositions which were 1) informal learning principles 2) activity supporting learning 3) learning-support factors 4) learning by experience. Umporn Ponggangsananun (2007) had studied on the Development of Nonformal Education Management in educational sections for supporting Lifelong Learning. It consisted of 8 compositions 1) philosophy and educational principles 2) course 3) learning management 4) learning assessment 5) experience and general educational development 6) management and Learning management 7) target group 8) participation of parents and community.

From the study it can be concluded that, the role of teachers in support students regarding teaching and learning management, help, support, and reinforcement, learning environment, classroom management, follow up, inspection and evaluation, teacher's characteristics and lifelong learning skill are as follows in table 2.3

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**Table 2.3** (continued)

Academic Institutes' Policy and Related Study	Teachers' Roles to Promote Lifelong Learning Skills of Students	Srichai Rintarach (2010)	Nitaya Sunnedhol (2004)	Umporn Ponggangsanannun (2007)	Komkrit Jankajorn (2008)	Jirinya Choonsai Na Ayuthaya (2008)	Knapper : & Cropley (2000)	Commission of the European Communities (2005)	Knowles (1985)	Candy ; Crebert ; & O'leary (1994)	Smith & Spurling(1999)	Murphy ; Tolley ; & Wilmut (2001)	Wichan Panich (2012)	Worapoi Wongkitroongreong and Athira Ittaveak- 2011	Office of Educational Reform (1997)	the Teachers' Council of Thailand (1998)	Department of Curriculum	Brooks; & Brooks (1999)	Tisana Khammanee (1999)	Kulwadee Pajit (2001)	Schemhorn. et al. (1991)	
	4. Classrooms are under the rules and regulations and do not apply punishment or blame system	✓	✓																			
	5. Emphasize differences and limitations of each student	✓	✓															✓	✓			
	<b>The role of teachers regarding the follow up, inspection, and evaluation:</b>																					
	1. Various evaluation in accordance with reality	✓	✓	✓																		
	2. Provide feedbacks so that students can improve their learning	✓	✓							✓	✓											
	3. Emphasize small evaluations during learning in order to check on improvement	✓	✓																			
	4. Assign the evaluation as a part of learning	✓	✓		✓										✓	✓	✓	✓	✓	✓	✓	✓
	5. Various ways of evaluation that can be done by students, teachers, and friends	✓																✓				

**Table 2.3** (continued)

Academic Institutes' Policy and Related Study	Teachers' Roles to Promote Lifelong Learning Skills of Students	The role of teachers regarding teacher's characteristics:								
		1. Teachers have knowledge and ability regarding teaching methods and environment management that support lifelong learning.	2. Have teaching ability that support self-learning	3. Have ability and teaching skills that emphasize students	4. Have an understanding of lifelong learning	5. Have good attitude and value toward lifelong learning	6. Know learning resources and able to suggest them to students	7. Be a good role model of lifelong learning, express the yearning and love of learning	8. Provide conveniences to students and take care of the learning	9. Always do research and develop teaching
Schemmhorn, et al. (1991)		✓								
Kulwadee Pajjit (2001)										
Tisana Khammanee (1999)										
Brooks; & Brooks (1999)										
Knowles (1975)										
Department of Curriculum									✓	
The Teachers' Council of Thailand (1998)								✓		
Office of Educational Reform (199)										
Worapoj Wongkitpoonreong and Athin Harnsak 2011										
Wichan Panich (2012)							✓			
Murphy ; Tolley ; & Withnut (2001)										
Smith & Spurling(1999)										
Candy ; Crebert ; & O'leary (1994)										
Knowles (1985)										
Commission of the European Communities (2005)										
Knapper ; & Cropley (2000)										
Jirinya Choomsai Na Sathava (2008)										
Konkrit Jankajorn (2008)										
Umporn Pongangsanun (2007)										
Nitaya Sumredphol (2004)		✓								
Sirichai Rintarach (2010)			✓		✓	✓	✓	✓	✓	

**Table 2.3** (continued)

Academic Institutes' Policy and Related Study	Srichai Rintarach (2010)	Nitaya Sumredphol (2004)	Umporn Pongangsanun (2007)	Konkrit Jankajorn (2008)	Jipinya Choomsai Na Suthava (2008)	Knapper ; & Cropley (2000)	Commission of the European Communities (2005)	Knowles (1985)	Candy ; Crebert ; & O'leary (1994)	Smith & Spurling(1999)	Murphy ; Tolley ; & Wilmut (2001)	Wichan Panich (2012)	Worapoj Wongkitpoongreong and Athin Harnsak 2011	Office of Educational Reform (199)	The Teachers' Council of Thailand (1998)	Department of Curriculum	Brooks; & Brooks (1999)	Tisana Khammanee (1999)	Kulwadee Pajjit (2001)	Schemmerhorn, et al. (1991)
<b>Teachers' Roles to Promote Lifelong Learning Skills of Students</b>																				
<b>Lifelong learning skill:</b>																				
1. Ability or expression of students in the love of yearning for knowledge, love reading and research	✓	✓			✓	✓			✓											
2. Having high motivation in learning, having a self-confident	✓	✓				✓														
3. Having good attitude toward learning	✓					✓					✓									
4. Having a wide vision		✓			✓				✓											
5. Full of knowledge, having ability to seek for information, know how to choose information and link knowledge and know how to use information	✓	✓				✓		✓	✓	✓										
6. Having goals and intention to always learn	✓	✓						✓												
7. Having analytical	✓	✓			✓	✓	✓	✓	✓			✓								
8. Language usage, and communication skills	✓	✓			✓	✓	✓			✓										
9. Having basic learning skill, able to read, write, and calculate	✓	✓			✓	✓	✓			✓		✓	✓							
10. Having social skill, able to work with others, exchanging knowledge with others, listening to others' opinions		✓			✓	✓	✓					✓								
11. Having information technology skill	✓	✓			✓	✓	✓		✓	✓	✓	✓	✓							

In table 2.3 conclusion of Teachers' Roles to Promote Lifelong Learning Skills of Students at the Basic Education Level are as follows.

**The role of teachers regarding teaching and learning management:** There are twelve variables including; teaching and learning management that supports self-learning, learning from groups of friends, teaching by integrating the context, learning method, and various skills and using research as a fundamental in order to integrate knowledge from various subjects in order to apply those knowledge into real life, arrange context and activities relevant to interests and differences between people, organize activities for students to practice their thinking skill and encourage them to yearn for knowledge so that they can learn by doing and learn from various sources. Moreover, teachers should arrange teaching that emphasizes on students, focus on learning process and its reflections rather than students as a receiver, provide up to date learning context, and organize activities that students are able to do research and read more.

**The role of teachers regarding help, support, and reinforcement:** There are six variables including; support students to have necessary skills in order to seek for knowledge, encourage, support and provide convenience to students, suggest and support various learning sources, suggest guidelines to seek for right knowledge, support students to have thinking, analytical, and practical processes, and know how to seek for knowledge and able to learn by themselves, as well as implant the yearning for knowledge.

**The role of teachers regarding learning environment:** There are five variables including; arrange learning environment that is relevant to abilities, interests, and needs of students, create learning environment that support self-learning, learning with others, as well as ability to create knowledge by themselves, organize learning environment that is challenging, encouraging, and motivating so that students are confident, provide atmosphere that is friendly so that students can discuss and express their opinions, and arrange the environment and atmosphere outside classrooms that support learning.

**The role of teachers regarding classroom management:** There are five variables including; classrooms offer learning atmosphere, classroom arrangement is flexible according to students' convenience and activities, learning management is

flexible without the limitation of time and place, classrooms are under the rules and regulations and do not apply punishment or blame system, and emphasize differences and limitations of each student.

**The role of teachers regarding the follow up, inspection, and evaluation:**

There are five variables including; various evaluation in accordance with reality, provide feedbacks so that students can improve their learning, emphasize small evaluations during learning in order to check on improvement, assign the evaluation as a part of learning, various ways of evaluation that can be done by students, teachers, and friends.

**The role of teachers regarding teacher's characteristics:**

There are nine variables including; teachers have knowledge and ability regarding teaching methods and environment management that support lifelong learning, have teaching ability that support self-learning, have ability and teaching skills that emphasize students, have an understanding of lifelong learning, have good attitude and value toward lifelong learning, know learning resources and able to suggest them to students, be a good role model of lifelong learning, express the yearning and love of learning, provide conveniences to students and take care of the learning, and always do research and develop teaching.

**Lifelong learning skill:**

There are eleven variables including; ability or expression of students in the love of yearning for knowledge, love reading and research, having high motivation in learning, having a self-confident, having good attitude toward learning, having a wide vision, full of knowledge, having ability to seek for information, know how to choose information and link knowledge and know how to use information, having goals and intention to always learn, having analytical, language usage, and communication skills, having basic learning skill, able to read, write, and calculate, having social skill, able to work with others, exchanging knowledge with others, listening to others' opinions, and having information technology skill.

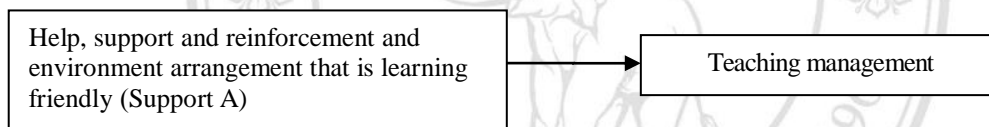
### **2.1.3.2 The model of relationship of elements and indicators regarding the role of teachers to Promote Lifelong Learning Skills of Students.**

From the study of the relationship lifelong learning skill, teaching management, help, support and reinforcement as well as learning environment arrangement, classroom management, follow up, inspection and evaluation, and teachers' characteristics, Model Anonuevo (2001, p.12) mentioned that teaching management is one of the factors that plays an important role resulting in lifelong learning. Learning process should start with the basic education. Moreover, Nittaya Samredphon (2004, p.39) explained that teaching management is the important thing that supports the occurrence of lifelong learning skill, which can be divided into two periods including; the first period is the primary learning which consists of continuous learning such as mandatory learning at schools in which the researcher called basic education and learning and training after the basic education, which the researcher called higher education. The primary learning is very important as it is a preparation for a person to be able to learn continuously in the second period by developing students to have a characteristic of lifelong learning. For the second period, it is about learning after finished learning in the primary period, which is the learning, occurred in adults or working ages. It is a very long term learning happened from the yearning for knowledge of the learners themselves. In addition, those who were well-prepared to be ready to continue learning will tend to maintain their learning further, which the relationship is shown as below;



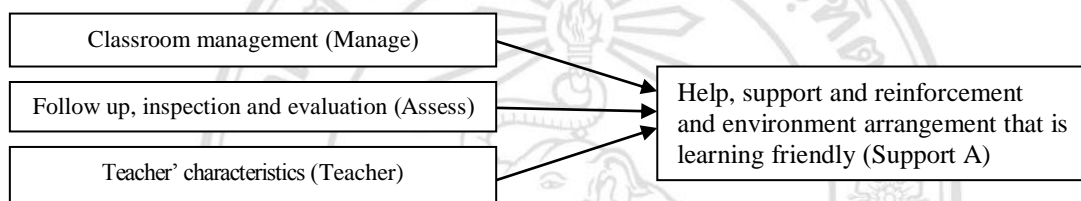
Charles Hummel (1998) suggested that from a perspective of lifelong learning, help, support and reinforcement, and learning environment arrangement that is learning friendly is one of important factors of teaching management that supports lifelong learning skill. There should be an encouragement in order to encourage students to pay attention, to create motivation, develop creative thinking, support them to apply knowledge into situations outside schools so that they can develop their attitudes toward the opened world, integrate different subjects, and assign students to use various learning methods.

Furthermore, Kulawadee Paijit (2001, p. 66) said that teaching management will success or not is depending on the role of teachers to motivate and support learners to stay alert and eager to find answers by themselves. In addition, teachers should create a warm and friendly atmosphere, as well as allow students to listen to each other's ideas, which this will offer an effective teaching management. Moreover, Knowles (1975, p.18) proposed that teaching process should contain important elements in order to create the atmosphere of freedom, reliability, giving honor, and paying respect to regulations and others as human beings. Environment that is good for learning will support the learning atmosphere, as well as there should be activity planning so that teachers and students learn together systematically. Regarding teaching management of the 21 century (Wicharn Panich, 2011, p. 19-22), teachers should teach less and learn more, moreover, teachers should design learning and provide convenience as well as support learning so that students can learn from doing resulting in the occurrence of learning in their brains, which the relationship can be shown as below;

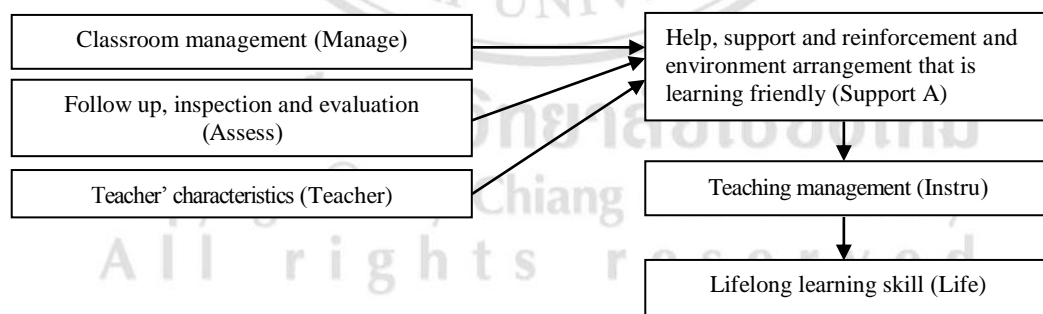


Teachers have an important role to create the atmosphere that is learning friendly as well as take care and help learners to learn. According to the learning management guideline of core curriculum of basic education, the year of 2008, in order to produce qualitative students as per the curriculum (Ministry of Education, 2008, p.26), which is relevant to Department of Academy (2001, p.7) that summarized that teachers' characteristics should consist of a role in teaching management that support atmosphere and environment that is learning friendly, provide consultation, reinforcement, and behave as a good role model so that students can learn. In addition, Chanathip Pornkul (2000, p.12-14) mentioned that classroom management is an important part in order to help, support and reinforce, which teachers will be a person who provides conveniences, arranges atmosphere or environment for learning, as well as, guides or suggests ways so that students will be able to seek for knowledge. Furthermore, Kulwadee Paijit (2001, p. 67) conducted a study regarding roles of teachers in classroom management, follow up, inspection and evaluation, and found out that those elements are important for help and

support learning. If teachers emphasize classroom management, have disciplinary control methods in classroom, try to learn students' behavior, find motivation and attitudes that affect their behavior, and provide consultation so that the classroom management goes smoothly. Moreover, teachers should follow up and take care of students, observe their learning behavior, follow up their learning development, and check their performances with honesty. Teachers and students should cooperate in order to design the evaluation by doing the evaluation during learning, and emphasize the evaluation that shows improvement and development of students for support students' learning according to their abilities. These can be done as a guideline to develop learning process and teachers' roles, which the relationship can be shown as follows;

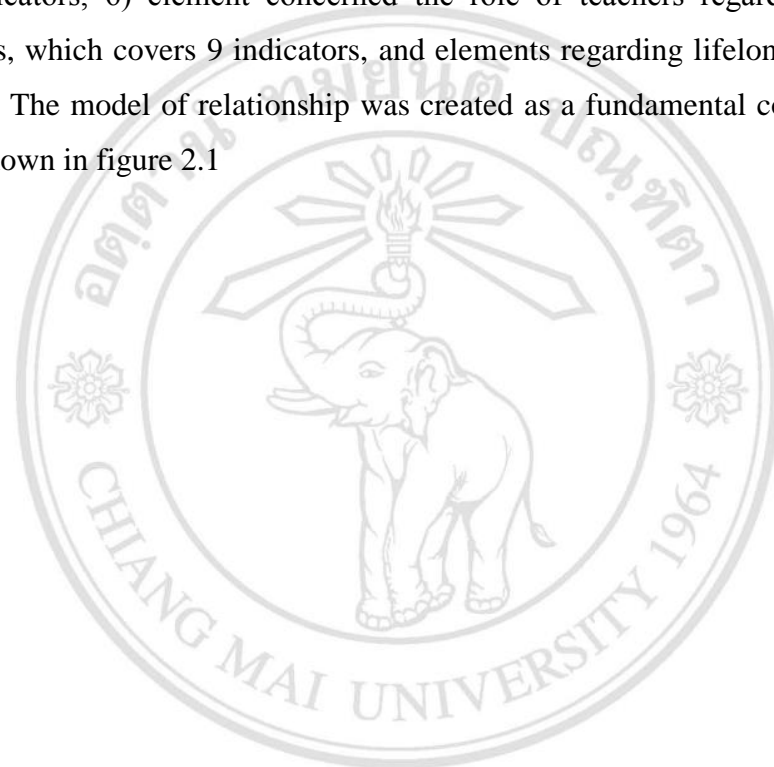


This can be concluded that teaching management directly influences lifelong learning skill, and elements regarding help, support and reinforcement, learning atmosphere (Support A), classroom management, follow up, inspection and evaluation, and teacher's characteristics indirectly influence on lifelong learning skill, which can be seen from the figure below;

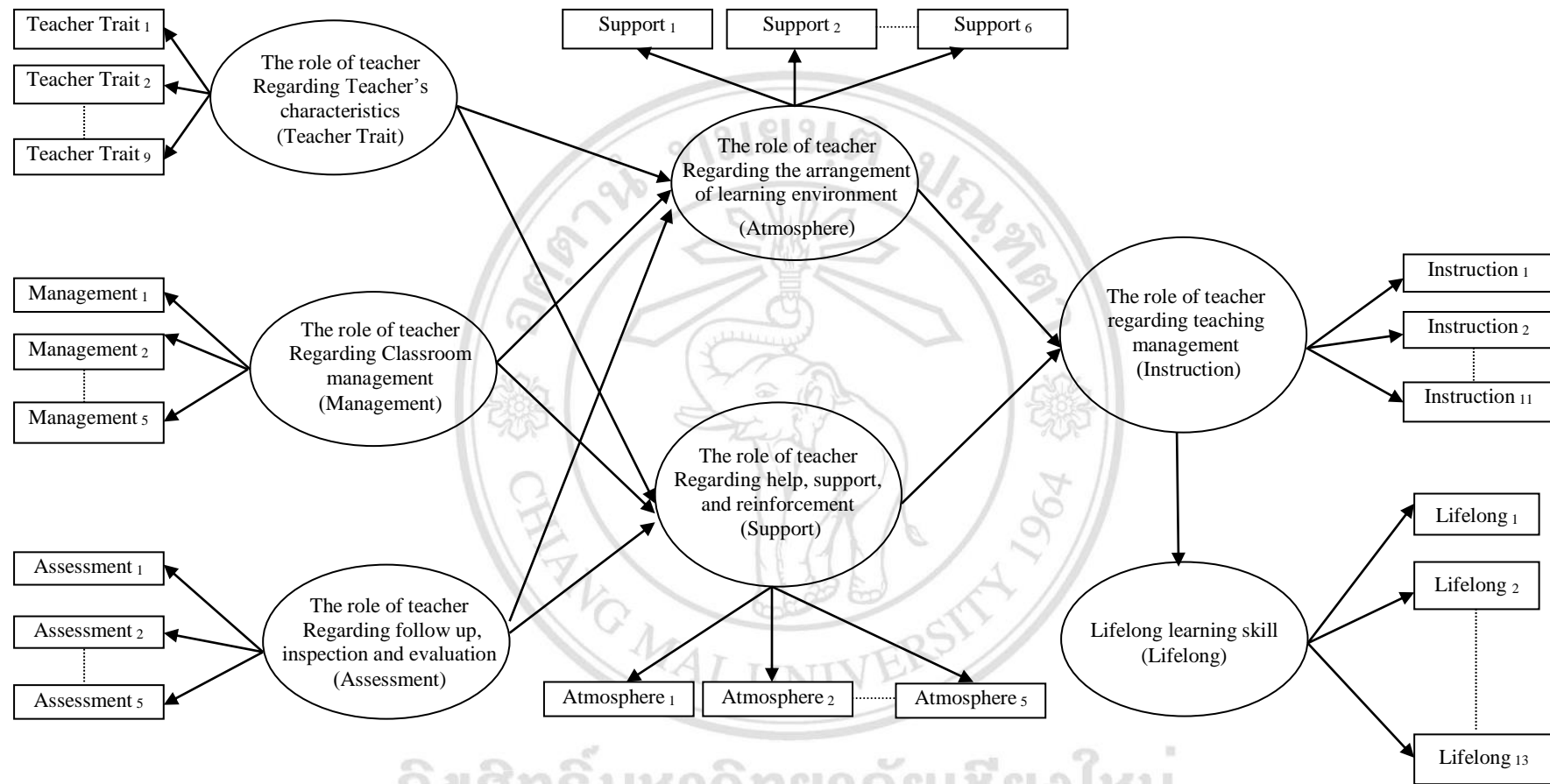


The researcher applied elements and indicators that obtained from document synthesis and related research and created the model of the relationship between elements and indicators that are connected to teacher's roles in the support of lifelong learning, in order to set as a fundamental framework before doing research. In addition, the model of relationship was created from the group of indicators that are connected to many elements such as elements and indicators of teacher' roles, which included; 1)

element concerned the role of teachers regarding teaching management, which covers 12 elements, 2) element concerned the role of teacher regarding help, support, and reinforcement, which covers 6 indicators, 3) element concerned the role of teachers regarding learning environment, which covers 5 indicators, 4) element concerned the role of teachers regarding classroom management, which covers 5 indicators, 5) element concerned the role of teachers regarding follow up, inspection and evaluation, which covers 5 indicators, 6) element concerned the role of teachers regarding teacher's characteristics, which covers 9 indicators, and elements regarding lifelong learning for 11 indicators. The model of relationship was created as a fundamental concept for the research as shown in figure 2.1



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**Figure 2.1** The model of the relationship of elements and indicators regarding the role of Teachers' Roles to Promote Lifelong Learning Skills of Students at the Basic Education Level from document synthesis and related research

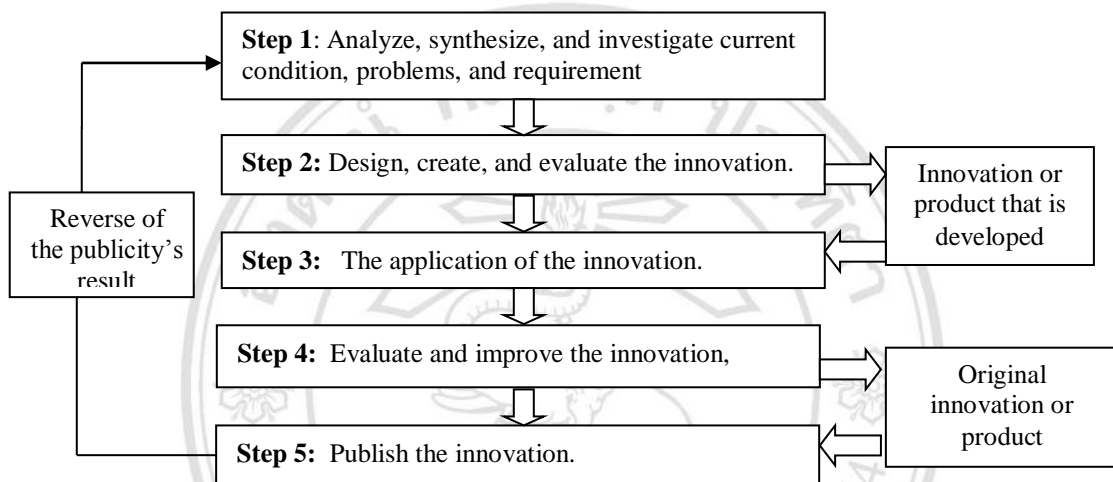
## **2.2 Research and the development of evaluation form**

### **2.2.1 Meaning of the concept and the process of research and development**

Many academicians and others who are related to education have given various meaning of research and development such as Rattana Buason (2009, p. 13) has given the meaning of research and development, which usually is called “R and D”, that it refers to the development of innovation or product using research process as a tool to operate. The important target of research and development is to obtain the innovation or product that is the original and will be able to use to solve problems. In addition, Borg, Walter R, and Gall Meredith D (1983, p.772) mentioned that research and development regarding education is the education development using research fundamental to improve, change or develop education, it is used as the process to develop and check the quality of education product, as well as, is a technique that will increase the potentiality of education research in order to result education management. There are two differences between educational research and development and educational research, which are 1) the objective of educational research is to find new knowledge using basic research, or aim to find answers using applied research, however, educational research and development aims to develop and check the quality of educational product, and 2) the application, there is a gap between research’s result and the application in educational research, that is to say, there are many research’s results on shelves and not being used, so academicians and researchers found the way to reduce the gap by using “research and development”. To conclude, educational research and development refers to the process of education and research in order to seek for new innovation and apply it to solve problems or develop any work in reality. Moreover, research and development contains the operational process that is systematical as well as the application of new innovation in order to test and develop many times for the best innovation. It is the process of study and research that seek for innovation to use in problem solving or develop the quality of education systematically, focusing on the test of innovation to develop education’s quality more than focusing on finding answers for learning. There might be many development in order to get the best innovation.

## The procedures and process of research and development

Research and development (Rattana Buason, 2009, p. 1-3) consist of five important processes including; step one, analyze, synthesize, and investigate current condition, problems, and requirement. Step two, design, create, and evaluate the innovation. Step three, apply the innovation. Step four, evaluate and improve the innovation, and step five, publish the innovation.

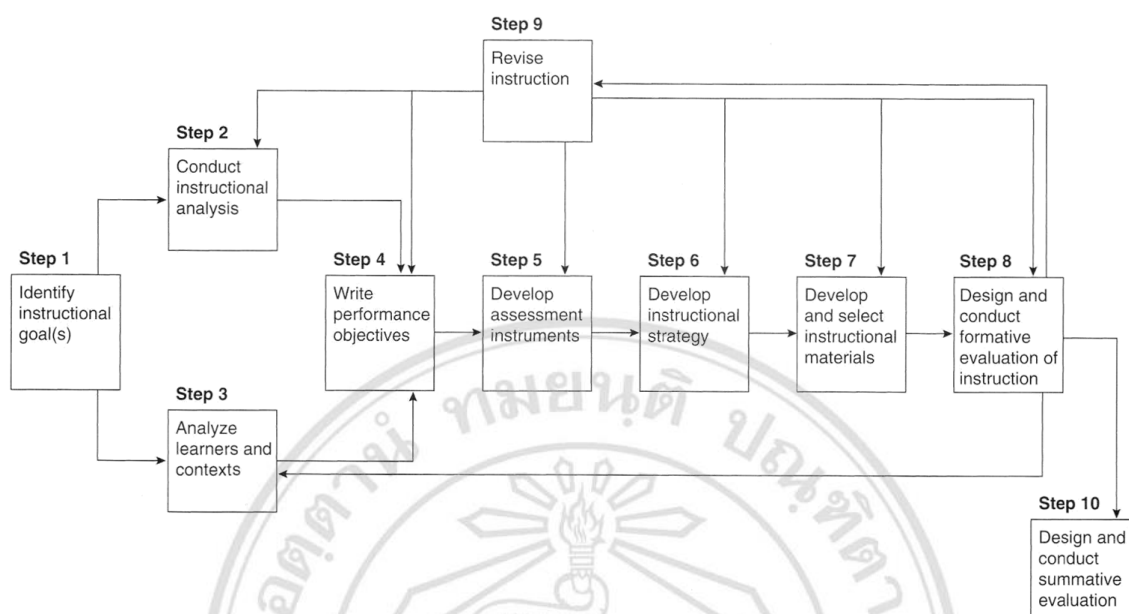


**Figure 2.2** Steps of research and development

Water dick, Lou Carey, and James Carey (Gall, Meredith D., at al., 2007, p.589 – 594) mentioned the important steps of educational research and development that are being used widespread, which is the system that was developed from the design of Dick and Carey as shown in the figure below.

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## Step of Systems Approach Model of Educational Research and Development



**Figure 2.3** The form of teaching research and development of Walter Dick, Lou Carey, and James Carey (2007,p.590)

The circle of research and development consist of 10 steps including; step 1; set the objective of teaching, step 2; analyze the teaching, step 3; analyze students and their roles, step 4; write the behavioral objectives, step 5; develop criteria, step 6; develop teaching strategy, step 7; develop and choose teaching materials, step 8; design the evaluation form for improvement, step 9; improve the teaching and apply the evaluation's results to improve teaching management, which the improvement can be done starting from step 1 to step 7 depending on the results, and step 10; design, complete the evaluation and summarize the results, it is the evaluation after finished teaching in order to value the teaching program.

Borg, Walter R. and Gall, Meredith D. (1983, p.776-788) have explained about the important steps of educational research and development which included 10 steps as follows; 1) research and data collection, 2) research and development planning, 3) the development of original product, 4) experiment or test the product in the real field, experiment or test the product for the 1<sup>st</sup> time (R1) and apply the designed product to the real usage in order to test the primary quality of the product. 5) improve the main product for the 1<sup>st</sup> time (D1); apply the information obtained from the experiment in

order to improve the product, 6) test the product for the 2<sup>nd</sup> time (R2); test the quality of the improved product, 7) improve the product for the 2<sup>nd</sup> time (D2), 8) test the product for the 3<sup>rd</sup> time (R3); test the quality of the product, 9) improve the product for the 3<sup>rd</sup> time (D3), 10) publish and operation; apply the information obtained from step 9 and make adjustment for further production and publish. Sometimes this kind of research is called R&D (Research and Development), or R and D, which D refers to publish of products as well.

In conclusion, educational research and development is the educational process which aims to find new innovations for solving problems or development. It contains systematical operation as well as the application of innovation, which such innovation can be developed again and again in order to find the best innovation. It is the important process that helps solve problems or improve the education system. However, steps and procedures for research and development might not be in the fixed form but depending on how researchers apply ideas appropriately and relevant to their research. The researcher applied the concept of research and development of Rattana Buason (2009, p.1-3) into the designation of educational objectives, which covers the process of analysis and synthesis, the investigation of current condition, problems about the role of teachers regarding the support of lifelong learning, the design or creation of innovation, which is the teacher's role evaluation form concerning the support of student's lifelong learning, the application of innovation, evaluation and improvement of innovation, and the preparation manual and innovation publishing. Moreover, in the process of research operation, the researcher applied the circle of research and development for teaching of Walter Dick, Lou Carey, and James Carey (2007, p.589-594) and Borg, Walter R. and Gall, Meredith D. (1983, p.776-788) as a guideline for the research's process that is relevant to educational objectives assigned such as plan and design target of research and development, analyze elements and indicators regarding the role of teachers in the support of student's lifelong learning (R1), improve and develop elements and indicators (D1), develop the form of evaluation and usage manual, develop evaluation program as well as test the evaluation by teachers and experts (R2), develop and improve (D2), apply the model with the school's sample group and evaluate the quality

of model (R3), improve and develop the evaluation form, usage manual, and evaluation program, as well as prepare a complete report (D3).

## **2.2.2 The development of evaluation form**

### **2.2.2.1 Meaning, concept of evaluation, and evaluation form**

“Evaluation” or “performance evaluation” refers to the process of data collection and analysis for decision making of doing research, measurement, report, maintenance, estimation, and consideration. Somwang Pithiyanuwat (2010, p.1) has given the meaning of evaluation as it is the process of obtaining the information in order to use for accomplish goals. The focus of evaluation is to gather and analyze information systematically to get the information that can be used to value something. In addition, Sirichai Karnjanawasee (2002, p. 151) concluded that evaluation refers to the process of study using research methods to investigate and achieve the target, as well as to suggest information for decision making and it is the value judgment of the thing that was aimed to evaluate. Nongluck Wiratchchai (2002, p 151) summarized the meaning of evaluation from many experts that assessment will be decided without focusing on the conclusion of evaluation, such as student evaluation, employee evaluation, and requirement evaluation, etc. which this will lead to the process of evaluation. So, it can be said that evaluation is the meaning of assessment that is broad and covers everything. Furthermore, Pitsanu Fongsree (2006, p.4) said that evaluation refers to the process of making a value judgment on something using information or the result of measurement to compare with the designed criteria. So, it can be concluded that evaluation means the process of making a value judgment on something by using the measurement’s results to compare with the assigned criteria, and the evaluation’s results can be used in other decision makings in order to plan for further operations. The evaluation is important for work management in various filed because it brings useful information, leading to effective operation.

Regarding the meaning of model, there are various definitions such as according to research and statistical dictionary (Supahit Wongwiwatnukit, 2011, p.178) provided the meaning of model as a framework, structure, symbol or mathematic and statistical

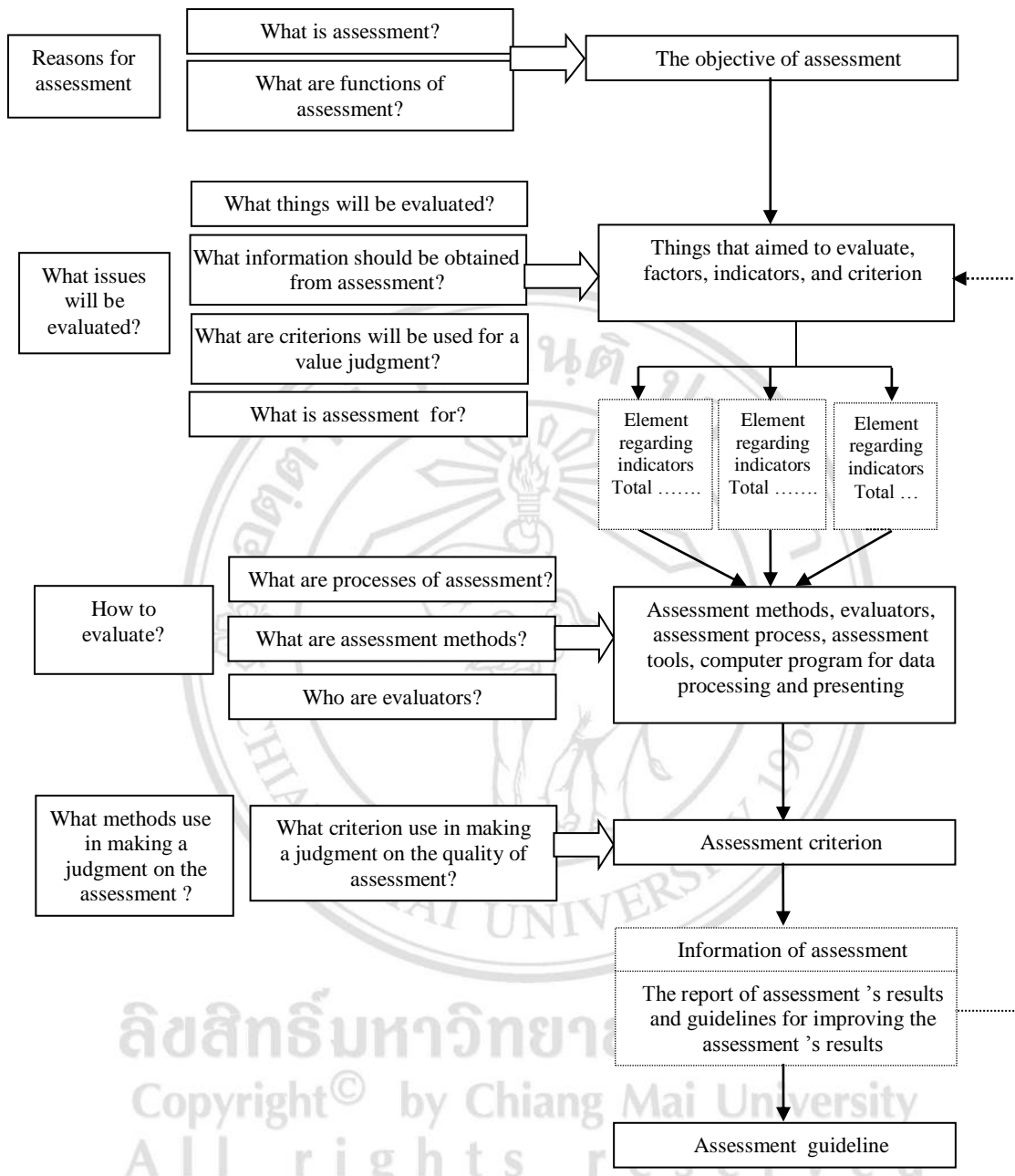
equation that shows the concept and scope of the relationship between research variables and it is being used as a plan for doing research in each step so that research's questions can be answered correctly. In addition, Robbins, S.P (1993, p.44) said that model refers to things that are abstract, which helps to understand things easier, which model in general should contain at least three aspects including objective, variable, element or context, and the relationship between variable, element or context. Sirichai Kanjanawasee (2009, p. 46) mentioned that model is the real model that use as example and shows the relationship between information, symbol, and system principle. It is the example of operation that displays the relationship between each part such as descriptive model, picture model, and mathematical model. Rattana Buason (2007,p. 25) explained that evaluation model is the presentation of the evaluation theory model, which shows systematical relationship between parts or anything that are related to the evaluation. The evaluation model will help to understand about evaluation systematically, which Yaowadee Rangchaikul Wiboonsree (2003, p. 27) pointed out that evaluation model is to apply theories, guidelines and frameworks in order to develop so that it is easy to translate meanings of each events. Model is an abstract that helps people to understand circumstances or truth easier, which general model should contain of at least three aspects, which are objective, variable, element, or context, and the relationship between variables.

Thus, it can be concluded that model refers to things that a person developed from concepts, theories, or experiences in order to present it as circumstances and can be used as guidelines. Evaluation model is to bring theories, guidelines, and framework to develop into abstract guidelines according to real conditions that connected the relationship from the evaluation concept to the evaluation plan, which shows the relationship between related points. General model should consist of three important things which are objective, variable, element, or context, and the relationship between variables as well as types of evaluation model.

### **2.2.2.2 The concept of assessment model development**

The operation regarding assessment requires planning in advance which is model designation or assessment model development, the assessment model is about explanation of activities that the evaluator did, or it is the designation that what activities the evaluator should do in order to use it as a guideline for the valuation. Nevo (1983, p. 117-126) presented processes to develop the assessment by presenting as the main questions as follows; 1) what is the definition of assessment?, 2) what is the function of assessment?, 3) what are things that need to be evaluated?, 4) what kind of information should be obtained from assessment?, 5) in the value judgment of the evaluated item, what criterion should be based on?, 6) what is assessment for?, who are the core stakeholders?, what are duties of each groups? and who will be the judge of the assessment?, 7) what are processes of the assessment?, what method should be used to find the assessment's answer?, 9) who should be the evaluator?, and what characteristics they should have?, 10) what measurement should be used to specify the quality of the assessment?. In addition, Sirichai Karnjanawasee (2009, p. 55-60) has asked four main questions in order to use the obtained information for activity planning of the assessment process, including; 1) why there should be an assessment?, it is the question that helps indicating the assessment's goal, 2) what should be evaluated?, it helps to analyze the items that are being evaluated, 3) who to evaluate?, this question will help to design a guideline or a way to build assessment tools, 4) what methods will be used for determination?, this will help in the consideration of criterion and make a value judgment on the evaluated items.

Furthermore, from the study of concepts and theories of assessment model development, it revealed that there is no fixed model for the assessment and most of the evaluators usually use concepts and theories to develop and support to make an assessment that is appropriate with their work. Therefore, in this research, the researcher applied the concept of Nevo (1983, p. 117-126) and Sirichai Karnjanawasee (2000, p. 55-60) which are relevant to each other, as a guideline of the development of assessment model for teacher's role in order to support Lifelong Learning skill. The assessment model consists of; 1) the objective of assessment, 2) things that are being evaluated, 3) assessment methods, 4) assessment criterion, 5) assessment report and the guideline suggesting to develop the assessment's result.



**Figure 2.4** The relationship of the guideline to develop assessment model

### **2.2.2.3 The objective of assessment**

Sirichai Karnjanawasee (2009, p.8-9) discussed about the objective of assessment that the evaluators believe that assessment will lead to changes and development, so if there is any assessment for some things, people should focus on the change and development of such things. However, the belief of the objective of assessment is different which can be divided into two main types, which are; 1) utilitarianism, it refers to the creation of happiness and benefits to societies. The assessment will be valuable only if it is useful and its results can be developed for the most benefit for many others. Therefore, the evaluators usually focus on the assessment that can offer useful information. 2) Pluralism, the targets of assessment is not only one target or not only for the purpose of happy society, but it can also response to other targets such as conduct an assessment in order to show the mechanism of authority to follow up, control and take care. So, this group of evaluators focuses on the assessment that contains data collection according belief and experiences of the evaluators themselves in order to decide the value of evaluated issues according to their expertise. At the same time, they try to build faith and reliability so that the assessment's results are acceptable among those who use the information. To concluded, the objective of assessment refers to the highest target of the assessment, which in the study of assessment model, the researcher has designed the objective of assessment so that teachers receive reversed information as a guideline to improve their roles and support their students in Lifelong Learning skill.

### **2.2.2.4 Items that are intended to be evaluated, the concept of factors, assessment indicators and criterion**

**The meaning of indicators:** There are many other words use for the word indicator in Thai language, however, most of educational research usually use the word indicator which Padung Phupat (2005, p. 170) has given the meaning of indicator as; a message that indicates the condition of a system or tools that use in follow up. The indicator is empirical data that indicates the performance of an organization if it is successful or not. The indicator is like estimation of things, consisting of various connected variables in order to tell the condition or circumstance of such system.

Regarding the indicator that use for indicating volumes should be defined as numbers, which Rattana Buason (2007, p. 34) stated that indicators refer to joined variables or any characteristics that can be observed which reflects or indicates something that is abstract. In addition, Sirichai Karnjanawasee (2009, p.82) mentioned that indicators refer to factors, variables, or values that are observable which indicate statuses or reflect conditions of performance resources or performance results. In conclusion, indicators refer to variables or values that are observable which indicate or point put something, tell status, or performance results, which reflect something abstract.

**Types of indicators:** There are various types of indicator, which there are many ways and criterions to categorize educational indicators. Johnstone (1981, p. 15-22) divided ways to categorize indicators as follows;

1. Categorize by using variables that are indicators, which can be divided into three types; 1) representative indicators; use in planning and management research by selecting only one variable to reflect one aspect of the system, 2) single indicator; information will be divided into parts for the explanation of each element of the system, instead of using one of the indicators to explain characteristics, 3) compound indicators; it is a combination of related indicators and the value obtained from this kind of indicators will be in a form of the variable mean which helps explain the condition of issues that need to be studied. Moreover, academicians agreed that compound indicators can be trusted more than single indicator.

2. Categorize by using systemic viewpoint, which usually is divided into three big groups according the systemic concepts, including factors, processes, and products. The characteristics of these three groups are as follows; indicator for factor, which will indicate the condition of factors, indicator for process, which will tell the condition of system management, and indicator for product, which will indicate the condition of products obtained from the system.

3. Categorize according to the comparison of translation, which there are three types such as; group indicators, refer to the indicator that the translation is compared to the group, criterion indicators, refer to the indicator that the translation is compared to the set criterion , and original indicators, refer to the indicator that the translation is compared to the original condition at different period of time.

4. Categorize according to conditions/ measurement including indicators that measure in complete value and indicators that display complete numbers of value and the obtained values will be compared to other values.

5. Categorize according to period of time such as indicator that shows its value at a period of time and it is the indicator that gives the exact value at a period of time.

6. Categorize according to measurement, which included indicators that indicate all conditions at every level.

Regarding the research, the researcher used educational indicators by applying the indicator guideline as a basic concept in order to develop indicators.

**The important characteristic of indicators:** Johnstone (1981, p.2-6) summarized the characteristic of indicators which leads to a better understanding of definition of indicators, there are five aspects; 1) indicators should indicate information regarding the studied issue in broadly, 2) indicators are different from variables, 3) the value of indicators shows quantity, 4) the value of indicators shows information at a period of time, 5) indicators are a basic unit for research theory development for in order to achieve new theory . In addition, Ewell, Peter T. & Jones, Dennis, D. (1994, p.5) stated that there are six good characteristics of indicators such as; it can be applied to use in terms of policy, it can translate to correct meanings, it can measure cover everything, it contains appropriate comparison criterion , and it is accurate and gives confident which can be done in reality. Moreover, Hart, C. (1981, p.10) mentioned that effective indicators should contain the following characteristics such as be relevant to the point, easy to understand, and reliable, which Sirichai Karnjanawasee (2009, p. 84-86) explained that good characteristics of the indicator should consist of five aspects including, correct, accuracy, fair, fast, and convenience.

In conclusion, from the study of the characteristic of good indicators revealed that it is about the information related to the condition that needed to be studied which can be designed as quantity or numbers, which is accurate, exact, detailed, easy to understand, fair, and relevant to the point. Moreover, good indicators are reliable that can be compared to the set criterion , as well as provide clear truth to others.

**The development of indicators:** There are four main aspects (John Stone, 1981 p.33-38), which are 1) ways to define or give definition for indicators, 2) the selection of

variables that are factors of the studied issue, 3) the definition of ways to combine variables, and 4) the definition of importance of each variable that will be combined into indicators. Decision making in each step regarding the development of such indicators are related to the value of indicators that obtained from calculation in the final process for applying in the translation of the studied issue. So, each process should be considered and inspected carefully so that developed indicators are relevant to the studied issue and its objectives.

**Designation methods or definition of indicators:** It can be divided into three main methods including the theoretical definition, the empirical definition, and practical definition, which each method can be summarized as follows (Rattana Buason, 2007, p. 209-210);

1. The development of indicators using the theoretical definition is the development of indicators by grouping variables that contain interesting relationships or characteristics, then rank or prioritize those using reasons or theories as a base in order to synthesize those variables into indicators. In addition, researchers or people who created indicators will not use their personal experiences or opinions to define, but select small variables, combine them into indicators and prioritize small variables using the developed formula or indicator model.

2. The development of indicators using the empirical definition is the development using the analyzed information and then group them according to their relationship as well as prioritize those variables using statistical methods as a fundamental such as the analysis of factors, categories, and Canonical Correlation, which it is definition that needs theories and research document as a base in order to define what small variables are in such indicators, ways to combine small variables into indicators, and prioritize each variable using the empirical information.

3. The development of indicators using practical definition, is the development of indicators by selecting variables from existing variables, or combining existing variables together according to the developer's consideration which depends on personal attitude in variable selection. This method is considered a method that has weakness more than the 1<sup>st</sup> and 2<sup>nd</sup> method. This type of definition will used in the case

that information of small variables is already gathered as well as combined variables are already created.

**The benefit of indicators:** Johnstone (1981, p.6) mentioned about the benefit of educational indicators that they are useful for the designation of policy and objective regarding education. For educational system assessment and direction, Burstein., Oakes, J. & Guiton (1992, p. 404) explained more that educational indicators are very useful for quality insurance and responsibility. Resnick, L.B., Nolan, K.L. & Resnick, D.O. (1995, p. 438) suggested that educational indicators provide advantages for the designation of checkable targets. In summary, educational indicators are very useful regarding assessment of education system, education ranking, quality assurance, and responsibility. Moreover, the designation of checkable targets and improvement and development of education using the assessment 's results as a guideline is called performance indicator. According to the concepts of those academicians mentioned above, it can be concluded that educational indicators are useful; use in educational policy and objective designation, educational operation planning, maintenance, educational system assessment , and educational quality assurance.

From the study of indicators development, it revealed that there are various ways that the researcher has applied such as 1) practical definition, the researcher considered and selected variables from the existing database and then developed them into indicators, 2) theoretical definition by assigning small variables, ways to combine small variables, and priority of small variables from related theories, which in the designation of small variables' priority might use opinions from experts as information for making decisions, and 3) empirical definition which can be found in new research, this method focuses on the designation of variables using theories as a base. To prioritize each small variable, empirical information will be applied. Regarding this research, the researcher developed indicators by using empirical definition which obtained from the analysis and synthesis of teacher's role regarding learning support for Lifelong Learning, then tested it with the empirical information and criterion , after that considered each indicator in each element by evaluating from concerned people.

**Factor Analysis:** Sombat Tairueakham (2010, p. 19) stated that factor analysis is the analysis of relationships for monitoring the internal relationship between variables

that are observable or measurable without specifying what are independent or dependent variable. There are some variables which needed to be studied how many groups they can combine, and how many factors. In addition, techniques of factor analysis will help to gather large amount of factors to use as variables, therefore, it is easier to use more than the old set of variables. Furthermore, for the analysis of deterioration or route analysis, when apply many variables in the analysis there usually will be a problem of the relationship between high independent variables (Multicollinearity), however, if combine those variables until there are only a few factors that are not related, then these factors might be used instead of all variables for the deterioration analysis or route analysis.

**Factor analysis methods:** There are two ways including, (Sombat Tairueakham, 2010, p. 20) Exploratory Factor Analysis or EFA in order to explore or find hidden variables that might hide behind observable variables and Confirmatory Factor Analysis or CFA in order to prove, check or confirm theories that others have found.

**Exploratory Factor Analysis or EFA:** Exploratory factor analysis used in information survey in order to specify numbers of factors and explain the covariance between variables when the researcher did not have enough prove evidence to use as a framework of the hypothesis about numbers of factors under the information that can be verified. The process of Exploratory Factor Analysis consists of five processes as follows; 1) build Inter-Correlation Matrix, 2) factor extraction to find numbers of factors that are able to explain the relationship between observable variables, and the criterion that helps to make decision regarding numbers of factors is Eigen Value Grater Than 1 which the Eigen value is the value that indicates the ability of factors how much they can explain the variance of variables, 3) choose to use the rotation method, it is a factor rotation in order to see clear factors, containing two ways; Orthogonal Rotation, which will use when each variable are independent from each other, and Oblique Rotation, which will use when variables or questions are related to each other (or variance is not separated from each other), 4) the selection of factor leading to specify which variable is in which factor considering from loading value by using the criterion of 0.3 to 5, and 5) factor naming.

**Confirmatory Factor Analysis or CFA:** This analysis will be used for prove, monitor or confirm theories that the others have found, by starting from setting up the hypothesis that the studied variables are related to other factors and those factors are related to each other. The set hypothesis is based on theories.

Confirmatory Factor Analysis consists of the following processes;

1. Build Inter- Correlation Matrix for questions or any variables that collected empirical data.

2. Specify objectives for model comparison which should base on theories or existing information, then specify level of relationship between variable pairs and factors and design deviation of variables to relate to each other.

3. Specify factor rotation using Maximum Likelihood method.

4. Summarize and translate the meaning of research.

#### **The monitor of the accordance of factor relationship and indicator model**

The monitor of the accordance of factor relationship and indicator model concerning teacher's role in support students for Lifelong Learning is the test of the accordance of relationship model obtained from concept synthesis, document, research related to empirical information which was collected from the sample group by using Lisrel program, which statistics that used in the monitor (Sombat Tairueakham, 2010, p. 231 – 232) are as follows;

1. Chi- Square Statistics, which use to test the hypothesis if the accordance function is zero or not. If the Chi- Square is in the high level, it means that fitting function is different from zero significantly, that is the relationship model does not relevant to the empirical information. However, if the Chi-Square value is in the low level or near zero, it shows that the relationship model is relevant to the empirical data.

2. Goodness of fit index or GFI, which is the proportion of the difference between fitting function of the relationship model before and after the adjustment. If the GFI is near 1.00 or about 0.90, it means that the relationship model is relevant to the empirical data.

3. Adjusted Goodness of fit index or AGFI, which is the adjustment of GFI and considering of degree of freedom, numbers of variables and size of sample groups. If

the AGFI is near 1.00 or about 0,90, it means that the relationship model is relevant to the empirical data.

4. Root Mean Square Resident or RMR value is the root index of quadratic mean of fraction, if the RMR is near zero or less than 0.20, it means that the relationship model is relevant to the empirical data.

5. Root Mean Square Error of Approximation or RMSEA value is the root index of quadratic mean of deviation in the estimation. It is the value that indicates inconsistency of the relationship model that was created with covariance matrix of the population. If the RMSEA is less than 0.05, it shows that the relationship model has a close fitting. Moreover, the obtained value that is consistent to the model should not be more than 0.08.

#### **The concept of structural equation model development**

Mulaik and Millsap (2000, p.36-73) had the idea to develop the structural equation model by using the Four Step Approach to Modeling, which are as follows; first step is the Exploratory Factor Analysis, it requires to analyze the factors of each hidden variable in order to select important ones for the measurement model. The next step is called, Measurement Model, it requires to check the measurement model of each hidden variable in order to confirm the building of measurement model in the first step to see if those hidden variables were measured from observable variables or not. Third step is to check the relationship of hidden variables in the structural equation model to see if the relationship is enough to apply to the structural equation model analysis or not. The fourth step is to analyze structural equation model and consider the consistency of the developed model with empirical data, by checking from the consistency index of the model, parameter values with reasonability of sizes, and its directions.

In the analysis of factors and indicators for this research, the researcher has applied the concept of structural equation model development using the Four Step Approach to Modeling, which was created by Mulaik and Millsap (2000, p. 36-73) into the analysis. However, the researcher implied and adjusted into two main steps by combining the first and two steps together as the first step, and combined the third and fourth steps together as the second step, which are; 1) the building of factors and indicators using exploration factor analysis and the verification of measurement model,

2) the verification of the relationship between variables and the analysis of structural equation model.

#### **2.2.2.5 Assessment methods**

Sirichai Karnjanawasee (2009, p. 10-11) stated that assessment theorists rather consistently agreed that the assessment should use reliable methods with references. However, methods that will lead to the truth and assign the truth still are various due to assessment theorists believe in the philosophy of truth and the designation of value differently. Therefore, they present different assessment methods, which can be varied as follows; 1) Subjectivism, people believe that the determination of something, either it is true or not, or if it has value or not, it depends on a person's perspective and how that person sees the truth or value. It is the assessment that focuses on natural method and applies knowledge and expertise as criterion in order to summarize the result. 2) Objectivism, it is about the belief that human are able to know what is true or not true, value or not. The determination of what is true or false, or if something has value or not, can be designed as an international standard, which will use the assessment that focuses on the Systematic Approach. In addition, there will be clear operational plans and use standard tools to collect data, as well as control extraneous variables as much as possible, analyze data and conclude the result in accordance with standard criterion .

However, most of the evaluators agreed that there is no perfect method for assessment, but they should combine methods to make it appropriate for their studies so that they can obtain information from various fields and reliable. Regarding this research, the researcher used the assessment according to indicators, which the evaluators are; 1) teachers, 2) two related persons including coworker and/or head of department and head of academic division, and/or director. The steps included; the preparation, the assessment, and the conclusion. The tool used in the assessment is the teacher's role in support students' Lifelong Learning skill assessment.

### **2.2.2.6 Criterion, meaning, and types of the assessment**

#### **The meaning of criterion**

Sirichai Karnjanasee (2009, p. 95) has given the meaning of criterion as; it is the level or standard that is considered as the success of an operation or performance. Criterion will determine the quality of performance or obtained results, which criterion can come from professional standard, practical standard, or level of expectation of concerned stakeholders. Moreover, Somwang Pithiyanuwat (2010, p. 80) mentioned that criterion is a tool to make a quality judgment of obtained results which might be displayed in a form of behavior level that one can accept it. In addition, Rattana Buason (2007, p. 32) has given the meaning of criterion as the principle use in the determination in order to indicate the level of success or reasonableness of something.

To conclude, criterion refers to level of standard that use in the determination of performance or quality of performance, which it indicates the level of quality of success or reasonableness of something. Even though criterion and standard both share similar meaning, they are different as criterion is the principle use in making decision in order to indicate the level of quality of success or reasonableness of something, while standard refers to the criterion that is generally acceptable among people in such group.

#### **The type of criterion**

Sirichai Karnjanasee (2009, p. 95) stated that the type of criterion can be varied into two types which are 1) Relative Criterion, which is the criterion developed from experiences in comparison with the results obtained from previous assessments, moreover, it could compare with the norms of general project management. 2) Absolute Criterion, which is the criterion that was developed from the principle of cause and effect regarding the standard of such issue, or from the experts' opinions concerning the standard that is professional acceptable or the quality of such issue, which is accepted by other stakeholders. Thus, it can be concluded that criterion refers to levels for decision making regarding the success of operation or performance. Therefore, criterion indicates quality of performance or obtained results which can display in a form of accepted behavior level. There are two types of criterion including relative criterion and absolute criterion. Anyhow, this research applied the absolute criterion, which was

developed from the principle of cause and effect concerning teacher's roles to support students' Lifelong Learning skill and the experts' opinions.

#### **2.2.2.7 The assessment report and ways to apply the results.**

The assessment report or to provide reversed information is very important as Glass (1978) mentioned that the provision of reversed information is important because it will reflect teacher's roles and behavior as well as will help to adjust and develop teacher's roles to be more effective. This is relevant to the concept of Millman (1990) which suggested that the students who were evaluated should be informed about the assessment's results, moreover, there should be guidelines with useful information so that they can develop themselves such as the information indicates which parts need to be developed, the reasons why they should develop, factors that support development, indicators that show development, and person who follows up the assessment and development. Furthermore, directors should be informed regarding the assessment's results as well so that they can use the obtained information to assemble with their decision making and use it as the information to plan and manage effectively further. Sirichai Karnjanawasee (2009, p. 151-153) mentioned about the application of assessment's result that the important target of the assessment is to obtain information to use in the development of the issue that needs to be evaluated. So, assessment's results are important factors that influence on the application of assessment's results. There are various forms to apply assessment's results such as thinking usage, verifying manner, symbolic manner, practical manner, operation methods, regulations, and organization's structure and culture.

The researcher has set the assessment's targets so that teachers can obtain reversed information as a guideline in order to improve and develop their roles to support students' Lifelong Learning skill. Furthermore, the researcher also set guidelines to apply assessment's results for development, which came from related research and document such as Teachers' development system, the Institute of Educational Director Development, Ministry of Education (2005, p. 17-19), researches of graduate level that are related to guidelines to develop teacher base on electronic information which gathered dissertations, researches, rare books, academic journals, and teaching materials of universities in Thailand (Thai Digital Collection) during 2004-

2014, total 13 topics including; teacher development system, the Institute of Educational Director Development, Ministry of Education (2005), Samorn Praituen (2009), Thanabadee Buayairaksa (2007), Thongboon Chanhom (2009), Kiettichai Phumart (2009), Waratchaya Wiwake (2008), Nittaya Thongsong (2009), Surachade Sroysawing (2009), Santi Awanna (2008), Somboon Phurahong (2008), Kitinart Fuengfoong (2007), Amnuay Kitjaruen (2007), and Waratchaya Wiwake (2008)

In summary of teacher's roles development to support students' Lifelong Learning skill, there are four ways; 1) Self development by reading from books, doing research on the internet, learning from media, practicing in reality, learning from experts, and doing field trips. 2) Provide experts to help in the development by providing suggestions and demonstration, preparing good learning examples for teachers, using learning and knowledge exchanging network, and applying local intellectual into the learning management. 3) Attend training courses as designed by the curriculum such as classroom training, conference training, training course using electronic media, and practical training. 4) Continue to study in the next level such as study according to schools' curriculum or other institutions within the country or abroad.

#### **2.2.2.8 The development of assessment guideline.**

In order to apply assessment models, it is necessary to have a guideline for using assessment models. The researcher concerned the preparation of assessment model usage, and in order to allow everyone to understand the principle, guideline, and important information before applying the model into real life for the operation of assessment to develop teacher's roles to support students' Lifelong Learning skill, so the researcher has made the guideline for assessment model usage for teacher's roles to support students' Lifelong Learning skill, which based on the framework of assessment models and contained details such as rational, preparation for assessment model usage, guidelines for assessment, assessment targets, issues that need to be evaluated, factors, assessment indicators, criterion, information users, and assessment methods according indicators. There are seven factors including evaluators, assessment steps, tools, computer program for data processing and presentation, criterion, and guideline for

applying assessment result for development so that the assessment model of teacher's roles to support students' Lifelong Learning skill can be used effectively.

#### **2.2.2.9 The development of computer program for data processing and presentation of assessment results and the program manual.**

In order to develop computer program, there are steps as follows; (wu, 1979, p.335 – 348) 1) problem analysis, 2) program design, 3) work chart, 4) the selection of language for wiring the program, 5) writing the program, 6) translation and grammar checking, 7) program testing, which contains three aspects; first is the accuracy of the program which refers to correct work chart, correct grammar, and accurate results, second is the program reliability, which refers to the ability of the program to work according to orders and provides the same result, and third is the program security, which refers to the safety of information and program, and 8) providing document for the program.

#### **The performance assessment of computer program**

The performance assessment of computer program contains details as follows; (Van, 1978) accurate and reliable, easy and convenient to use, easy and convenient to fix or adjust, so, it can be concluded that the researcher has developed the computer program in order to use in the summary of assessment results, which steps are; problem analysis, program design, work chart, the selection of language for writing the program; using PHP language, wiring the program, translation and grammar checking, program testing, prepare document for the program, and evaluate the performance of the computer program.

#### **2.2.2.10 Assessment model standard of quality finding of assessment model by the analysis of Rater Agreement Index (RAI) and Generalizability Theory**

In order to have quality tools and assessment design according the idea of Hintze and Matthews (2004), they stated that the deviation of assessment that comes from evaluators will have very least value if tools and assessment design are in good quality. Hence, there were various forms of quality assessment including model assessment by experts and stakeholders who tested the model; this is relevant to the

concept of assessment model by experts of Elliot W. Eisner (1976), which stated that assessment done by experts will focus on the analysis and criticism of the considered issue deeply and will not evaluate on the quantitative only. In addition, some issues require more than just numbers and summary, but the combination of other factors, experiences, and expertise of the experts in order to obtain appropriate summary as well as effectiveness and quality of the evaluated issues. This is also consistent with the concept of the assessment paradigm by experts of Worthen and Senders (1987), which considers the assessment as the matter of value that human can access if they have knowledge or being a professional expert to judge the value on something.

### **The meaning of standard and the standard of assessment model**

Sirichai Karnjanawasee (2009, p. 83) stated that standard means attributes or levels that are considered as quality success, or reasonableness that is professional accepted in general. Somwang Pithiyanuwat (2010, p. 83) said that standard refers to the condition of things supposed to be, it is the condition that consists of quality. According to Rattana Buason (2008, p. 31) mentioned that standard means condition or quality level that is supposed to be of things which is accepted among concerned people. To conclude, standard means criterion that is accepted by all parties in that professional group.

Gullickson (2008, p.19) explained about the standard of assessment model which can be summarized that it is the principle agreed by people who work in the profession and it is the assessment in order to measure the value or quality of such assessment. While Sanders (Somwang PiThiyanuwat, 2001, p. 86-91; referenced from Sanders, 1994) explained about the standard of assessment and can be concluded that it is necessary to have the standard for assessment. Moreover, the Joint Committee on Standards for Educational Assessment has provided the standard for judging the quality of educational assessment, which is divided into 4 standards and 29 criteria (James R. Sanders .et al, 1994, p. 18-19), which are; 1) utility standard, 2) feasibility standard, 3) propriety standard, and 4) accuracy standard. In addition, Somsak Phuwipadawat (2011, p. 396-398) studied on the research and development model of teacher and school director development by using school as a base and small schools in Chiang Mai and Chiang Rai used the standard of quality assessment by assigning to 6 standards and 23

criteria including; 1) the feasibility of model, 2) the propriety of model, 3) the adequacy, 4) the utility, 5) the agreement, and 6) ethic

In summary, evaluation standard is important and the researcher applied the standard of the Joint Committee on Standards for Educational Assessment who provided the standard for judging the quality of educational assessment, it is divided into 4 standards and 29 criteria (James R. Sanders .et al, 1994, p. 18-19) to the quality evaluation standard of Somsak Phuwipadawat (2011, p.235), who studied on the research and development model of teacher and school director development by using school as a base and small schools in Chiang Mai and Chiang Rai province used the standard of quality assessment by assigning to 6 standards and 23 criteria. In the study of the assessment model of teacher's roles to support students' Lifelong Learning skill, four of standards of assessment model were applied including 1) utility, 2) feasibility, 3) propriety, and 4) accuracy.

### **The finding of assessment model quality by using the analysis of Rater Agreement Index or RAI**

#### **Analyze the quality of assessment results agreement by calculating for the Rater Agreement Index or RAI**

It is the Rater Agreement Index according to the concept of Judith A. Burry Stock & Others (1996), in the case where there are many behavioral indicators, one person is being evaluated, and there are many evaluators, here is the calculation;

$$RAI = 1 - \frac{\sum_{k=1}^K \sum_{m=1}^M |R_{mk} - \bar{R}_k|}{K(M-1)(I-1)}$$

By RAI is Rater Agreement Index

$R_{mk}$  is points obtained from evaluator m in the behavior

k (m = 1, 2, 3, ..., K)

$\bar{R}_k$  is the mean during behavior k, which can be calculated from

$$\bar{R}_k = \frac{\sum_{m=1}^M R_{mk}}{M}$$

K is total number of behavioral indicators

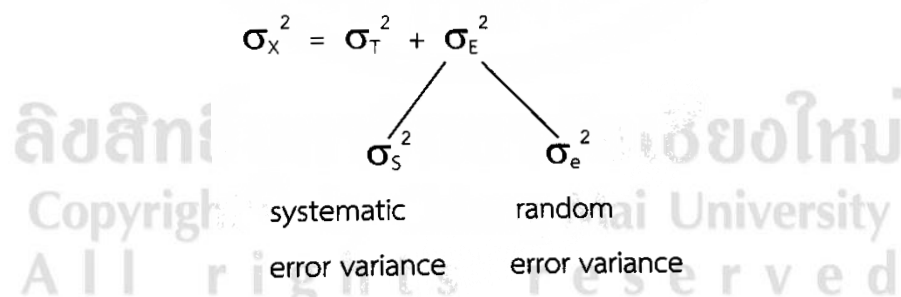
M is total number of evaluators

I is total number of points that are feasible

The criterion for the agreement of assessment results; if RAI is near 1, it means that the evaluators gave the assessment points in a very consistent level, but if RAI is near 0, it shows that there is not much consistency.

### Generalizability Theory

Cronbach and other (1972) developed the Generalizability Theory to analyze the reliability of behavioral measurement results for the situation of any measurements. This theory has expanded the concept of reliability according to the Classical Test Theory to be able to summarize the reliability results in situations or any test conditions. The Generalizability Theory provides ideas about separating error from multiple error sources such as systematic source and random source, which is not only one source of error like the Classical Test Theory, so it provides notification of information and able to control error sources correctly. Error separation in G-Theory is shown in figure 2.5



**Figure 2.5** Error separation in G-Theory (Sirichai Karnjanawasee, 2012, p.13)

### The structure of Generalizability Theory

Facet refers to similar conditions of measurement such are item facet, rater facet, etc. Universe refers to entire conditions of measurement such as total number of examination or total number of examiner. Universe has similar meaning to the word population but the word universe usually is being used with the facet concerning

measurement. For the word population, is usually used with the facet that is being measured. Universe scores refer to entire scores of measurement condition of each facet which is similar to ideal scores of things that are being measured in the original standard measurement.

Generalizability Coefficient refers to the ratio of universe scores deviation and expected scored deviation. The Generalizability Coefficient that can be estimated from the square of correlation between universe scores and observation scores, the Generalizability Coefficient for the measurement that has a comparison decision making or group measurement, measurement error is relative error. So, the Generalizability Coefficient can be estimated from the ratio between the variance of universe scores and the sum of the variance of universe scores and the variance of relative error, the Generalizability Coefficient for the measurement that has complete decision making or criterion referenced measurement, measurement error is complete error. The Generalizability Coefficient can be estimated from the ration between the variance of universe scores and the sum of the variance of universe scores and the variance of complete error.

Measurement condition refers to the level of factors that provides the observing value from each time of measurement. It could also refer to the size of the sample group of factors such as an examination is the condition of one measurement of test factors.

Relationship model between factors means factors that indicate the variance source of measurement model. For the model of variance analysis, the relationship is divided into three types;

Crossed relationship refers to the relationship at each level of something that is being measured, and it is being measured under the same condition. The symbol of this relationship is “X” which means “Cross with”, such as; the model relationship of factors is  $p \times i \times r$ , it means students (p) did every item of the test (i) and the examiner (r) checked all the test of every student.

Nested relationship refers to the relationship at each level of something that is being measured under different conditions. The symbol of this relationship is “:”, which means “Nested with”, such as; the model of relationship of factors is  $i:r$ , it means that the examiner (r) checked the test (i) on different items.

Confounded relationship refers to the relationship that has both crossed relationship and nested relationship such as  $px(i:t)$ , it means students (p) did the test (i) only on some items (t).

**Analyze quality regarding reliability** of assessment results by applying the Generalizability Theory or the G- Theory to analyze the value of G- Coefficient, which it is the statistic theory use to analyze the reliability of tools and assessment design and get reliable assessment results. The analysis used the ready-made program of GENOVA (Crick; & Brennan, 1983) to design the measurement for two facets; Confounded relationship (R : P) X I Design when each teacher (P) was being evaluated with every indicator appear on the assessment (I) by different set of evaluator (R) the formula is as follow;

$$\text{G-Coefficient} = \frac{\sigma_p^2}{\sigma_p^2 + \text{Error Variance}}$$

When  $\sigma_p^2$  is the variance of universe scores

is the variance of universe scores

Error Variance is the variance of error scores

Criterion for the G-Coefficient; if the value is near 1 it means that the reliability value is high but if the value is near 0, it means that the reliability value is low.

Regarding this study aimed to find the quality if reliability of assessment results by applying the Generalizability Theory or G-Theory for relative decision making in order to find the G-Coefficient. In addition, the study used the ready-made program of GENOVA (Crick; & Brennan, 1983) to design the measurement for two facets; Confounded relationship (R : P) X I Design when each teacher (P) was being evaluated with every indicator appear on the assessment (I) by different set of evaluator (R)

## **2.3 Related research**

The researcher studied related research regarding Lifelong Learning, teacher's roles and assessment model, and there are various studies about related research concerning Lifelong Learning such as the development of teacher's attributes indicators that contained Lifelong Learning skill, the development of assessment for Lifelong Learning skill in students, the development of environmental indicators for Lifelong Learning, Lifelong Learner's attributes, the development of educational management indicators for Lifelong Learning, educational management for Lifelong Learning, and the study of policy and guidelines of Lifelong Learning. For research of teacher's roles are about the roles of teachers in learning management that focus on students, teacher's roles in teaching management using different techniques, and teacher's roles in different classrooms. Regarding research related to assessment model of teaching management, learning process management, and learning assessment model, details can be found below;

### **2.3.1 Research related to Lifelong Learning**

From the study of related research about Lifelong Learning, it revealed that there were various studies such as the study about the development of teacher's attributes indicators that contained Lifelong Learning skill, the development of student's attributes for Lifelong Learning, the development of environment indicators for Lifelong Learning, the study of Lifelong Learner's attributes, the development of education management indicators for Lifelong Learning, education management for Lifelong Learning, and the study of policy and related guidelines for Lifelong Learning which details are as follows;

Rutsanun Kaewta (2011) studied on the development of teacher's attributes indicators for Lifelong Learning, the objective was to develop teacher's attributes indicators for Lifelong Learning and to check the concordance of factors of teacher's attributes indicators and empirical data. The sample group contained teachers and school directors within Chiang Rai primary educational service area number 3, the academic year of 2011. The sample group was selected by using the Stratified Random Sampling and the data was collected using the questionnaire and interview form. The

data was analyzed by using the Exploratory Factor Analysis and Confirmatory Factor Analysis technique. The study revealed that there are 17 indicators of teacher's attributes for Lifelong Learning including; having skills to use and translate the meaning of data, join the learning, having the result of self and work development, value the learning, having learning strategies, having skills to use information technology, listen to other's opinions, seek for more knowledge, having skills to communicate in Thai language, having self-confident about learning, learning happily, continuously value the learning, having motivation for learning, continue to learn after finishing school, apply tools for learning, have goals in life, and set learning targets. Also, the model of factors of teacher's attributes indicators for Lifelong Learning of teachers who teach at Chiang Rai primary educational service area number 3, is consistent with the empirical data.

Saksit Rittilun (2011) studied on the development of student's attributes of Lifelong Learning measurement which the study was conducted with high school students. The study aimed to develop high school student's attributes of Lifelong Learning and in order to inspect the quality of the measurement for the national norm creation. The sample group is high school students from the Office of Basic Education Commission and the Office of Non-formal and Formal Education, total 2,714 students, which were selected by using the Multi-Stage Sampling method. Tools used in this research were Lifelong Learning attributes measurement and situation measurement. The result revealed that the Lifelong Learning attributes measurement consisted of Likert Rating Scale. For the situation measurement, it contained three factors which are the learning ability of learners, a good learning management, and motivation and learning exchange. In addition, the model of Lifelong Learning attributes is consistent to the empirical data.

Jitpinya Chumsai Na Ayudaya (2008) studied the Lifelong Learning attributes of the fourth year university students; the objective was to study the Lifelong Learning attributes of the fourth year students who are studying in the 1<sup>st</sup> semester of the 2008 academic year, majoring in Health Science, Science and Technology, and Social Science and Humanities from the government universities including Thammasat University, Srinakharinwirot University, and Rangsit University. The research revealed

that Lifelong Learning's attributes from the study from document research, experts' opinions, and the empirical data, contain 6 factors, which included; information analysis skill, love seeking for knowledge, self-reliance, wide vision, having learning and language skills, the relationship between background and personal attributes regarding universities and learning environment and Lifelong Learning attributes of the Fourth year students.

Nittaya Sumretphon (2004) conducted research about the development of education management indicators for Lifelong Learning, which the objective was to develop education management indicators for Lifelong Learning in the scope of university level. The sample group was employees of Rajamangala University of Technology total 450 people. The tool used in this study was semi – structured interview form and the questionnaire of education management indicators for Lifelong Learning. The data was analyzed by analyzing the context, creating the summary, and comparing the results obtained from document, and calculating for mean, percentage. The research revealed that education management indicators for Lifelong Learning consisted of 15 factors and 100 indicators, which varied according to system analysis including; 1) input factor; there are 4 factors included learners' background for 4 indicators, teacher factor for 12 indicators, director factor for 4 indicators, and supportive staff factor for 3 indicators. 2) Regarding the process; 5 factors included teaching management factor for 12 indicators, teaching assessment factor for 4 indicators, policy and management mechanism factor for 7 indicators, curriculum management factor for 5 indicators, and learning service support for teachers and students, 6 indicators. 3) Regarding the result contains; the attributes of Lifelong Learning for 4 factors included; the attributes that offer Lifelong Learning for 11 indicators, the attitude toward Lifelong Learning for 3 indicators, skill and ability for learning 3 indicators, and Lifelong Learning skill factor for 6 indicators. 4) Lifelong Learning opportunity management for 2 factors included the opportunity of Learning activity management for 11 indicators and the quality of Lifelong Learning opportunity for 9 indicators.

Nichapat Rattawatapat (2011) studied on the attributes of Lifelong Learning of students at Srinakharinwirot University. The objective was to study the attributes of

Lifelong Learning person, the relationship between background and personal characteristics regarding university education level, and the learning environment and the attributes of Lifelong Learning people, as well as study factors that can explain the variance of the attributes of Lifelong Learning students. The tool used in the data collection was a questionnaire. The sample group consisted of the fourth year students who are studying in the 1<sup>st</sup> semester of the 2008 academic year at Thammasat University, Srinakharinwirot University, and Rangsit University for 412 students. The study revealed that from documentation research, expert's opinions and empirical data, the Lifelong Learning attributes of the fourth year students contain 6 factors as follows; information analysis skills, seek for more knowledge, self-reliance, wide vision, having learning and language skill, and the relationship between background and person characteristics regarding university education level and learning environment, as well as Lifelong Learning's attributes of the fourth year students. The result showed that background and personal characteristics factors and achievement motive is positively related to Lifelong Learning's attributes of the fourth year students significantly at the level of .01. Moreover, family bring up in democratic style is consistent with the Lifelong Learning's attributes of the students more than other forms of family bring up statistic significantly at the level of .05. The factor regarding the higher education was that government education institutes and private institutes are connected with the students' Lifelong Learning statistic significantly at the level of .05. The factor of learning environment included the participation of students was positively related to Lifelong Learning's attributes of the fourth year students statistic significantly at the level of .05. Moreover, the achievement motive, the students' participation, the characteristic of a group of friends, types of university, and a skillful of learning model, all of these are able to explain the variance of Lifelong Learning's attributes of the fourth year students at 28.40 percent.

Abrar Hason (2001) conducted research about the framework of Lifelong Learning and participation, which the objective was to study and gather important roles of Lifelong Learning that was set in the educational policy in many countries over the world. The study revealed that the concept about Lifelong Learning in Australia stated that lifelong learning helps everyone at all ages from every kind of occupation to be

able to increase their knowledge and skills. In European Union, lifelong learning is important for building population that are appropriate for social and economic changes. Lifelong Learning increase new knowledge. Finland stated that Lifelong Learning is important for the learning for having occupations that are consistent to people's living in societies. Moreover, France mentioned that Lifelong Learning is the most important factor for developing the country's population. For Italy, Lifelong Learning plays an important role in the development of human resource which affects the country's production; therefore they support Lifelong Learning and carry it as the basic need for competition. Japan also emphasizes Lifelong Learning and was the first country that shows a complete point of view regarding Lifelong Learning by integrating education into every period of living, which it is the educational system that supports Lifelong Learning. In South Korea, they focus on Lifelong Learning as well; they set it as the basic structural development policy, providing a chance to access learning for everyone at all ages. Netherland, Lifelong Learning is very important to their official policy regarding the country's long term knowledge including economic field in order to develop labors and occupation, social field in order to support people to have a chance to live their lives happily. In addition, Lifelong Learning policy in the Netherland also promotes the ability of workers and teachers, as well as protects the loss of chance for education in every level. Furthermore, in Norway, Lifelong Learning is important in order to manage education for young people and elders who want to learn. In England, their concept is that Lifelong Learning is considered as a key to glory and success, it is a tool to develop people's thinking and intellectual so that they can adjust themselves into every kind of changes. The United States of America, their concept points out that Lifelong Learning is considered as the country's mission; Lifelong Learning period should not less than 20 years.

European Commission (2002) studied the indicators of Lifelong Learning, which the objective was to study factors and indicators of Lifelong Learning. The study revealed that Lifelong Learning indicators consist of 4 factors and 15 indicators, which included; the first factor; ability, skills, and attitudes with 5 indicators including literacy, calculation, new skills for Lifelong Learning, learning skill that will learn, being an enthusiastic citizen, and cultural and social skills. The second factor contains the ability

to access and participation with 2 indicators including the access of Lifelong Learning and the participation in Lifelong Learning. The third factor contains Lifelong Learning resources with 3 indicators including the investment in Lifelong Learning, student and learning, and information technology in Lifelong Learning. The fourth factor is the development of system and strategy with 5 indicators including Lifelong Learning strategy, solidarity of learning management, consultation and suggestion, the provision of recommendation and learning certificate, and quality assurance.

### **2.3.2 Related Researches to Teachers' Roles**

The related researches to teachers' and learners' roles in learning and teaching indicated that teachers' roles was to focus on the learners. Teachers' roles in setting study plan using techniques in different subjects had following detail.

Tanyong Wittayanont (2004) studied the development of indicators of teachers' and students' roles in learning and teaching in basic educational level based on research. The objective was to develop the indicators and verify the agreement of indicator model. The sample group was 190 teachers and 308 learners from the schools participated in learning reform research and development project. Research results revealed that model of indicators of teachers' roles in learning and teaching based on researches in basic educational level was in line with the empirical information. The high indicator loading were setting study plan, introducing learning resources to student, discussing with students, evaluating students' research skills. The model of indicators of students' roles in learning and teaching based on researches in basic educational level was in line with the empirical information. The high indicator loading were identifying research topic, searching information, research results discussion, research results presentation evaluation, and improvement based on teachers' suggestions. In addition, she studied the teachers' roles in setting learning process focusing on the learners. For example, Theerawat Siribat (2006) studied teachers' roles in setting learning process focusing the learners. According to the point of view of the administrators and teachers of the schools under Maha Sarakham Primary Educational Service Area Office 1, the overall and each aspects of teachers' roles which were in high level were operating follow the plan, inspection, and planning. Teachers had more roles than the

administrators which was in consistent with the research. Sukanya Latthiprom (2003) which examined the teachers' and students' roles in setting learning and teaching focusing on the learners in secondary school, Department of General Education, A. Ron Phibun, Nakhon Si Thammarat. The research found that teachers' and students' roles in setting study plan mainly focused on the learners. The overall and individual aspect: operating follow the plan, inspection, and planning were in moderate level. Besides, subject teachers gave importance to themselves. There were some researchers studied on the subject teachers' roles such as Mathematic teachers. Preechakorn Pachana (2007) studied the roles of Mathematics teacher focusing on the story telling and diagram techniques. Results found that teachers set learning activities in many forms, improved the learning activities to suit with the classroom context, and allowed the students to learn and deal with problem independently. Moreover, teachers developed their roles by applying teaching methods such as open approach, teaching with tools and programs. Beside, Wayukon Robsuek (2007) examine teachers' roles integrating students mathematical thinking in Mathematics class teaching with open approach. The results indicated that the teachers' roles had changed. Before applying open approach, teachers focused on the textbook orderly. After applying the approach, teachers prepared the environment to support the idea and the idea exchange, and teachers were more opened to student to get involve in problem solving and exchange the ideas. Furthermore, Pichao Ong-Anurak (2009) studied teachers' roles applying open approach to promote students' mathematical thinking. The research results found that teachers facilitated the students' learning, and support classroom environment by creating the situation to the classroom and asked the students to solve the problems. Teachers were the good models of the problem solving persons by asking the students of what they were instructed to reflect they thinking which was one step of the activities. Further, the teachers had important role in supporting students' behaviors such as their self-discipline, ethics, and virtue. Thongchan Sankhasenakul (2007) examined the teachers' role in supporting self-discipline of students according to the administrators and teachers of the schools under Burirum Primary Educational Service Area Office 3. The results of the study revealed that teachers' role in supporting self-discipline of students was at high level. Paitoon Karnpian (2001) studied teachers' role in supporting self-discipline of students at

primary school in A. Hod, Chiang Mai. It was found that regard to planning, teachers set the objectives of supporting, planning, and organizing activities based on the situations and occasions. Concerning motivation and encouragement, teachers focused on awarding and giving consequence, cooperating with colleagues and parents. Regard to assessment, there was at least once a week assessment by informal observation and reported to the meeting. This was in consistent with Yupha Sanewongkham (2005) who studied the roles if Social Study teachers in supporting self-discipline of the students in Matthayom 4 at Assumption College Lampang. The results of the study indicated that teachers, students, and outside organization cooperated in planning. Regarding organizing activities, many activities were promoted to support student's self-discipline. Regarding assessment, behavior observation and homeroom teachers and parents' opinions were required. Besides, teachers' roles were very importance to promote virtue and morality, Thai culture preservation, sufficiency economy concept, Five basic values, and instruct social value to the students. For example, the study of Wankanok Thongdaeng (2008), which examined the teachers' role in promoting students' morality in basic educational institutes A. Kra Buri, Ranong Educational Service Area Office found that teachers gave high importance to promoting morality to students as a whole and each aspects. Regarding the cultivation, it was the most practice aspect. Next was being role model and following up, respectively. Moreover, there were some researches related to teachers' roles in learning management. Kulwadee Phaijit (2001) studied the roles of Mathematics teaches in Matthayom 6 under Department of General Education, Khon Kaen, according to National Education Act of B.E. 2542 (1999). She studied five aspects of teachers' roles: setting study plan, learning support, setting atmosphere for learning, classroom management, observing, monitoring, and assessment. The results were that the role in learning support was highly exercised. Setting study plan, setting atmosphere for learning, classroom management, and observing, monitoring, and assessment were exercised moderately. This was in line with the research of Phuangphet Tusayadej (2004) which examined the opinions of teachers and the administrators of the schools under Bangkok Educational Service Area Office 1 on teachers' roles according to National Education Act of B.E. 2542 (1999). The researched examine 11 aspects of teachers' roles; learning management focusing on the learners, learning management

focusing on knowledge and virtue, and learning process integration, research-based learning, learning management at all time and places, learners development evaluation, opportunity of further education by various approaches, local curriculum development, local wisdom implementation to support setting study plan, research for developing appropriate learning for the learners, internal assurance, and learners development. The results showed that the overall opinions were positive. Besides, some scholars studied teachers' roles in the period of educational reform, for example, Prapha Thanieerat (2007) who studied the roles of the teachers during the period of educational reform. The study revealed that the roles of the teachers were develop curriculum to suit local community, arrange learning process responding to the curriculum, assess and evaluate based on the authentic situation, develop the learners' learning by conducting the research, arrange the environment and learning sources to support the learning, construct morality and virtues, and develop themselves to achieve the teacher standard. Boonsuk Suksawas (2005) also studied on the roles of teachers at secondary schools in the period of educational reform according to National Education Act of B.E. 2542 (1999). It was found that the teachers at the secondary school consortiums, Muang Prakarn, Department of General Education, Samutprakhan moderately practice the teachers' roles. Besides, Meisenheimer (1996) studied the roles of teachers in authentic assessment. The study aimed to compare teachers' roles for authentic assessment to the original assessment. The sample group was teachers in State of Illinois. The researcher tool was the questionnaire on the authentic raters' attributes. Results was that teachers' roles assessed with authentic assessment was different from with original assessment. The roles were being expertize, working in-group, and being scholars. This was because to become the authentic raters, the teachers should be supported from the school system to be creative and was supported in development fund.

### 2.3.3 Related Researches to Evaluation Model

Studying related researches to evaluation model for setting study plan, evaluation model for teachers' learning process management, and learning evaluation model, it was found that the models were mostly developed to try out for examining the model quality. The summary as followed.

Chailikit Soypetchkasem (2002) studied the development of the evaluation model for teachers' learning management in the schools under Office of the Basic Education Commission of Thailand. The objection of the research was to develop the evaluation model for teachers' learning management. The sample group was 29 teachers from two schools in Pitsanulok , which were under Office of the Basic Education Commission of Thailand. The research tool was the evaluation form of teachers' learning management. Average was utilized to analyze the data. The results were that the model consisted of four factors; 1) evaluation objective 2) evaluation subjects which was the teachers' learning management in learning management concept focusing on the learners and in setting learning management focusing on the learners 3) evaluation method and 4) decision method. The results of evaluating the evaluation model indicated that the evaluation model for teachers' learning management was quality and acceptable based on three standard criteria: quality of evaluation questions, quality of evaluation method, and quality of evaluation results. Besides, regarding setting study plan, Kritsana Kiddee (2004) studied on the development of evaluation model for study plan focusing on the learners. It aimed to develop the indicators of setting study plan which focus on the learners to develop the evaluation model and to evaluate the efficiency of the model.

The sample group of the research was 31 teachers and 930 students (1,271 in total) from the schools under Phichit Educational Service Area Office 1 and 310 parents. Evaluation form, aptitude test, and interview were applied to collect data. The results were that the indicators of learning focusing on the learners consisted of four factors 1) environment/atmosphere for learning which consisted of seven indicators 2) preliminary factors of learning which consisted of six indicators 3) learning process which consisted of 15 indicators and 4) learning outcome which consisted of 7 indicators. The evaluation model for setting learning and teaching focusing the learners

consisted of 1) evaluation objectives 2) evaluation subjects 3) evaluation methods 4) decision method for evaluating the learning management focusing on the learners. The average of the first evaluation result had statistical significance .012. The teachers had positive attitude towards evaluating learning management focusing the learners. The stakeholders accepted that this evaluation was appropriate, feasible for practice and budget allocation, and the results were accurate. Moreover, Songsri Tunthong (2002) studied the development of the authentic assessment model for students' learning results. It aimed to develop the authentic assessment model for students' learning results and to study the quality of the model. The sample group consisted of Matthayom 1 students, the administrators, teachers, parents, and the commission of Wat Sing Sathit Municipality School, Chainart. The research tools were 10 copies of interview forms, questionnaires, and test forms. The participatory research was utilized to examine the quality of the evaluation model in terms of applicable practice. The results indicated that the evaluation model consisted of six steps: 1) define the objectives and the expected result 2) defined the obligation of authentic learning 3) define the evaluation dimension 4) define the activities for learning which promote authentic learning 5) evaluation the authentic operation from the students' portfolios and 6) summarize the ability and attributes of the students. From the try out, it was found that the students, teachers, administrators, parents and the commission of school were satisfied with the try out. Examining the quality of the model revealed that the model was appropriate, understandable, valid, intensive, and feasible to apply to the educational institutes. Moreover, regarding learning evaluation assessment, Sawatchai Sriphanomthanakorn (2006) studied the development of the evaluation model of empowerment evaluation for measurement system and learning results evaluation in the basic educational institutes. The objective of this research was to study the procedure and the empowerment results, evaluate the operation on empowerment, synthesize the model of empowerment evaluation applying multi-places research with three schools. Participant observation, informal interview, and evaluation form were applied to collect data. The data was analyzed by basic statistics and analytic induction. The results of the research indicated that the empowerment evaluation provided the opportunity to teachers, administrators and supervisors to cooperate and participate in reflecting and improving the

measurement and evaluation learning results of teachers in school. The results of evaluating the empowerment evaluation in all aspects according the evaluation standard: utility, feasibility, propriety, and accuracy and the evaluation standard of empowerment evaluation were in good to very good level. The evaluation model consisted of eight factors: initial agreement, context, definition, value, aim, evaluation method, knowledge, and benefits from empowerment evaluation. Moreover, Nattika Khuakkhew (2006) studied the development of evaluation model for affective domain in reading at level 1-2. It aimed to develop the indicators of affective domain in reading, develop the evaluation model for affective domain in reading, and evaluate the efficiency of model implementation. The sample group was 506 samples from teachers, students, friends, and parents from level 1-2 of the schools under Kanchanaburi Educational Service Area Office 3. The research tools were the evaluation form and interview. The results showed that the indicator of affection domain in reading consisted of four factors: environment that consisted of three indicators which were initial factors of reading, reading process, and reading outcome. The model development results consisted of the evaluation objectives, evaluation subjects, evaluation method, and evaluation decision method. The results of model efficiency evaluation revealed that most of students moderately loved reading. They had the development on affective domain in reading. Teachers who tried out the model accepted that this evaluation was appropriate and feasible to practice. Further, Om-Thajit Pansri (2008) examined the development of the evaluation model for bilingual learning management in the basic educational level institutes. The research analyze and synthesis the concept, theories, current circumstance, problems, and obstacles of bilingual learning management to create the evaluation model for bilingual learning management, and to try out and assess the model. The tools utilized in this research were questionnaire, and interview. The research results revealed that the quality of bilingual learning management consisted of three standards, which were input, procedure, and outcome which had 15 standards and 79 indicators. The evaluation model had four steps which were preparation step, processing step, summary step, and reporting step. Moreover, some gave importance to the community by allowing community to get involve in education management. Some studied on the organizational evaluation. For example, Banthita Insombat (2008) who studied the

development of evaluation model for organization for learning of basic educational level institute. The objective of the research were to synthesize the concept of organization for learning, , to study the current state of organization for learning, create the evaluation model for organization for learning of basic educational level institute, and evaluate the model. The sample group was ten administrators of the master schools 2001adn the teachers from three schools which were under Office of the Basic Education Commission of Thailand. It was found that there were five factors of organization for learning, which were personnel of organization, operation system, relationship ion organization, organizational changes, and organizational arrangement. The evaluation model consisted of four factors: 1) evaluation objections to verify and develop the organization for learning 2) evaluation subjects which were five main factors of organization for learning, 11 sub-factors and 85 indicators 3) evaluation method which was self-evaluation 4) decision method. The model had the validity with statistical significance .05, the quality of evaluation questions, evaluation methods, and evaluation results were in high level. Beside, Weena Ong-Sangkun (2005) studied the development of the evaluation model for the balance organization of Catholic schools, Bangkok Archdiocese. It aimed to develop the evaluation model for balance organization of Catholic schools, Bangkok Archdiocese by applying description research method. The population were teachers, administrators of 19 Catholic schools, Bangkok Archdiocese. The results indicated that the evaluation model had four dimensions: 1) learners dimension which were having morality, creating knowledge by themselves, having learning achievement according to the institute criteria, having foreign language skills, and having information technology skills 2) internal process dimension which were administration, curriculum, and educational quality assurance 3) learning and development dimension which were being professional teachers, knowledge and information technology and communication management and 4) budget and resources dimension which were budget system, resources management, and associate network system. It was also found that the model was appropriate and feasible at high and the highest level.

### **Summary of concepts, theories, documents, and related researches**

From studying concepts, theories, documents, and related researches, it was found that Lifelong Learning was the processes of continuing pursue knowledge at every stage of life. It was the learning from the intention for self-development based on the objectives or interest of the persons which would motivate Lifelong Learning in order to utilize the knowledge in the daily basis. Anyhow, teachers were the persons who had the important roles to promote Lifelong Learning to the learners. The research and development concept of Ratana Buason (2009, p.1-3) was applied as the objectives of the study by covering the analysis, synthesis processes, survey the current situation of the problems of teachers' roles to promote Lifelong Learning skills of students, design and create the innovation which was the evaluation model, innovation implementation, evaluation and development of innovation, and arranging the manual and introduce the innovation. Moreover, on the evaluation processing step, the researcher applied the research and development of learning and teaching of Walter Dick, Lou Carey, and James Carey (Gall, Meredith D. , et al., 2007, p. 589-594) and Borg, Walter R. and Gall, Meredith D. (1983, p. 776-788) as a guideline of the evaluation processing which was in consistent with the defined objectives of the study. Moreover, to process the evaluation, it was necessary to set the operation plan in advance which were design the evaluation model or develop the evaluation model. It was the description of the activities which the raters did or defined what activities they should do as the guideline of evaluation. Anyhow, studying the concepts and theories of evaluation model development found that there was no fixed principle. Mostly, the raters applied and developed the concepts and theories as a guideline to create the evaluation model which suit their own research. In this research, the researcher applied the concept of Nevo , 1983, p. 117-126 and Sirichai Kanchanawasee (2009, p.55-60) which were in consistent with each other to develop to the evaluation model which consisted of 1) evaluation objectives 2) evaluation subjects 3) evaluation method 4) evaluation criteria 5) implementation and development of research result. The manual was created and the computer program was set to assess the evaluation results. Moreover, the researcher applied the quality evaluation standard of The Joint Committee on Standards for Educational Evaluation of James R. Sanders. et al (1994 : 18-19) to the standard for

model quality evaluation of Somsak Phuwiphadawan (2011: 235). It was consisted of four standards; utility, feasibility, propriety, and accuracy. Furthermore, the quality of evaluation results agreement was analyzed by calculating Rater Agreement Index based on the concept of Judith A. Burry-Stock et al. The reliability of the evaluation results was analyzed applying Generalizability Theory through GENOVA (Crick; & Brennan, 1983). The research concept was shown as followed.



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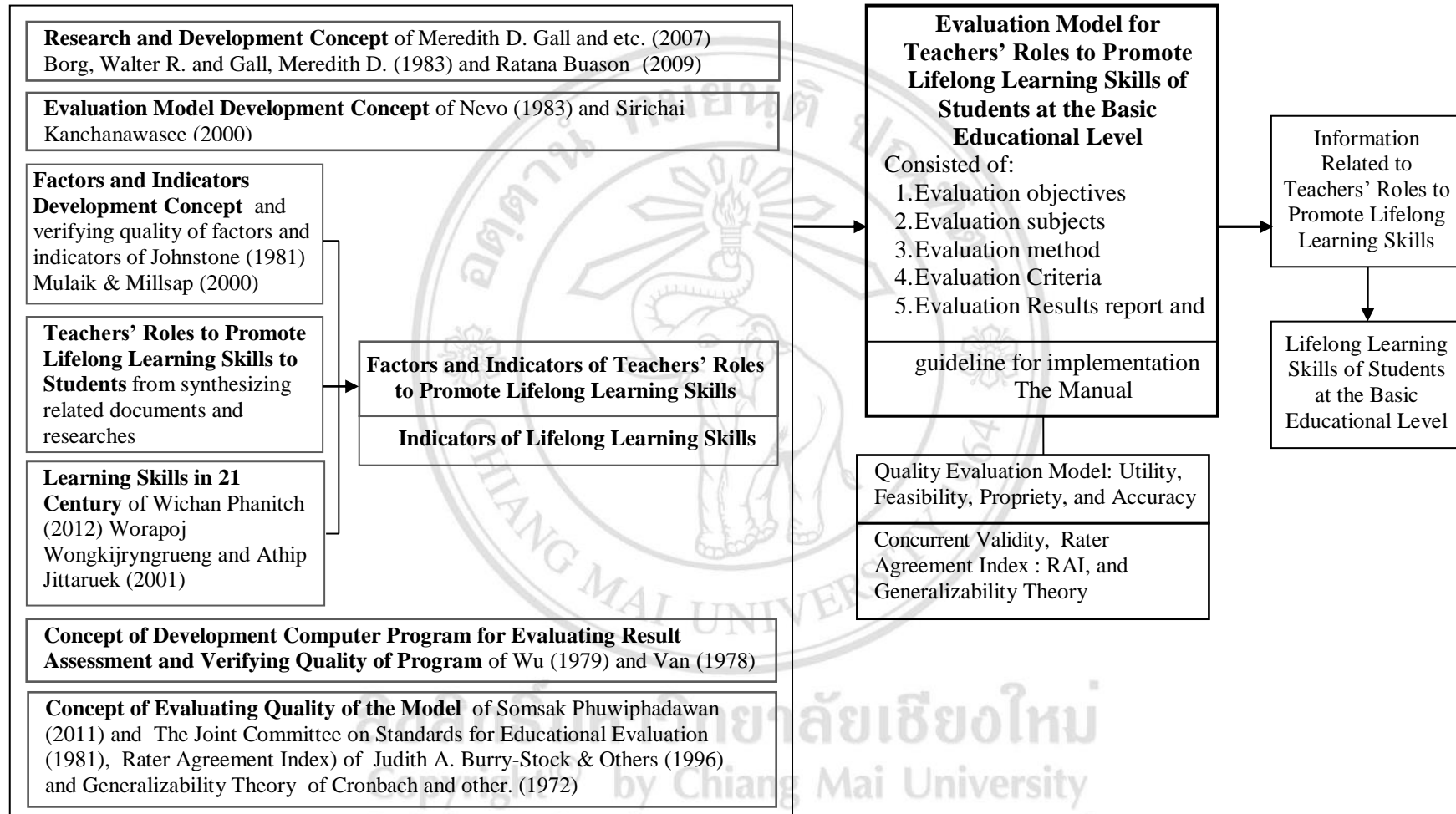


Figure 2.6 The Research Concept