

## **Chapter 2**

### **Review of Literature**

The objectives of this research are to construct and develop an Internal Educational Quality Assurance Model in community colleges that is appropriate and feasible/possible for real application and to study the implementation result of the developed model's efficiency for the internal educational quality assurance in the community colleges. The researcher synthesizes the related literature then summarizes them as the followings.

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## **Educational Quality Assurance**

### **Definition of Educational Quality Assurance**

The researcher studies many definitions of the word “Educational Quality Assurance” and some Thai and foreigner academics defined the term similarly and differently depending on periods of time. Before arriving at the definition of the Educational Quality Assurance, the researcher studies the terms “quality”, “education” and “educational quality assurance” with the following results.

Based on the Royal Institute Dictionary (2003, p. 253), Woraphat Phucharoen (1998, p. 10), and Bureau of Community College Administration (2005, p. 1) define the word “quality” as the good and unique characters of individual or things which is ideal. The other authors perceive that quality comes from satisfaction of individual based on their needs and appropriateness for application (Puri, Subhash C., 1995, p. 22) Woraphat Phucharoen (1998, p. 10), Wantaya Wongsilapapirom et al. (2002, p. 4) and Bureau of Community College Administration (2005, p. 1). Dictionaries like the Collins Dictionary (1994, p. 1175) offer many definitions for the word “quality” which are (1) standard of something good or not good which relate to other thing of the same type of kind, or (2) character such as mercy, honesty, or gracefulness which is the nature of individual or thing. Besides, Dewar (Donald L) (1980, p. 2) defines “quality” as something to which the administrators should pay attention. The management of collaborative organization will lead to touch the heart/feeling of the workers in the organization. If no attention is given to quality, soon or later the organization will face failure.

In sum, quality means the good and unique character of individual or thing which is perfect. Quality satisfies the needs and the benefits usage of each individual. Quality can take place with attention and collaboration of everyone.

For the definition of “education”, National Education Act of B.E 2542/1999 and second amendments of B.E 2545/2002 (2004, 3) offers a learning process for prosperity of individual and society by transfer of knowledge, training, inheritance and culture, creative creation of technical advance, creating of knowledge derived the environment arrangement, society, learning and supporting factors for individual to learn

continuously for the rest of the life. In English the Oxford Advanced Learner's Dictionary (2005, p. 488) defines education as a process of teaching, training, and learning especially in schools or colleges which emphasize to develop more skill and knowledge. Sulak Sivaraksa (2002, p. 6) agree that education means (1) the method for transferring skill and attitude, (2) theories that try to explain or give reason for that transfer, (3) the values of attitude that human beings try to explain in giving reasons in those transfers. Similarly, Jintana Sujjanun (2006, p. 10) states that education is the activity that occurs to develop knowledge and skill of learning so they can adjust and use their life happily. In aspects of religion, Phra Dharmakosajarn (Prayoon Dhammacitto) (1998, p. 2) states that education means inquiry for knowledge to get wisdom.

In sum, education means methods of transfer of knowledge, training, practicing and learning for development of skill knowledge, and attitude for individuals and society to learn continuously for the rest of their life to adjust their lives to live happily.

The study of definitions of “educational quality assurance” reveals the word “quality assurance” in English as “Quality Assurance” which in Oxford Dictionary (2005, p. 1233) defines as the good administration method in performing works that the users of service feel secure that the goods and service have standards. For the word “educational quality assurance”, many academics define this term in same direction, i.e. educational quality assurance is a mechanism to create persons who achieved the study to have knowledge, abilities, and desired character based on the identified curriculum and the social expectation (Bureau of Academic Affairs and Educational Standards) (2006, p. 3), Rung Kaewdang (2002, p. 9) and Narong Na Lamphun and Petcharee Rupavijetra (2003, p. 19). These will create security for parents, communities, and societies that the implementation of the school is in accordance to the identified mission (Narong Na Lamphun and Petcharee Rupavijetra (2003, p. 19) and the Project of One District One Dream School (2005, p. 1). Besides, Pruet Siribanpitak (2002, p. 2) thinks that the implementation on identifying the educational quality standards and the checking process or evaluation must be done in accordance with the building of educational quality standards.

In sum, the educational quality standard means mechanism to create a person who finishes school to have knowledge, ability, and desired character based on identified curriculum and social expectation in order to create trust with the parents, communities, and society that the implementation of the school responds to the identified mission. The implementation of identified educational quality standard means check and evaluation if the educational program is responsive the education quality standard.

### **Background of Educational Quality Assurance**

The researcher studies the background of quality assurance system from many academics who are Rung Kaewdang (2002, pp. 10-11), Jamrus Nongmak (2001, pp. 23-24) and Pruet Siribanpitak (2002). These academics can be summarized as what follows.

The concept on quality assurance started about 100 years ago. It started in industrialization in order to identify standards of goods and services to create trust for users of service that the quality was uniform and based on identified standards. In the US before the Second World War, the control of goods quality brought reliability to the industrial system in the US that the goods had quality and could be exported to the world. When Japan lost the Second World War the industrial goods of Japan had very low quality. The US supported Japan in improving industrial good quality by sending professors and doctors (like Edwards Deming) to be the advisors and consultants on the goods quality assurance of Japan. Dr. Deming brought “Quality Control Circles” or QCC. This Circle emphasized on processes of Planning, implementing (Doing) process, evaluating (Control) process, and Action (PDCA) into suggestion and put into the system for the Japanese industry until it became successful. The system developed the quality assurance that emphasized on goods, tools, and the quality assurance on whole system. The assurance started from production process until the production of goods stage which is called “Total Quality Management” or TQM. Japan applied the culture of quality assurance in every part continuously until the system was known as “KAIZEN” which was originally a native culture of Japan that was integrated into the Japanese industry. It was successful under the local production with higher quality than that of Europe and the US. Later the European countries brought the quality assurance system into usage and called it International Standard Organization (ISO) which differed from that in Japan. The Japanese companies emphasize on internal evaluation but the ISO process emphasizes on external evaluation.

The history of educational quality assurance in Thailand is studied by the researcher through secondary data on many models of quality assurance and one academic by the name of Rung Kaewdang (2001, pp. 29-44) who discusses the history of educational quality assurance in Thailand with the following results.

The education quality assurance in schools under Office of the National Primary Education Commission began in 1984-1987. It was the evaluation of the learning in Prathom Suksa 6 level. The findings showed that the educational quality assurance came in different results. Therefore the Office called National Primary Education Commission made a plan to develop and improve the educational quality by making ranking of provinces where the students get good scores and some provinces where students with lesser learning results. The evaluation results raised the awareness among school managers to improve educational quality by themselves.



This project had been done for three years to stimulate the interests on educational quality and to improve the education quality for the first time in Thailand.

In 1988 The Private Education Commission suggested a certification of the standard in private schools that was emphasized on certifying the process in which the schools make planning, make self- evaluation, and set committees for external evaluation to certify the quality and educational standards.

In 1996 the Office of the National Education Commission (or ONEC) analyzed data from the implementation from all sectors and summarized that Thailand does not implement the improvement of educational quality seriously in terms of planning, implementation according to the plan, and evaluation of the schools. In addition the comparison on studies on the learning achievements of Thai students showed they faced quality crises. Therefore a committee team was set up according to the Office of the National Education Commission in 1992 (Section 5) to identify that the National Education Commission was responsible for identifying policy, making educational plan, evaluating development plan (including cooperation and follow up), and evaluating education seriously by studying and analyzing the Thai educational condition compared to international standards and announcing the results. This was the starting point of the quality assurance system and national standard system.

In 1997 the Ministry Team made consensus to approve a system for quality assurance and national educational standards and set up an office for The Institute for National Education Standards and Quality Assessment (or ONESQA) to be the organization under the Office of the National Education Commission. This new organization on quality assurance and national educational standard was the first of such office in Thailand that was neutral organization in promoting quality assurance and the educational standards at all levels. This office had three main missions which are (1) setting drafts for the educational standards especially in the basic educational levels, (2) promoting and developing internal evaluation system to set the continuous development and the preparation for the external evaluation, and (3) developing the external assessment system to be the mechanism for the school to develop quality and educational standards.

Later the Office of National Education Commission drafted National Education Act of 2542/1999 to enhance the educational standard levels in Thailand. Thailand is required to bring the issue of standard and educational quality assurance which the Ministry Team approved to be the policy and make it to be in laws identified in Paragraph 6 sections 47 to 51. This legislation was considered a legal success in term of law, and it was the starting point of the perfect quality system and education standard in Thailand.

After National Educational Act was announced for one year and two months there was a decree to establish The Office for National Education Standards and Quality Assessment (Public Organization) (or ONESQA). This decree took effect on 3 November 2000. This office built hope for Thailand educational system with the

system for educational quality assurance and educational assessment for serious certification of the standards.

### **The Need for Educational Quality Assurance**

The following synthesis on the problems on education administration and education quality in Thailand is done through reports of students and many organizations such as the Office of the National Educational Commission (2000, p. 1), the Office of the National Economics and Social Development Board (2006, p. 28), National Education Act of BE. 2542/1999 (2004, pp. 29-30), Wittayakorn Chiangkul (2006, pp. 1-2, 127, 130) Suwimon Wongwanich and Nonglak Wiratchai (1999, p. 13), and Jarus Suwanmala (2002, pp. 13-29). The summary can be presented as the followings.

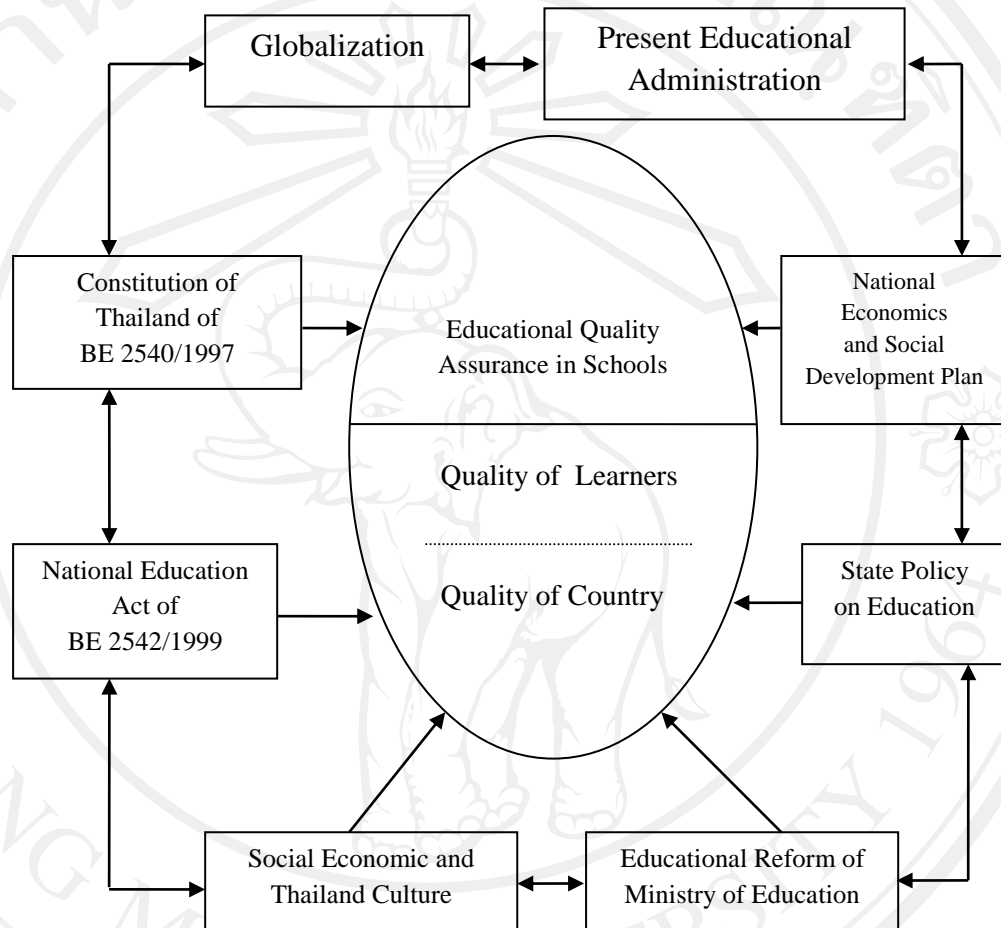
To date Thailand still has problems on education and country development such as low quality of educational administration in term of intellectual, working skill, emotional intelligence, moral quotient (MQ) that limit population quality and Thais competitive ability compared to people of other countries. The comparison of the quality level between universities in Thailand overseas universities in *AsiaWeek Magazine* in 1997-1999 revealed that the average scores of Thailand universities in these three years were lower than the averages of other countries. In contrast, the components on financial supports for Thailand universities were higher than the average scores of other countries. This data showed that the efficiency and effectiveness of educational administration as the whole of the country were lower than the state investment. The likely cause of this drawback was that the Thai educational administration lacked quality at all levels.

Starting from basic education, Thai students show poor learning achievement. Most of the students can only poorly analyze and synthesize information. The research of the Institute for the Promotion of Teaching Science and Technology on Thai students' answering exams on mathematics and science of the international association for educational evaluation showed this poor quality. The findings revealed that Thai students could answer well and achieved good scores for multiple choice questions for basic skills (such as plus, minus, multiple, division) and the memory-based exams. However Thai students failed to answer satisfactorily the questions that required analytical thinking or writing in explanation for the answers. This fact showed that the students have problem in analytical thinking, i.e. the problem in analytical thinking and the arrangement of thoughts in words among Thai students. Such abilities are necessary for leading proper life. Furthermore at the vocational level institutes the ratio of learners for population at same age is lower when compared to the regular studies institution. Thai people think that entering the regular study or normal school such as universities would produce degrees or certificates that provide higher social status and thus better opportunities for getting job. Thai people think the educational management on vocational study institutions still has low quality. Thus those who finish the study in vocational schools have poor knowledge

and low chances to work. Nevertheless now the economic system and the country development require semi-skilled workers with higher quality. The non-formal and informal education institutions unfortunately have limited amount of budget. Moreover the highest educational administration was started and developed for a century before other countries in the region even began. Only the Philippines had built universities earlier. Malaysia, Singapore, Indonesia, Hong Kong, Taipei, and Korea, for example, had built the higher education institution just after the Second World War II but these countries developed their higher education very fast. Many countries developed better than Thailand now and they have passed Thailand because the higher education institutions in Thailand expanded more in term of quantity than in quality. In addition the educational system emphasizes more on learning contents than on creating critical thinking and analysis on the reality in society. This emphasis forces the graduates who finish the study have low quality, proper knowledge, and analytical abilities. The extension of social science-related study fields such as humanities attracts more students than those fields in science and technology (about 200,000 people a year), and these students have higher level of unemployment. At the same time business establishments also complain on difficulties in looking for people with practical knowledge and ability.

Information above shows the low quality of education of Thailand that requires better development in terms of intellectual abilities, knowledge, ethics, or morality. With this reason National Educational Act of BE 2542 (1999) gives importance to educational quality and states this in its Paragraph 6 on standard and education quality assurance. Section 47 allows a system for educational quality assurance to develop the quality and standard at every level. This system is composed of the systems for internal quality assurance and for external quality assurance. Section 48 allows the parent organization and schools to arrange for the internal education quality system of the school and considers that the internal quality assurance is a part of process of educational administration that needs continuous implementation. There is the annual report that must be submitted to parent organization and related organizations and be published to the public that will lead to the quality development and educational standards to prepare for the external quality assurance by ONESQA Office (Office for National Educational Standards and Quality Assessment, Public Organization.) Section 49 allows external quality assurance in every school at least once in five years starting from the last evaluation and then submission of the evaluation results to related organizations and the public. This action will create trust to parents, communities, and society that schools can arrange the education administration with quality based on the standards. In addition in the Office of the National Economics and Social Development Board (Books number 8 to 10) aims for “people-centered development”; therefore it is necessary to develop educational quality in Thailand to realize potentials for competition with other countries in the world.

Therefore it is necessary to make the school to implement the educational quality insurance. The process can be summarized in the diagram as the followings (Department of General Education, 1999, p. 4).



Sources: The Educational Supervisor Unit, Department of General Education 1999, p. 4

**Figure 1:** The Necessity for Educational Quality Assurance in the School



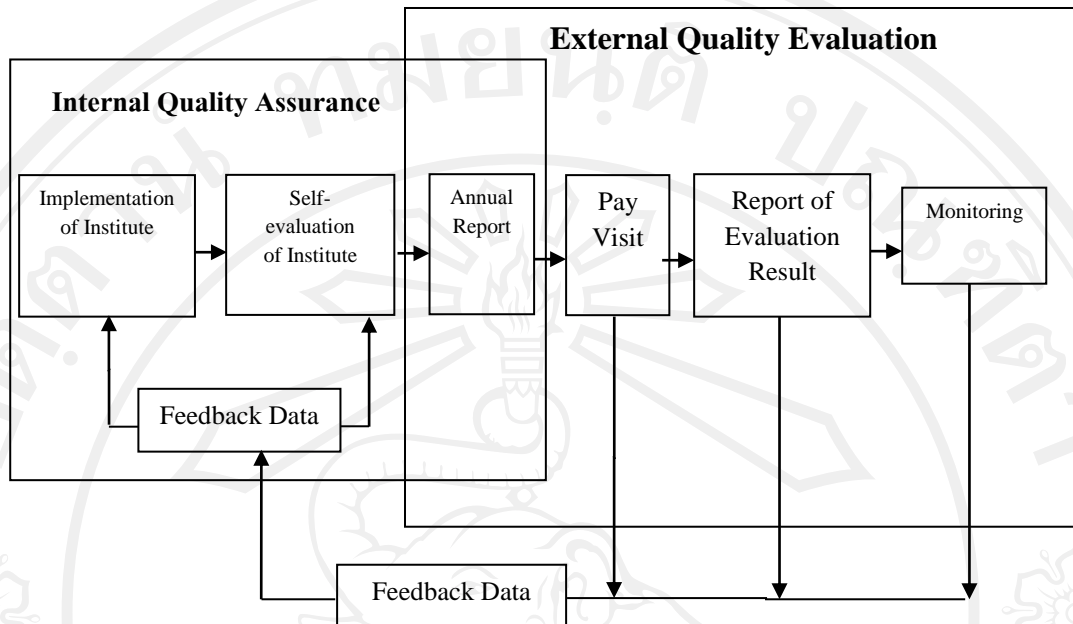
### **The Relationship between Internal Quality Assurance and External Quality Assurance**

The researcher studies the relationship between internal quality assurance and the external quality assurance (Office for National Education Standards and Quality Assessment, 2007, pp. 18-19). The results can be summarized as the followings.

The internal quality assurance is the development of quality, evaluation, monitoring or follow up, and checking the quality and education standards of the Internal Institute for Higher Education by the personnel in the Institute for Higher Education or the parents organization that is responsible for supervision of the Institute for Higher Education. The results from the monitoring/auditing the quality internal quality is that there is the system to develop quality, monitor the quality, and evaluate the quality systematically with clear mechanisms including the development of a database. The external quality assessment is the evaluation of quality on education administration, follow up, and checking of quality and educational standard of the Institute for Higher Education through outside/external education or external evaluator whose aim is to develop quality and standard of the Institute for Higher Education.

The internal quality assurance emphasizes the development of quality, monitoring of quality, and evaluation of quality that emphasize the evaluation of the standards on Input Factor and Input Process which focuses on evaluating the “Causes”. The external quality evaluation emphasizes on evaluating the “causal effect” which is evaluated from the output and outcome of the quality and educational standards on various aspects. Therefore the internal quality assurance will also influence the evaluation of external quality evaluation.

The external evaluation will apply indicators based on the standards. In evaluating the results of implementation, the Institute for Higher Education includes the visits to the schools. The evaluation considers more on philosophies, missions, and types of instruction in each Institute for Higher Education. The Institute for Higher Education must make annual reports and prepare documents including the data based on indicators to prepare for the external evaluation by ONESQA as shown in the next diagram.



Source: Office for National Education Standards and Quality Assurance (2007, p.19).

**Figure 2:** Relationship between Internal and Quality Assurance and External Quality Evaluation

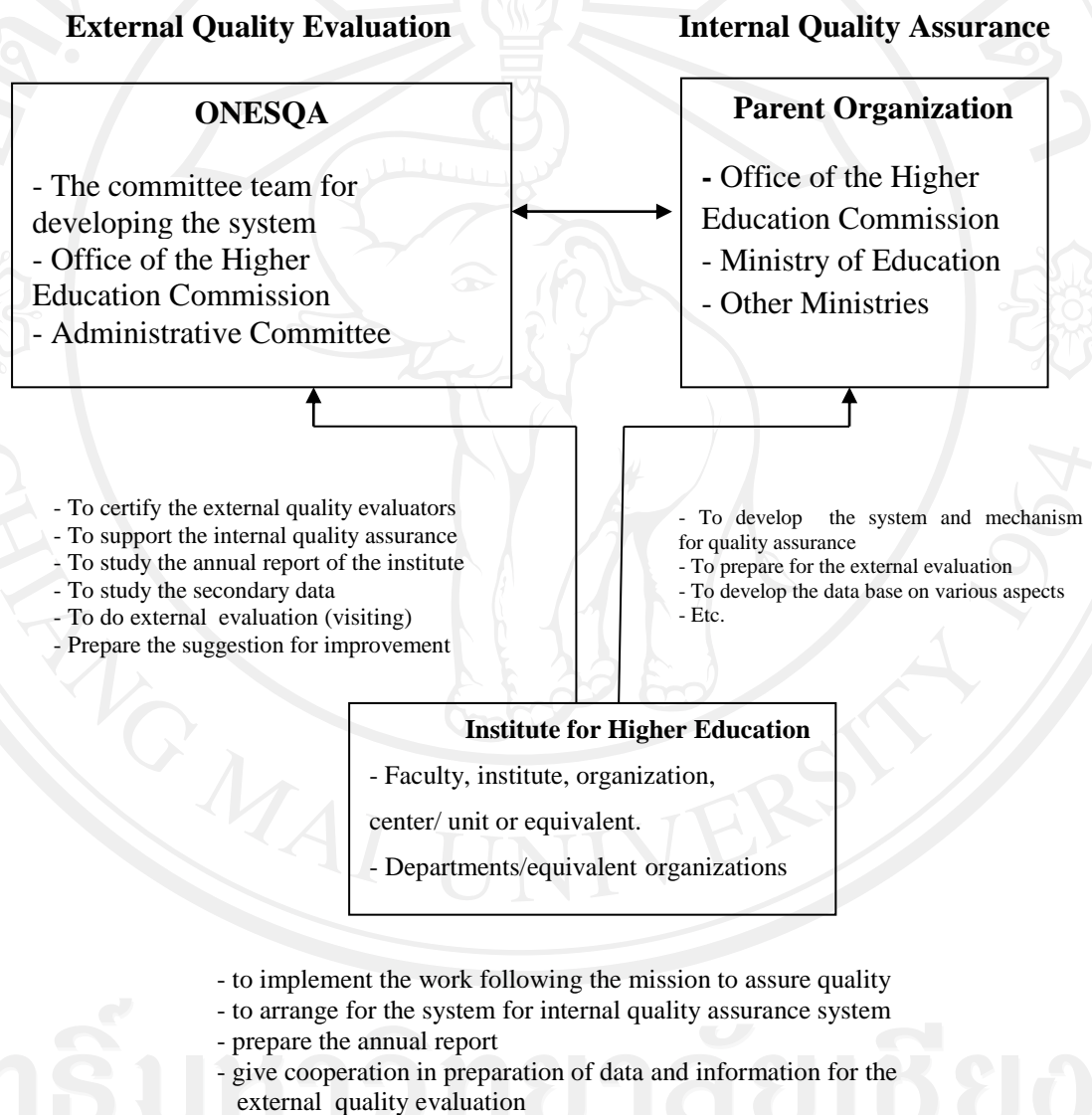
Diagram 2 shows that the Institute for Higher Education has to implement the internal quality assurance and make annual reports in form of the self-assessment report. This report will be sent to ONESQA in order to prepare for external quality evaluation.

The annual report of the Institute for Higher Education will help the external evaluation team to make plan to gather data for analysis and evaluate the quality of the institute in timely manner. The self-evaluation is an important tool for the external quality evaluation. The self-assessment report is meant not only for gathering but also for analyzing the data or results of the process of teaching and learning arrangement, research and social service, including the implementation process of administration in all aspects in authentic facts of the Institute for Higher Education.

Therefore the external evaluation is evaluated from the “authentic” conditions, which is not “from seeing” but from analyzing. The external evaluation emphasizes an evaluation based on authenticity or real situation of the data both from the teaching and learning arrangement, administration, and other administration. The criteria and the self-evaluation will cover the administration in the Institute for Higher Education and the administration in all aspects of the Institute. But the external quality evaluation is evaluated continuously from the internal quality evaluation in the Institute for Higher Education. This evaluation is considered as the work to confirm

the internal evaluation results that have been prepared by the Institute for Higher Education.

Conclusively both internal and external quality assurances, the Institute for Higher Education, parent organizations, ONESQA, and related organization play roles in the implementation. They have different roles and responsibilities as shown in Diagram 3.



Source: Office for National Education and Standards and Quality Assessment (2007, p. 20).

**Figure 3:** Relationship among Organizations that play roles in Internal Quality Assurance and External Quality Evaluation

## **Internal Educational Quality Assurance**

### **Definition of internal educational quality assurance**

The term “Internal Quality Assurance” in National Educational Act of BE 2542 (1999) means evaluation and following up to check the quality and educational standards of the school internally by the personnel of the school. The parent organization has responsibility in supervising and caring of the school (Office for National Education and Standard Quality Assessment, 2004, p.3). The implementation will enhance the educational level of the schools through the control system, system check or control, and evaluation of the quality continuously so that the personnel in the institution feel secure that they can implement the mission of the school with quality as needed by demanding the school to do self-evaluation, monitor, and follow up externally through local organizations and central organization (ONESQA).

(Rung Kaewdang, 2001, p. 105) states similarly like Chiang Mai University (2007, p. 10) that the educational quality assurance is the set of activities or implementation of main mission that implement systematically the identified plan and have the continuous evaluation on the implementation. To get the identified education quality standard, the Office of National Education Commission (2000, p. 9) proposes that the educational quality assurance is the process that personnel in every part of the school make plan together to identify target and implementation method based on the plan in every step. There is a record together to check the results to find the strength and the weakness to improve. Together they improve the plan with the aim of having efficiency in the school administration that focuses on student-centered education.

In sum, internal educational quality is tantamount to the implementation of the school to control and evaluate the educational quality with the participation from personnel to make plan for implementation and adjust the work continuously in order to secure trust from society that the implementation following the mission of the school has the quality as needed. There is the local organization and the central organization to do the follow up and evaluate the implementation.

### **Principles for Internal Education Quality Assurance**

The principle for internal educational quality assurance in the schools under the Office of National Educational Commission (2000, p.11) has three following objectives.

1. The objective of internal quality insurance is to enable the schools to develop and improve the quality together based on the educational standards. Improvement is not finding faults or blaming personnel to lose face. The main target is to develop qualities for the learners.

2. In implementation to achieve the above target in item 1 the schools are required to set the educational quality assurance into a part of the administration process and a part the work of every personnel in the school. This requirement is not the separate process from the regular implementation of the school because the school



must make the development plan and the implementation plan that have clear target, follow the plan, and evaluate and develop the plan continuously, systematically, and transparently with awareness in quality development in work.

3. The education quality assurance is responsibility of every personnel in the school such as administrators, teachers, professors and other personnel in the school. The implementation requires participants such as the learners, communities, Office of Educational Service Area, or other organizations to supervise and participate in identifying targets, plans, follow up plans and evaluation, development and improvement, brainstorming, implementation together, and pushing the school to have quality so the learners can get education with quality in accordance to the need of the parents, society, and nation.

The principle for internal educational quality assurance in the Institute for Higher Education is based on the study from Office of Higher Education Commission (2008, p. 7) and Wanchai Sirichana (1996, pp. 6-7) as the followings.

The educational quality assurance requires principles and guidelines for implementation to assure quality. Some people believe the principle education quality assurance as a system for educational quality assurance in the Institute for Higher Education still remains or holds on the principle of giving authority in developing thinking and implementation to the Institute for Higher Education. It means that the institutions have Academic Freedom in developing thoughts, the Institutional Autonomy, and the preparation of the Institution to receive the external check from outside agencies based on the principle of Accountability (Office of the Higher Education Commission (2008, p. 7). Therefore the educational quality assurance relies on whether or not the Institute for Higher Education can control the components that are used for producing graduates with quality including control of the system for the check and external evaluation the quality of graduates.

The principle of internal quality assurance system in the Institute for Higher Education and the principle of producing graduates seem related to the quality of technical of the Institute for Higher Education called the academic/technical quality assurance. The standards and quality indicators that have relationship/consistency with the principle of educational quality assurance on technical of International Institute for Higher Education have the implementation in four parts as the followings Wanchai Sirichana (1996, pp. 6-7).

1. Input is a part related to students who come to study the allotted budget for administration and development of project including their readiness in all aspects.

2. Process is implementation of instruction, measurement, and administration of project activities.

3. Context means the adjacent components that are related to implementation of the project such as curriculum, instructors, advisors, textbooks, media, and technology, including library and operation room.

4. Output means graduates who finish education, reported results of research work, or published results of academic work to serve the society.

The principle of educational quality assurance in general will receive good outcome if it relies on proper work processes. Furthermore the outcomes that get high standard must rely on quality indicators that are valid and influential to the quality of education in the future.

In sum the principle of educational quality assurance has the target which is to develop quality for the learners. This development is a responsibility for every personnel in school to participate in developing the quality assurance according to the educational standard continuously through the implementation of educational quality assurance and taking it as a regular implementation.

### **Process for Internal Educational Quality Assurance**

For the process of internal educational quality assurance, some organizations and many academics have summarized the process as the followings.

1. The process for internal quality assurance based on the concept of educational quality assurance has three steps (Office of National Education Commission, 2000, p. 7) as the followings.

1.1 Quality control is identified as quality standard for educational quality in school to develop the school to achieve the standards.

1.2 Quality check is the check and follow-up for the result of implementation of the school based on the identified standard.

1.3 Quality evaluation is evaluation of educational quality of the schools by themselves and the parent organization in the Office of Educational Service Area and at the Ministry level.

2. Process for internal quality assurance according to the concept of the administration with the PDCA Process consists of four steps as what follows (Office of Educational Commission, 2000, p.10).

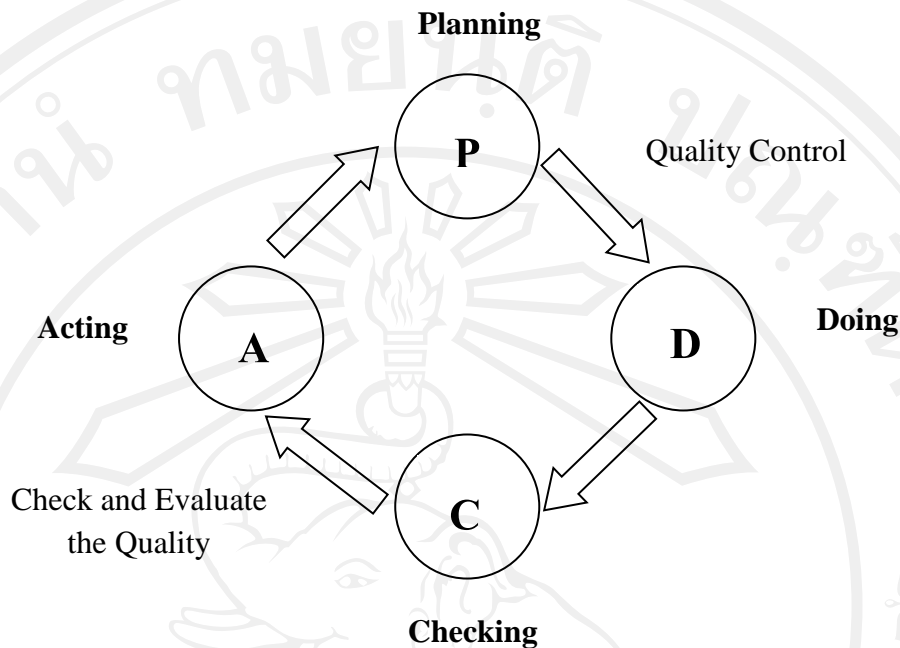
2.1 Planning

2.2 Doing

2.3 Checking

2.4 Acting

Considered on the process of internal quality assurance based on the concept of quality evaluation and the concept for PDCA Administration Circle, the following consistency can be seen.



Source: Office of National Education Commission (2000, p.10)

**Figure 4:** Relationship between Concept of System for Quality Assurance and the Concept on Administration

Diagram 4 shows the quality control and quality check as the administration process for developing the quality according to the principle of administration through the quality control. The school must brainstorm and implement according to the plan to develop the school to have quality according to the targets and educational standards. For the quality check the school must together develop the quality according to the target and educational standards. When the schools have a self-check system then the organizations from the Office of Educational Service and parent organization will come to follow up to evaluate the quality and provide assistance in improving the schools. This assistance should help the schools feel supported and enthusiastic in developing their quality.

The steps for implementing internal quality assurance

In developing the system for internal quality assurance to be a part of administration process and the work, schools should consider the conditions to realize the achievement of the implementation. The results from the research findings in pilot schools point that the school administrators must be aware to take part in promoting, supporting, doing, and producing a team work. This teamwork is composed of every personnel in the school who prepare, see the values, have knowledge, and understand the internal quality assurance and implement it continuously in all related sectors both inside and outside the school. There is systematical set of follow up, supervision, and implementation of the internal education quality assurance.

The implementation of internal quality assurance considering on the above conditions has the steps and implementation guidelines in each step as the followings (Office on National Education Commission, 2001, p. 12).

#### 1. Preparation before the implementation of internal quality assurance

The development of system on internal quality assurance to be a part of administration process and the instructional management should be prepared on certain topics or issues. The important preparation steps are the followings.

##### 1.1 Preparation on personnel

The important problem in implementing internal quality assurance in the school is the school personnel's misunderstanding about internal quality assurance as the quality administration which is a part of regular work process and of work that they have to do. This misunderstanding creates the impression of internal quality assurance as burdens. In addition most of school personnel are not familiar with the emphasis on quality and methods to check. Sometimes they even protest unnecessarily. There should be implementation steps as the followings.

1.1.1 Create awareness on the values of internal quality assurance and working as team.

Internal quality insurance is something that the school personnel in school must achieve in team. Therefore it is necessary for the school administrators to implant awareness among personnel in all units to perceive values and have the proper understanding on internal quality assurance. If the personnel understand differently in different direction with no positive attitude, the internal quality assurance in school is next to impossible to achieve.

1.1.2 Development of knowledge and skills related to quality assurance. Most of school personnel have limited understanding on the method of internal quality assurance and knowledge to implement it in each step including lack of skills in self-evaluation. There should be trainings for school personnel to have knowledge, understanding, and implementation skills for internal quality assurance.

##### 1.2 Appointment of Committee Members

Although the internal quality assurance is the mission of every personnel in the school, the implementation still requires people who are responsible in cooperating, supervising, assisting, and supporting all sectors or parties who work together and create connection in teams. The responsible persons are the most important persons in the school administration who should implement with main personnel who get assignment as committee members or working team members.

The appointment of committee members should consider the diagram of administration structure that marks the persons for the committees that are responsible for development and quality evaluation in related work such as the deputy directors on technical, classroom teachers, or subject instructors. These personnel should be committee who are responsible for the quality assurance on the teaching instruction for teachers and the learners. The deputy directors on administration and



professors in administration should be committee members, and the school should have the central committee which is composed of representatives of committee from faculty to be responsible in general.

## 2. Implementation of internal quality assurance

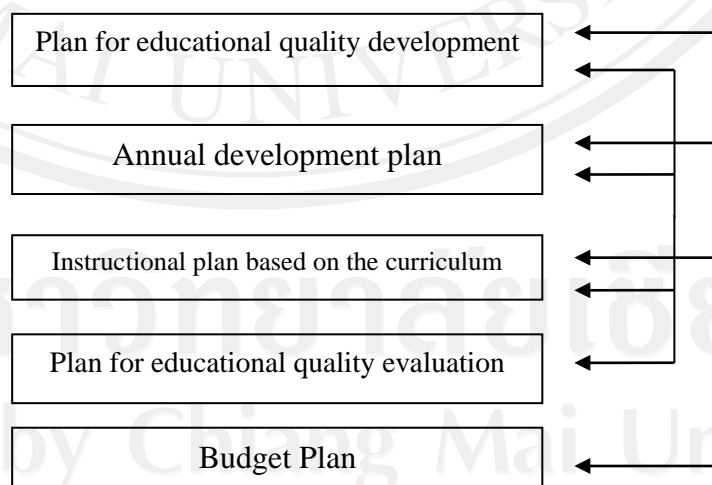
Implementation for internal quality assurance consists of four steps which are making plan, implementing following the plan, checking and evaluating, and improving the plan which require the cooperation from all sectors in every step as the followings.

### 2.1 Making plan

Planning is thinking to prepare in advance that the work plan can be achieved efficiently. Planning requires identifying targets for the implementation guidelines during the implementation. This includes the identification of the persons who are responsible for the duration of the work and resources to be used for working to achieve the target.

Basic Education Schools are required to make the School Charter or the educational quality development plan of the school. This charter is the common agreement between the schools and the stakeholders such as parents, the committee board of the school, communities, and parent organization. It will be used as the Blueprint for directing the school development to reach the target in identified duration.

In order to implement the plan efficiently, the school must have plans which are the educational quality development plan for the school, the annual implementation plan, the plan for instructional management based on the curriculum that is in accordance with the target of the school, and budget plans both in income and expenditure of the school. All plans must be correlated connected to one another.



Source: Office of National Education commission (2000, p.18)

**Figure 5:** The Correlations of School's Plans

The educational development plan is a long term plan that covers the targets and the guidelines for developing the instructional development in the school. Such long term plan is used for identifying the annual implementation plan. The short plan (a year) of the school sets the targets to implement on certain issues and with which methods. Then the school arranges the instructional plan based on the curriculum and in accordance with the identified school targets.

Making plans and evaluation plans should be done at about the same time. The evaluation would be used for supervising the implementation whether it follows the plan or not. The school administrators should identify evaluation on what issue, what evaluation method, and what model to use for data gathering and data analysis. Besides, the plan should also calculate the budget in the budget plans (both income and expenditure of the school). The budgets are necessary for the implementation of the project or activities to achieve the target of the plan.

## 2.2 Implementation of the plan

After the school prepares the implementation plan, the school personnel participate in implementation according to the identified plan. During the implementation, the school administrator should encourage and support all personnel to work happily as the followings.

2.2.1 Provide and facilitate with the resources to allow implementation to be done effectively.

2.2.2 Monitor at the levels of individual, groups, and units to stimulate and enhance the implementation according to the plan.

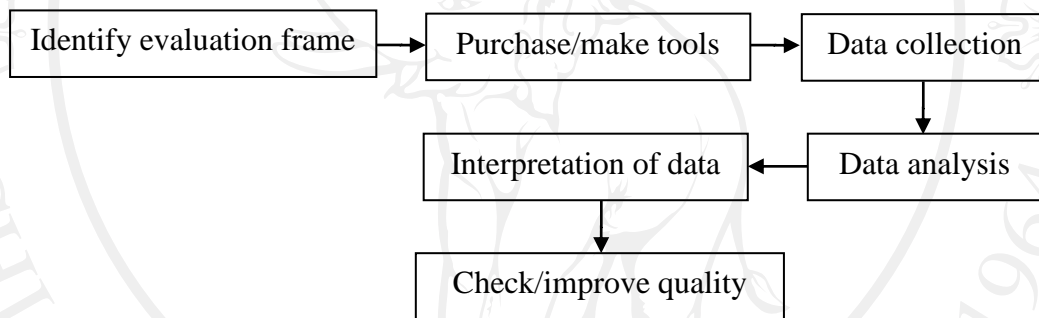
2.2.3 Supervise. During the implementation, the administrator must supervise and monitor the implementation whether it follows the set paths, targets, or the identified plan or whether any problems appear for solving. The administrators should supervise the school personnel for efficiency in implementation in terms of the instruction, self-evaluation, and other necessary skills. The administrators should supervise directly by themselves. Supervision can be done also by either inviting the trainers who have knowledge and skills on each field to supervise the implementation or sending the school personnel to attend necessary training.

## 2.3 Evaluation

Evaluation is a mechanism to stimulate the development because it creates feedback data. Evaluation reflects the past implementation in terms of achievement, identified targets, or needs for improvement. The administrators and the people who truly understand the quality assurance system must be aware of the importance of evaluation. They are not afraid of evaluation especially the self-evaluation. The self-evaluation aims to develop but not to judge for right or wrong nor to evaluate for evaluation's sake. Self-evaluation means the evaluation of regular work. The tools used might be the existing tools which mean there is no need to create the new one.

During the implementation of the school according to the implementation plan, there should be the continuous evaluation to check if the implementation is moving towards the direction that leads to the achievement of the target or the standard of the indentified indicators in the development plan and the implementation plan or not. Evaluation checks if there is any strength or any weakness that needs improvement to achieve the target, standards, and identified indicators. At the end of the semester or the end of educational year, there must be the total evaluation to summarize the judgment to further improve the implementation in the future.

The internal evaluation according to the basic concept of school- based evaluation reveals the activities through the evaluation frame, purchase or invention of tools, data collection, data analysis, data interpretation, and improvement of the quality of the evaluation.



Source: Office of National Education Commission (2000, p. 30)

**Figure 6:** Activities for the Internal Evaluation

Identifying evaluation frame is to identify the evaluation guideline for what to evaluate, who will be evaluator, and what type of evaluation. The evaluation frame should be related to the quality target or the educational standard which is identified in the development plan and the implementation plan. The evaluation frame should identify targets of evaluation, topics of evaluation, and the indicators of achievement in implementing the targets. This frame includes the kind of data required by the indicators, the identification for criteria for project duration, and the responsible people in the evaluation that the monitoring is convenient.

The internal evaluation may use various tools. These tools must be appropriate to the character of indicators to be measured. The useful tools used already, for example, for data collection need not be reinvented beyond the existing tools. The standardized tools can be applied; but if they are not standardized they need further improvement and development to have better quality by tests and trials before application.

In case that the school surveys and finds no necessity to create new tools then the constructed tools can be tried and tested for results to improve before actual application.

Constructing and improving the tools require the capability to measure the critical values to measure, the appropriateness of the personnel to collect data, and the proper questions through which relevant people can give information.

For data collection of the school, there is no need to collect new data if the data already exist in the school. The personnel just utilize the existing data to process, analyze, and then use the results for application. The school should make plan for data collection in accordance with the regular work of the school. The data collection should be done from several sources in order to cross-check the reliability of the data. And the data must be collected from various aspects. The data collection must cover the key informant groups who depend on the objective of evaluation in each list. The school should have the good data collection and data storage system of the existing data and the newly collected data for easy access for application.

The data analysis of the school includes the decision on the responsible people to participate in making analysis frame, the relevant data for each issue, the necessary levels of analysis, the persons to analyze the data, and the timing for analysis that the data can be applicable. The information or data derived from the analysis will be used beneficially when the school interprets the meaning of data by making comparison with the identified criteria which the committee must identify together to the appropriateness to the school's condition and context.

After the school implements the plan according to the identified plan, it must check the process and results of implementation in appropriateness and reliability. The relevant people hold meeting together from time to time. The administrators monitor during the supervision and the meeting with the committee to give consultation and advice to improve and develop the quality evaluation process for efficiency, accuracy, and reliability.

#### 2.4 Utilize the evaluation result to improve the work.

After the completion of the evaluation, there must be the gathering of evaluation result for analysis, synthesis, and interpretation for the whole picture. Then the evaluation results are presented to the relevant people such as the teachers, the instructors in each subject, the heads of departments/units, and the administrators to utilize the result of implementation into use or development in their work.

The evaluation results can be applied as the data for improving the implementation of the administrators and school personnel and for planning for future activities and collecting data for making decision on certain issues.

The implementation of evaluating the school must be done all the time. The result of evaluation must be considered as the information to explain the implementation conditions at that time. Evaluation needs to recheck for the implementation in next implementation that it stays consistent with targets and the



guidelines for school development. Therefore the self-improvement must be done continuously.

### 3. Making self-assessment report or annual report

When the school implements the plan according to the set plan and has the internal evaluation done, at the end of fiscal year the school must produce self-assessment report or the annual report for publication to the relevant stakeholder such as the school personnel, parents or communities, parent organization, and external evaluators by gathering the result of implementation and the result of evaluation, analysis, and synthesis. Then the personnel categorize these results according to the educational standards and then write proper reports.

The report on evaluation result and the contents that are required to convey the message should appear in two types, depending on the groups of data receiver. The first type is the report with complete details, emphasizing on the technical aspect that it can be used for the report to the parent organization and the external evaluators. The second type is the summary to publicize for the parents group and the communities. This second kind of report is presented in form of description with simple language and easy information that the parents are educated about the school information.

The content presented in the self-assessment report or the annual report must contain these following contents.

3.1 General information of the school such as the background of the school, location, area, instructional model/curriculum, administration structure, information about the administrators and personnel, number of students, budget, the data on community, and occupations and income level of parents.

3.2 Visions, targets, standards, and the implementation plan of the school.

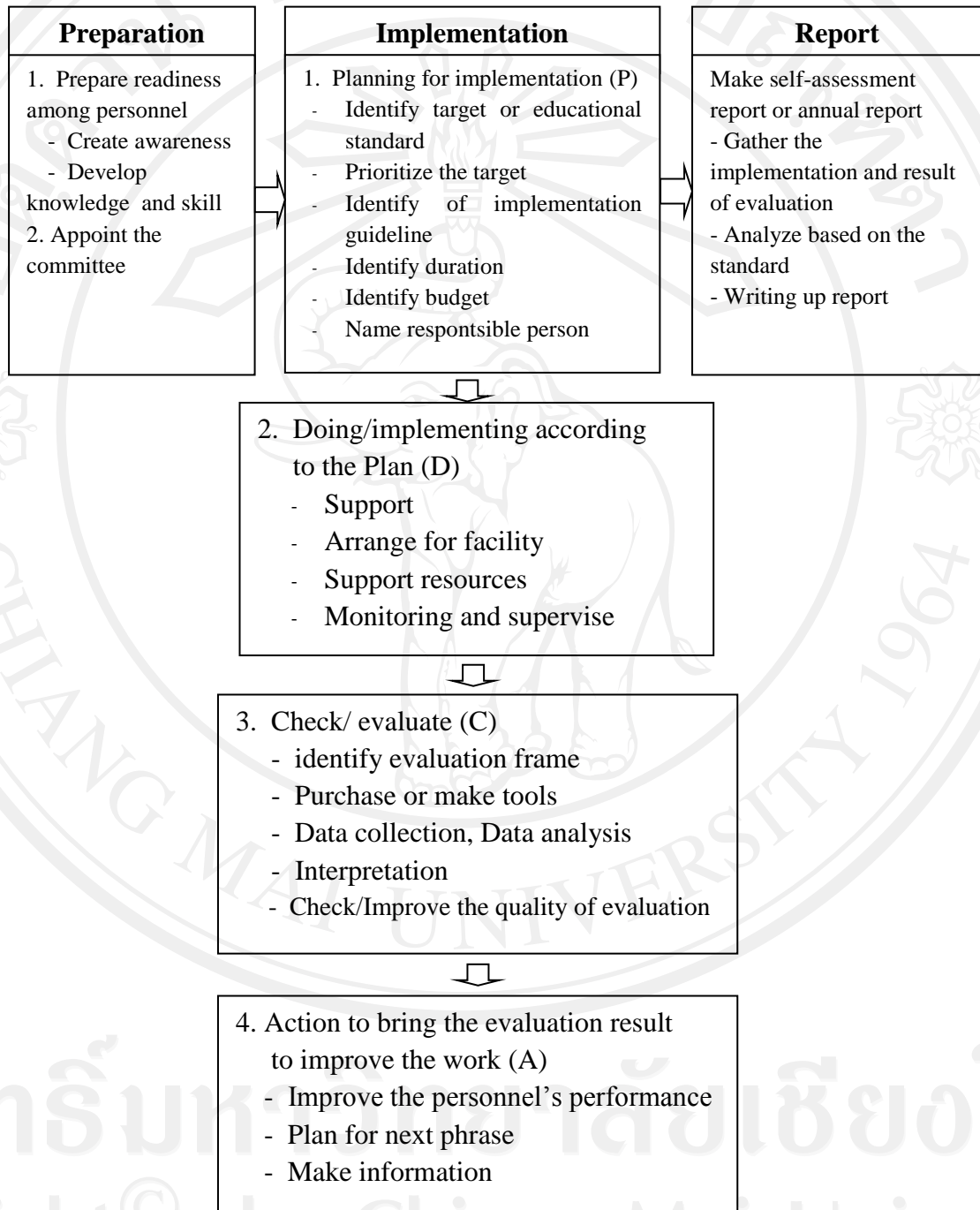
3.3 Evaluation results based on the standards and indicators. Each of the indicators should report on the target, implementation to achieve the targets, and the result of implementation which may include the evidence that supports such implementation. In addition, each of the standards should present strengths or weaknesses that need improvement and the guideline for solution.

3.4 Summary of the evaluation result of each standard which are on the learners, on the process and on the educational factors. Each aspect should tell about the strengths, conditions for achievement, weaknesses which need improvement, causes of weaknesses, and guideline for solution.

3.5 Appendix. There might be reports on the methods and tools used for evaluation if this information is needed by the parent organization.

The team who prepares the self-assessment report or the annual report should be the core or the knowledgeable person on the method for presenting the result of data analysis sufficiently. This consistency helps making summary of the evaluation result accurately. The report should include implementation on things that can be done continuously before the semester ends. The lack of consistency may

cause the delay of submission of the report on due time to the parent organization and to publicize to the stakeholders.



Source: Office of National Education Commission (2000, p.13)

**Figure 7:** Steps for Internal Quality Assurance

## **Model for Educational Quality Assurance**

### **Definition of model**

The researcher studies many definitions of the word “model” from many Thai and foreigner academics. Some give the same definition while the others give different definitions. They are as the followings.

The Thai word “Model” is translated in English as Model. It means representation, generally in miniature, to show the construction or sample/appearance of something excellent (Webster’s Dictionary, 1988, p. 87). Longman Dictionary (1981, p. 668) defines the word “model” in three definitions which are (1) a small copy of a thing, (2) someone or something which people want to copy because they are successful or known for good qualities, and (3) a particular type or design of a product.

Good (1973, p. 5) gathered the four definitions as the followings.

1. To be model of something to be guideline to create or repeat.
2. Be a sample for miniature such as example for pronouncing foreign language to which the learners can mimic.
3. Be a diagram or three dimensional picture which represents something, principle, or concept.
4. Be set of factor or variables that show relationship one another which combine to be component and symbol in social system. It can be written in formulas or described in languages.

English and English (1985, p.326 cited in Sirichai Kanjanawasee, 2007, p. 46) define model or “Model” in different definition. Model here means (1) miniature of reality, (2) representatives or patterns to be used as sample of something good, (3) the model that show relationship between information symbol and principle of the system, and (4) the sample plan of implementation that shows relationship among parts in the system.

Tosi and Carroll (1982, p. 163) stated that model is the abstraction of reality or the miniature of a certain situation which may have simple model up to complex model. It can be physical model as the miniature of object and the quantitative model which is used to explain phenomenon with language or symbol.

Yaowadee Rangchaikul Wiboonsri (2003, p. 27) defined model as the method through which individuals transfer thought, understanding, and imagination towards a phenomenon or matters to understand by using various forms of communication such as pictures, portraits, diagrams, continuous maps, or mathematical formula to make it understandable and representative to a story or issue under systematic principle.

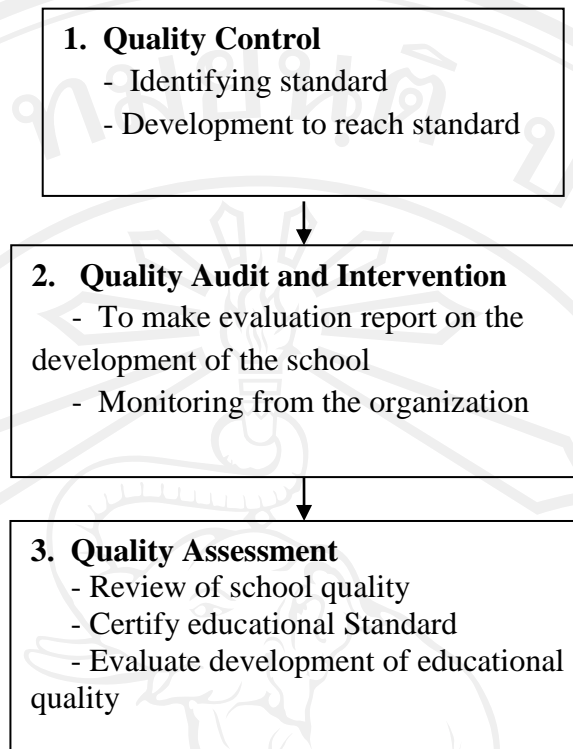
In sum model means the miniature of reality and can be used as the good samples in implementing something that shows relationship between parts in the system by presenting or transferring thoughts to others to understand in form of diagrams, pictures, or continuous maps.

### **The Model for Education Quality Assurance of the Ministry of Education**

The researcher studies the model for quality assurance from the Ministry of Education (Ministry of Education, 2000, pp. 2-3) to use it as guideline for developing the quality assurance model for community college. The Ministry of Education is responsible for arranging the national education system. The Ministry provides implementation guideline which leads to the educational quality assurance to create the trust or high reliability on the educational product with quality based on the educational standards. To reach acceptance by the society the Ministry of Education has identified three steps of implementation as what follows.

1. Quality Control of education composed of the followings.
  - 1.1 Identification of standards on input factor, process, and output.
  - 1.2 Development of educational factors into the standards composed of developing educational personnel, curriculum, the instruction process, the administration system, and management.
2. Quality Audit and Intervention is the process for monitoring and evaluating the progress of the school which is composed of the followings.
  - 2.1 Internal Auditing which is the evaluation of development and report of outcomes to the stakeholders.
  - 2.2 External Auditing
  - 2.3 Seek for guideline for improving educational quality for the quality that does not reach the standard criteria (or Quality Intervention).
3. Quality Assessment is a process for the educational quality auditing based on the identified standards.
  - 3.1 Review the educational quality.
  - 3.2 Evaluation to certify for the education standard of the school (Accreditation).
  - 3.3 Evaluation for developing the educational quality (Total Quality Education).





Source: Ministry of Education (2000, p. 3)

**Figure 8:** The Model for Educational Quality Assurance of the Ministry of Education

#### **The Model for Educational Quality Assurance in Basic Education School**

The identification of guideline and the method for internal quality assurance based on the Regulation of the Minister of Education on system, criteria, and methods for educational quality assurance in Basic Education level and pre-school level in 2001 is stated in Item 2.1 (1) on the authority of committee board for internal quality assurance in the school. The committee board members have responsibility on identification of guidelines and methods for internal quality assurance in school. The schools will identify the guideline by themselves by holding this principle (Office for National Education Standards and Quality Assessment, 2003, p. 37).

The Office of National Primary Education Commission identifies the guideline for educational quality assurance by using the same concept for the quality assurance of the Ministry of Education which identifies the guideline in developing every organization under the parent organization starting from the level of department, district, and school and trying to implement in the same direction towards the efficient implementation administration of the school. The process to implement the quality assurance in school is based on the guideline of the Office of National Primary Education Commission follows the following steps for activities.

Step 1: Quality Control for education, in which the school should implement the following steps.

1) Prepare readiness for school personnel by developing every personnel in the school to see importance and to good attitude towards the educational quality assurance and creating the knowledge and understanding on the quality assurance both internal quality assurance and the external quality assurance. Various methods are used to create awareness on educational quality assurance. Meetings or brainstorming for identification, study tour, and invitation for trainers to come in these meetings are included.

2) Appoint the committee to develop the system for internal quality assurance in the school. Development of the education quality assurance system is considered as the responsibility of every personnel in the school including the stakeholders outside of the school. There is identification of roles and responsibility of personnel in the school. The committee is responsible for cooperating, supervising, taking care, monitoring, helping, and supporting the development to be implemented systematically and continuously.

3) Make plan, collect, and store information in the school both the physical data which are data or numbers of building, data on number of school personnel and qualitative data which are data on the strength, weakness of the school, and data on individual students. This set of data will be used as basic demographic data in developing the internal quality assurance system in the school.

4) Identify the educational standards. The school identifies the standards at the school level which are appropriate to the learners, school, and communities, and consistent with educational standard of the parent organization.

5) Make the educational quality development plan of the educational quality of the school by doing survey on needs and expectations of the parents, school committee board, and the community to the school. This survey includes the study the national educational standard, policy of the parent organization, and the potential of the school to be the basic data for identifying visions or targets of the school. This survey needs participation from relevant personnel to prioritize the importance of targets and identify the missions of the school then to make long-term development plan on educational quality. These include the school charters or the development plan on the educational quality in the school and the short-term development plan on educational quality which are the annual implementation plan. The administrators of the school will be the persons to work and certify the identified implementation plan together.

6) Implement the activities based on the development plan on educational quality the school means implementation of activities based on the plan to develop, enhance, and support the educational quality of the school following the target identified in the development plan for education plan on the educational quality. These are the activities based on curriculum and the additional activities

stated in the curriculum. The administrators and school personnel must launch activities together following the implementation plan and the school structure that they can implement the plan efficiently.

Step 2: Quality Audit and School Improvement. In this step the school should implement these following two activities.

1) Internal quality auditing is the process that uses the school to audit or evaluate the work of the school by covering all the missions according to the plan. The method that is widely used for internal auditing in the school is the self-assessment.

2) External quality auditing is the process to quality audit and support to create the development of educational quality to reach standard. The quality auditing that is implemented in the school is done through the perception of the stakeholders outside of the school which are administrators above the school level, supervisors at provincial/district level, communities, and parents. This method is widely used in external quality since auditing is a 100 percent of supervision. After the supervision from the people inside the school then the school utilizes the results of auditing to improve correctly and get assistance and support from parent organization, communities, parents groups, and relevant people.

After the school makes internal quality auditing and the external quality auditing, the school must analyze, synthesize, and summarize the results of implementation of the school in form of annual report. This report will present the outcome of implementation of the school to the parent organization, committee board of the school, parents, and communities. In addition this implementation result will be used in making plan, identifying target for quality development in next fiscal year, and using the results to improve implementation plan/project for success in the future.

Step 3: Quality Assessment is the implementation in the level of department, province, and district to launch quality assessment of the school under the parent organization together based on the educational standard frame at the national level to certify and arrange the level of quality of the school and monitor the development of quality in the school as the whole picture of the country, province, and district.

In sum the identification of the guidelines and methods for internal quality assurance includes control of educational quality through the preparation for readiness of the personnel of all sectors including participation to identify educational standard, auditing, and improving the school (internal auditing and external auditing). The summary of implementation result is then reported to the public and then the results are used to improve the implementation. Besides, there must be the quality evaluation for the self-assessment and the assessment by external organization. This guideline for internal quality assurance will be done continuously in proper process to build development in the school and educational quality sustainably.

### **The Model of Educational Quality Assurance for Institute for Higher Education**

The Educational Quality Assurance for Institute for Higher Education has the process for educational quality assurance by identifying the system and the mechanism to control auditing and evaluating of the quality of the Institute for Higher Education as what follows (Ministry of University Affairs, 2001, pp. 4-5).

#### **1. The educational quality control**

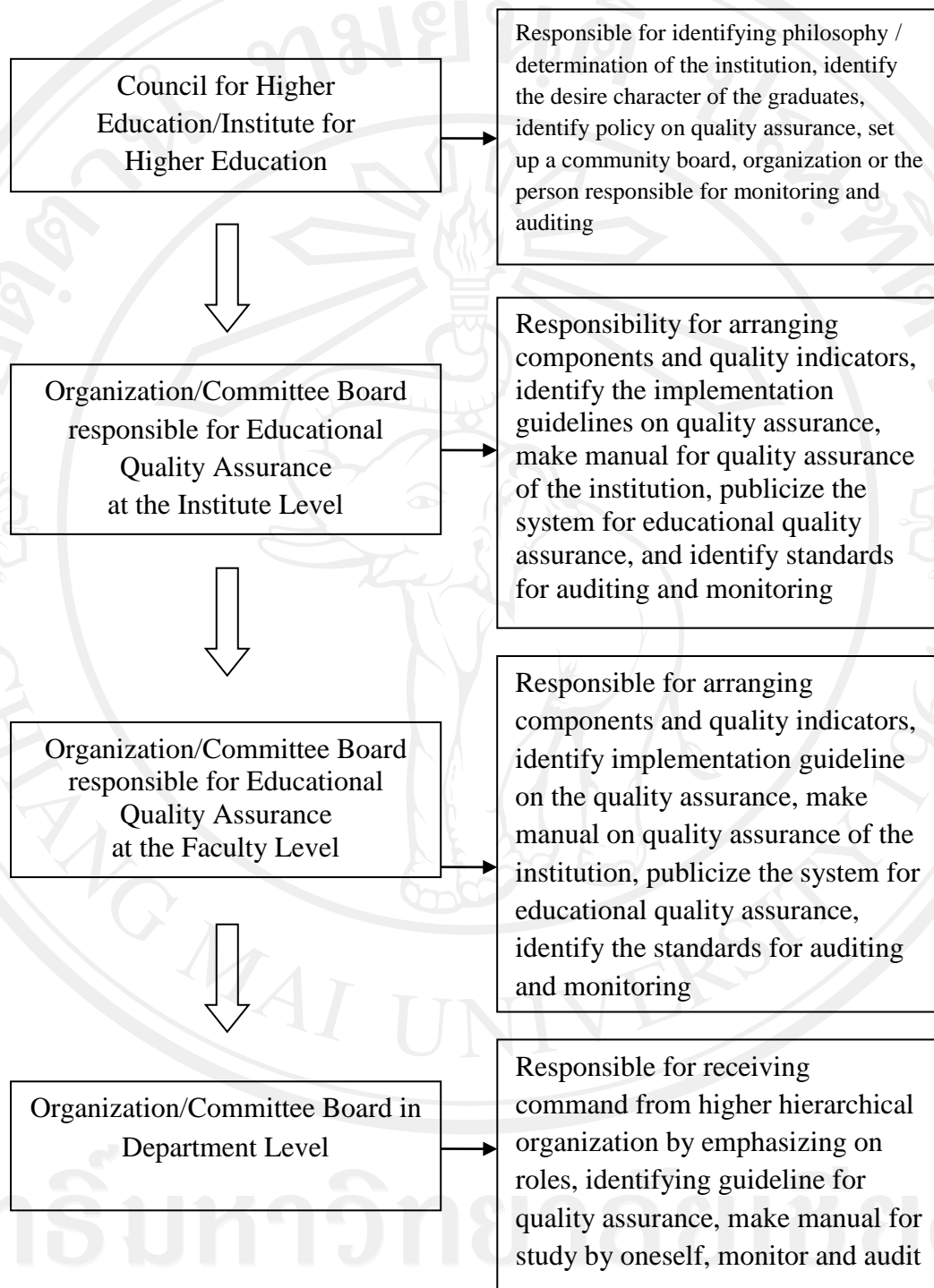
Educational quality control is arranging to have the system and mechanism in each component of quality to control the implementation of the institute so it gets the outcome and result as quality indicators. The steps are as what follows.

##### **Criteria of the system and mechanism to control the quality**

The Institute for Higher Education arranges the system and the mechanism to control the internal quality by holding philosophy and determination of the Institute. The components for quality and indicators of quality which the Ministry of University Affairs has identified are the guideline in arranging the system and mechanism.

The mechanism to control the quality is organization and committee who are responsible for education quality assurance which may be established at the institutional and in faculty levels. They have roles, responsibilities, and relationship with other organizations in the institution according to the system as shown in Diagram 9.





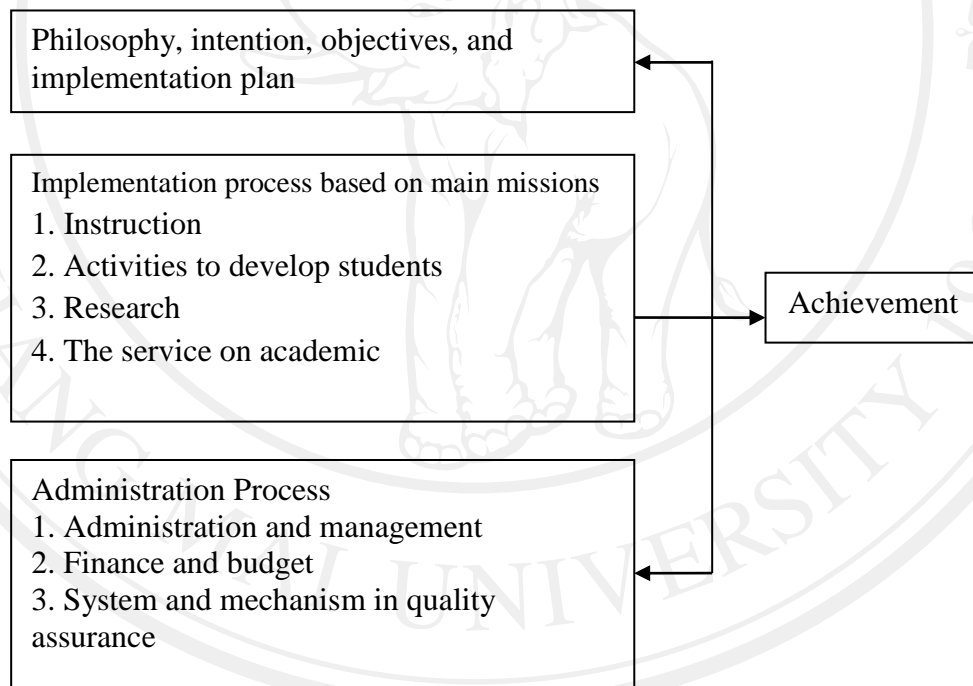
Source: Ministry of University Affairs (2001, p. 5)

**Figure 9:** System and Mechanism to Control the Educational Quality in Higher Education Level which the Educational Institution Develop system of quality

Selecting the quality system the Institution for Higher Education may develop the system of quality which is appropriate to the character of the Institution. This quality system can audit, make reference, or consider the international quality system. Whether the system that has been developed independently or adopted from the international system it must be the administration process of quality that has planning, implementation, auditing, evaluation, and improvement according to the component of identified quality continuously.

#### Components and quality indicators

The components for quality and the quality indicators for whatever quality system the Institute for Higher Education selects must consider main nine components in implementing the Institute for Higher Education. These components are the followings (Office of Higher Education Commission, 2008, p. 16 and Ministry of University Affairs, 2001, p. 6).



Source: Office for Higher Education Commission (2008, p. 16) and Ministry of University Affairs (2001, p. 6)

**Figure 10:** The Main Components in Implementing the Institute of Higher Education

Therefore the internal quality control in the Institute for Higher Education must arrange systems and mechanisms to control the educational quality by basing on the quality component and quality indicators in accordance or with the main components.

#### 1. Check/audit of educational quality

The auditing of internal quality is a process of educational quality assurance to know the efficiency and effectiveness of the implementation on quality assurance and to know its problems in looking for guidelines for improvement. The audit system of educational quality has a guideline that the faculty/Ministry of University Affairs should appoint the committee team to audit the quality, to study, to analyze the institution that has a system and mechanism to control the quality, and to implement the system and such mechanism to reach implementation outcome. In addition the committee gives suggestion and advice for improving better quality. The analysis will use the Self-Study Report of the Institution including secondary data including the supervision of the organization within faculties/institutions (Ministry of University Affairs, 2001, pp. 11-12).

#### 2. Educational quality evaluation

The educational quality evaluation is a process after the audit of quality emphasizing the analysis to compare the implementation results of the faculty/institution with the quality indicators in every component of the quality. This evaluation would find out if the implementation is in accordance with identified criteria and educational standards by arranging the levels of target achievement.

### **Model for Educational Quality Assurance of the University under Ministry of Public Health (Praboromarajchanok Institute)**

The study of educational quality assurance of the university under the Ministry of Public Health (Praboromarajchanok Institute) cited from Paiboon Paonil (2000, pp. 66-67) can be summarized as the followings.

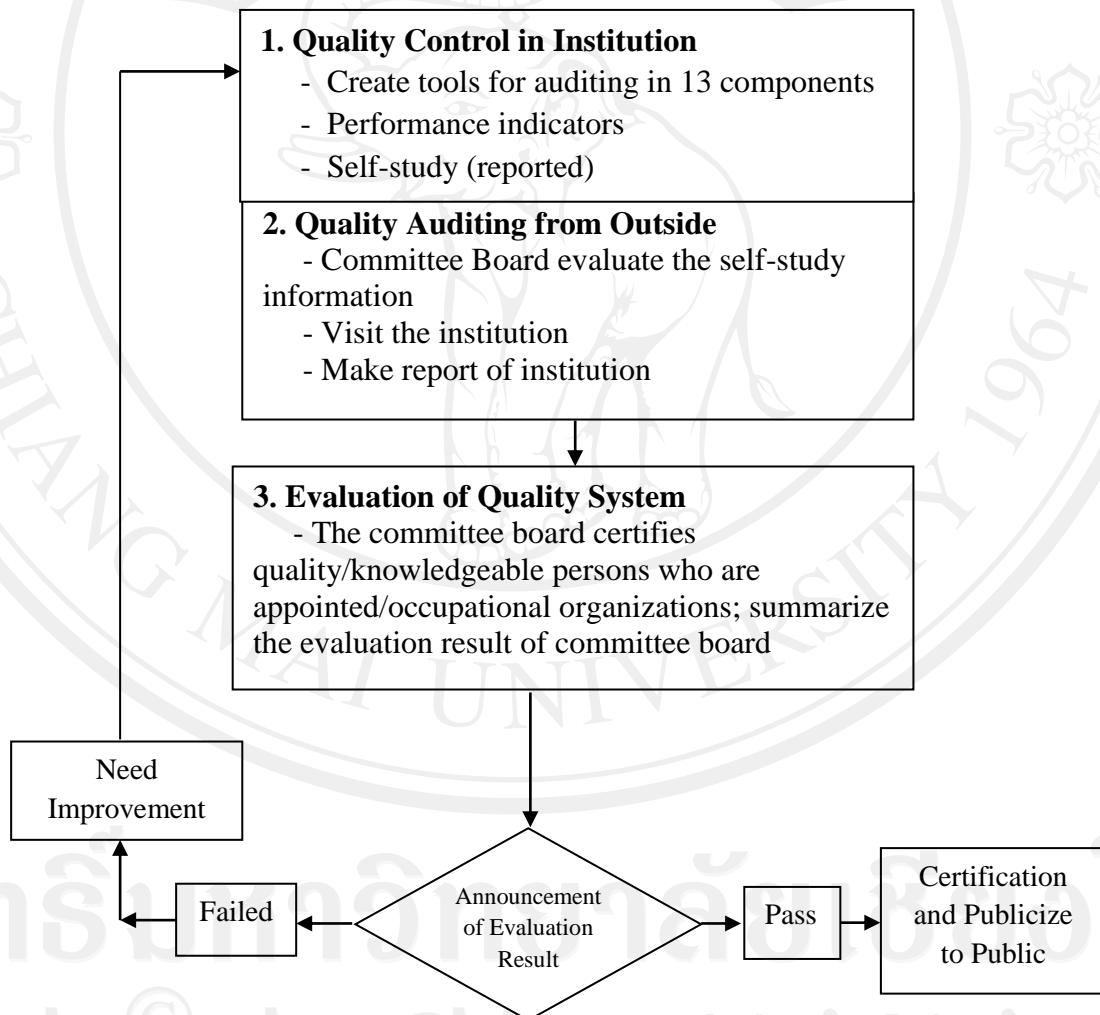
Ministry of Public Health plans to implement the educational quality assurance in 43 universities under the Ministry of Public Health starting from 14 January 1998 to be consistent with the National Economic and Social Development Plan in Book Number 8 that emphasizes the development of educational quality and human resources (application in fiscal year 1998).

The guideline for quality assurance in the universities under the Ministry of Public Health has the implementation steps similar to those of Ministry of Education and Ministry of University Affairs which have three parts of implementation as the followings.

1. Controlling of the internal quality of the institution is the activity that must be implemented systematically considering the component which influence to the quality of the outcome with the principle for quality control, systematic auditing, and clear indicator.

2. Quality auditing from the outside educational institution is the mechanism to audit the system to control the quality through the occupation standard organization or the organization that controls the quality which the Ministry of Public Health appoints to audit the institution whether the system follows the standards or not.

3. Evaluating the system on educational quality assurance which is mechanism after the auditing quality which may be implemented by the same set of committee team. The evaluation emphasizes the implementation both on effectiveness and efficiency of the system to control in each educational institution. Diagram 11 shows the education quality assurance for community colleges under the Ministry of Public Health.



Source: the College under Ministry of Public Health, cited in (Paiboon Paonil 2000, pp. 66-67)

**Figure 11:** The Education Quality Assurance, College under Ministry of Public Health



### **Model for Educational Quality Assurance in Department of Vocational Education**

The study of educational quality assurance of the Department of Vocational Education (2002, pp. 6-7) categorizes the system for quality assurance in vocational education into two systems which are internal quality assurance and external quality assurance as the followings.

1. Internal quality assurance in the school is the system that creates efficiency in the school under Office of Vocational Education Commission for administration that can work with proper direction by identifying the standard of vocational education to be implementation with clear targets and implementation plan. In the implementation following the plan to achieve the target the committee must supervise, monitor, audit, and evaluate the internal quality or through self-assessment to audit what the school has planned in each year. The main objective is that the school develops or improves to direction of target all the time through the implementation process which is composed of Planning, Doing, Checking to improve the implementation, and Acting which have the implementation steps for educational quality assurance as what follows.

1.1 Quality Control consists of (1) identification of standard for vocational education, quality indicators and evaluation, (2) development of standards is arranging the educational development plan of the school, annual implementation plan, and other plans to supervise the school implementation

1.2 Quality audit and intervention can be done through supervising, monitoring, and reviewing to identity in self-assessment system to improve the implementation results of the school.

1.3 Quality assessment is the evaluation of effectiveness and efficiency of the implementation for quality control. Assessment is divided into two parts which are (1) internal quality assurance done by the higher supervision organization like parent organization to ensure internal quality, and (2) external quality assurance done by the Office for National Educational Standards and Quality Assessment (ONESQA).

2. External quality assurance is the part of the system for the quality assurance in educational assurance. The external quality evaluator is the person or the organization outside the school which the ONESQA (Office for National Educational Standards and Quality Assessment) appoints. It is a continuous process and related to the internal quality assurance and functions as the auditing of internal quality assurance or the self-assessment of the school. Therefore the criteria and implementation method should be consistent that it really produces development to enhance the quality level and educational standard of the school to excellence.

**Figure 12:** Educational Quality Assurance of Department of Vocational Education

## **Community College**

### **The Background of Community College**

The research studied secondary data on background of community college from many sources. They are from Thong-In Vong-Sothorn et al. (2001, pp. 1-14), Bureau of Community College (2002, pp. 1-2), Bureau of Community College Administration (2004, pp. 3-14), Uthai Dulayakasem (2006, pp. 1-3), and Suchart Jaipukdee (2007, pp. 155-163). From these studies above the researcher summarizes the background of community college as what follows.

The concept of establishment of community college in Thailand was established since 1970. The first community college was Phuket Community College established in 1977 at the campus of Prince of Songkhla University. Later another community college was established in Surat Thani Province. There were four teacher's colleges in 1994. The Cabinet allowed Ministry of Education to establish community colleges by allowing 77 specific educational institutions such as Agricultural College, Physical Education College, Dramatic Arts College, and College of Fine Arts nationwide to become community college. These institutions played role in educational administration and served the communities widely. However community colleges were not successful based on its original intention. This failure can be attributed to the misunderstanding of the philosophy in its educational management or the lack of community participation in its educational management. Therefore the community college ended in 1996 according to the decision of the Minister of Education. However the new Constitution of Thailand of 1997 Section 3 on the right and freedom of Thai citizens and National Education Act of BE 2542 (1999) Section 10 Paragraph 2 on right and educational duty stated that "individual has rights equally in getting basic education of at least for 12 years and the government must provide the education widely and equally with quality without collecting fees". This set of regulations increased the number of people who could access basic education. This increase meant higher need to provide higher education level. The Office for National Education Commission estimated that the number of person who had finished the basic education level increased from 511,000 in 2001 to 692,000 people in 2006 and 919,000 people in 2011. However the Institution for Higher Education both from government and private sectors cannot accommodate more students for levels below bachelor degree and bachelor degree. In addition the people in the rural area still have little opportunity to study at higher levels, to develop their occupation further, and to improve life quality. Office of National Education Commission supports the research on "Community College: The Model of Institution for Higher Education in the Below Bachelor Degree Level to Study the Condition and Problems and Obstacles in the Arrangement of Higher Education in the Level of Below Bachelor Degree Level on Organizations in the Country" that studies the overseas model and present the guideline for management of higher education for below bachelor degree level appropriate to Thailand context.

Such research findings become the guideline for the Ministry of Education to implement according to educational policy. For example, item 4 stated that “the establishment to arrange community colleges especially in provinces that lack institute for higher education.” Afterwards the Cabinet had the consensus on 19 February 2002 to re-establish the community college in 10 provinces which are Mae Hong Son, Tak, Phichit, Nongbualamphu, Mukdahan, Buriram, Sa Kaew, Uthai Thani, Ranong, and Narathiwat. The four reasons cited for this consensus are the followings. First, the students who finished Matthayom Seuksa level or equivalent but could not access study at the higher education level were not fully ready for jobs and they needed to learn further. Second, this policy responds to the development of local economy, society, and communities and supports the government policy as aim to create strength for local communities. Third, this policy develops the skill, knowledge on occupation for the local people to develop their life quality, performing occupation independently or performing occupation in business establishment. Fourth, the policy decentralizes educational administration to the local by using the existing resources in each area and in different organizations to administer education for community college. The main important policy and principle for establishment is to use the existing resources in the province to implement community college by using the existing school and to enhance it into a real community college. There is no need to construct new educational institution or new school but just to use the educational organization, business establishment in government and private sectors, learning sources in the community and localities as the network for the educational administration in the community college. The instructional management must respond to the need and the business establishment in the community and allow the community and locals to participate in the administration. The implementation of community college is an innovation to maximize the management of existing resources. At present the community college extends the establishment up to 20 places countrywide.

### **Philosophy and Vision of the Community College**

In studying of secondary data on philosophy and vision of the community college from the Office of Community College Administration in 2004 the Bureau of Community College Administration (2004) states that education is valuable to individual, people, and society as a whole. Individuals should get the best education based on their potential and the government potential. The community college establishes and exists to create educational opportunity of the members of local communities to develop themselves in subjects that will enhance the value of life and increase the potential of communities in social, economic and society. It is the first institution for higher education below bachelor degree with communities playing role in the administration to respond to the problems and needs of communities. It is also an important mechanism for the social economic development and for opportunity for members of communities for life-long learning.



### **Mission of Community College**

The researcher summarized from the Bureau of Community College Administration (2004, pp. 3-14), Suchart Jaipukdee (2007, pp. 155-163), and ONESQA (Office for National Education Standards and Quality Assessment) (2008, pp. 1-10) as what follows.

Community college has two main assignments given by the government which are (1) to arrange the education at below bachelor degree level in every subject that responds to community needs where the college is located and (2) to provide training for developing occupation and life quality of members of communities. From such mission the community college therefore arranges education both on technical and occupational side by side with curricula that respond to the socio-economic needs of the country. The educational administration at the level below bachelor degree is categorized in four types which are vocational certificate level, high vocational diploma level, foundation studies, and the arrangement of short courses. There are the educational administration methods in formal, non-formal, and informal education. The model is open and varied to adapt and keep up to the changes of the world at present. It is flexible in terms of class participation, schedule, study visits, instructional methods, and the completion of education. The instructors can be classified into two groups. The first group is teacher minus permanent professor of the community college and teacher minus professor in the educational institution who are invited to teach as visiting teachers. The second group is knowledgeable people with local wisdom who have knowledge ability and experience in teaching or transferring knowledge and are invited to be visiting teachers or trainers. The groups of learners are composed of the students who finished Matthayom Seuksa level or equivalent, people at the working age who miss opportunities to study at higher level, the illiterate persons who complete no education at any level or those who quit school, the persons who finish compulsory education of nine years, persons who retreat from work, people who work and want to increase knowledge and experience, and learners in regular education system who want to develop abilities in certain subjects.

### **Organization Structure of Community College**

The arrangement of organizational structure in community college or the administration structure of community college is divided into two levels which are center and college (Bureau of Community College Administration, 2004).

#### **Center**

Organizational structure of center is composed of the personnel administration team and the responsible organization as what follows.

1) Board Committee of Higher Education is the team of educational administration in higher education of the country. They have authority in supporting the resources, monitoring, auditing, and evaluating the educational administration

including suggesting on issuance of rules, regulations, and criteria and announcing on the administration of the office.

2) Office of the Higher Education Commission is the organization responsible for the educational administration in the higher education level of the country. It is responsible to be the Office that has authority in suggesting or proposing the policy and standard for higher education, preparing criteria and guideline to support the resources, and establishing the allotment of budget to monitor, audit, and evaluate the administration of the higher education based on the assignment of the Committee for Higher Education.

3) The committee board for community college is the personnel team on educational administration in the higher educational level below bachelor degree level. The model for this community college is having authority in making consideration on proposing policy, development plan and educational standards of the college to the committee for Higher Education. The college also has authority to offer opinion or agreement on educational curriculum of the college that is consistent with the standard identified by committee board of higher education that in turn will identify the guideline, cooperate, promote, and support the college to arrange the system of network in educational administration, monitor, audit, and evaluate the educational administration of the college.

4) Bureau of Community College Administration is the organization under the committee board for higher education that is responsible for arranging the educational arrangement in higher education level below bachelor degree level in form of community college. This committee has authority in making suggestions on policy, data system information system, supervision or audit, follow up, monitor, evaluation, and educational standard. It also can develop and promote educational administration of community college and cooperate in the network system on educational administration in the country and overseas.

### **College**

Organization structure of the college is the organizational structure of each community college which is composed of the followings.

1) Council for Community College is the personnel team of board for the community college administration in general.

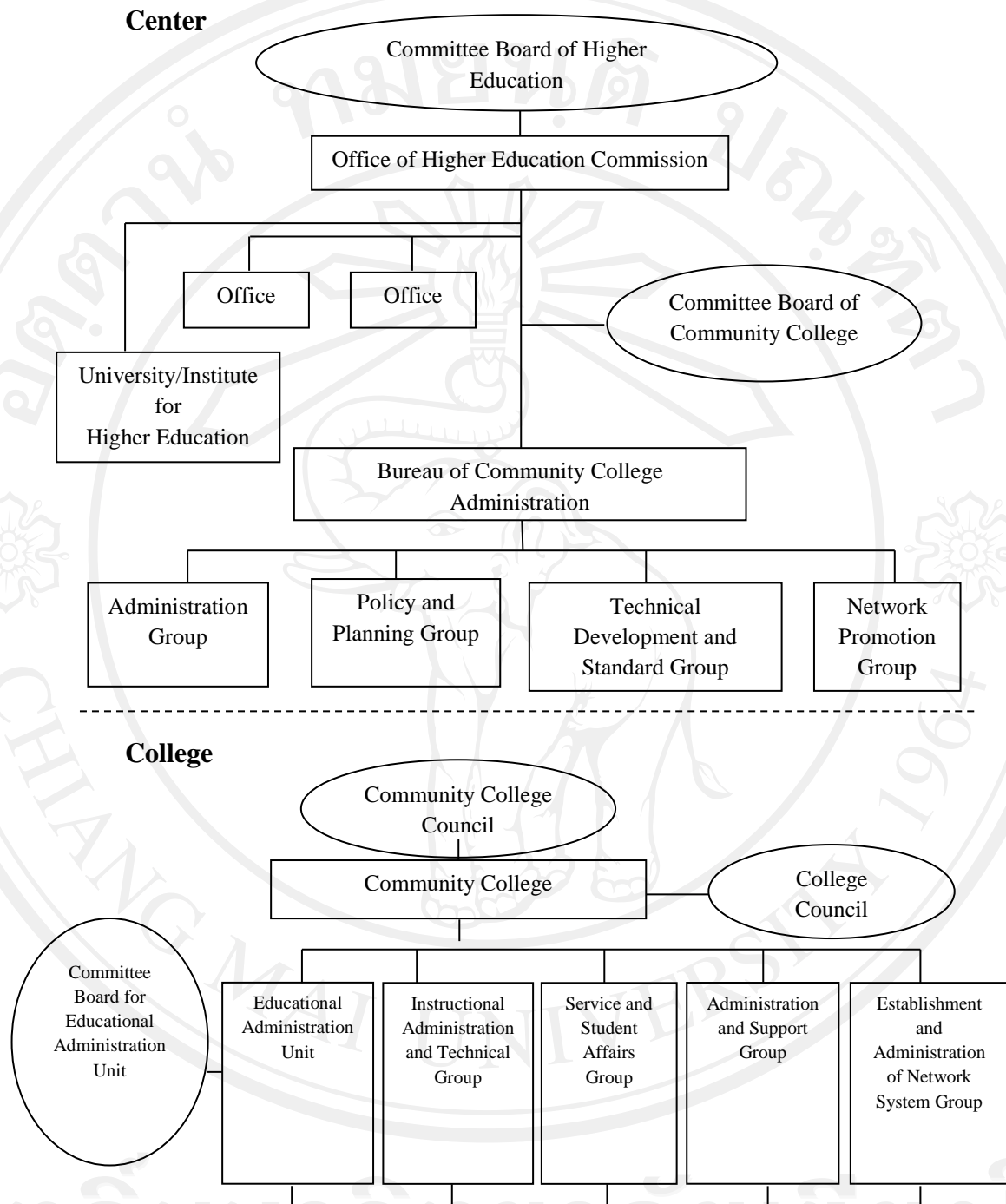
2) Community colleges are parts of government sector that belong to the network system of community college.

3) Technical council is the personnel board of experts on technical matters from the whole system of community college. They have authority in giving advice and suggestion to the College Council and the director on curriculum, instruction, and educational quality as well as opening subjects or curriculum and implementation of educational organization.

4) Educational administration unit is the place where the council of community college announces the establishment of educational administration unit

and the network of community college to arrange education based on community demands together with community college. This unit has authority with community college and the other educational administration units to arrange education based on the educational administration plan which the council of community college agrees. This unit also opens vocational certificate level and high vocational diploma level, Foundation Studies, and the short courses as well as trainings, life-long education, and other studies as needed by the community.

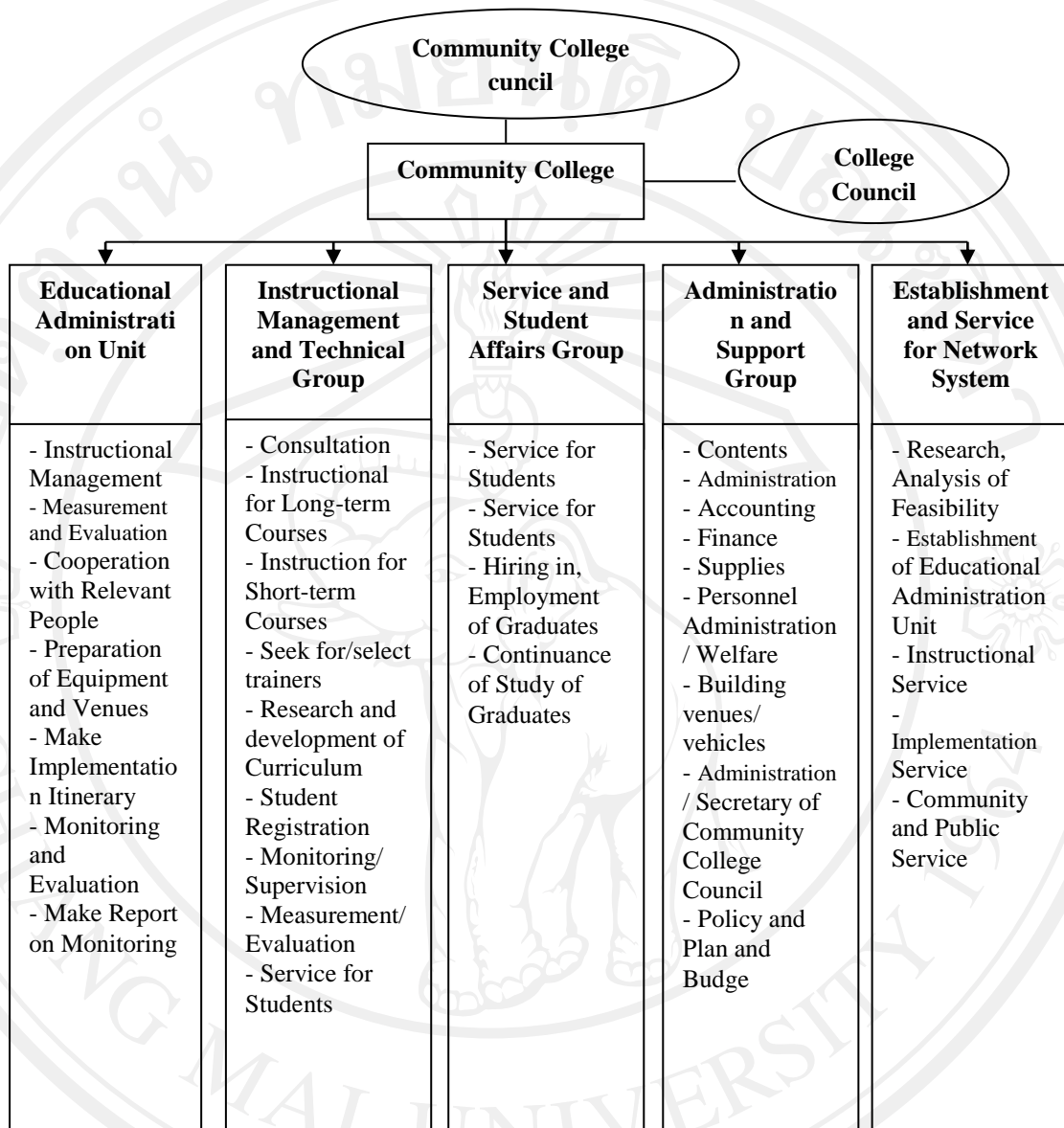
5) The committee at the educational administration unit is the personnel team who support the implementation of educational administration unit. It is responsible for monitoring and supporting the educational administration unit.



**Source:** Bureau of Community College Administration, 2004

**Figure 13:** Organizational Structure of the Community College





**Source:** Bureau of Community College Administration, 2004

**Figure 14:** Structure of Community College

### **The Educational Quality Assurance of the community college**

The researcher studies the educational quality assurance of the community college from the Bureau of Community College Administration (2005, pp. 43-51) and can summarize the concept on the educational quality assurance of the community college as what follows.

The concept of Quality of Life Theory on the quality administration and intention according to the philosophy, principles, and missions of the community college (including the awareness of the citizens) is checked through visits on five community colleges to meet the administrator, professors, the committee board of the community college council and students. The study proposed that the quality of the community college should be classified into four groups as following.

1. Outcome quality which are the quality of the graduates in Vocational Certificate and Vocational Diploma levels, the quality of the people who passed the short course training, and the quality outcome of the professors, students, and communities.
2. Quality of administration which are the quality of the administration process and the outcome of the administration and the community college council.
3. Quality of the people who participate in the development which are the quality of the professors, committee of community college council, and the community network.
4. Quality in term of the perception of the community or people.

The educational quality assurance in the community college in its implementation to reach the actual quality in the implementation must reflect the following chart.

$\text{Quality Assurance} = \text{Quality Mind} + \text{Quality Process} + \text{Quality Improvement}$ $\text{QA} = \text{QM} + \text{QP} + \text{QI}$
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Quality Mind means the qualification of the personnel who have awareness and enthusiastic to respond to the stimulation for educational quality. They are willing and caring for factors that influence the educational quality “in preventing” any undesired thing to happen and thus supervising the implementation process carefully. They have ideal and spiritual values for creating the quality of life, quality of work, and quality of outcomes.

Quality Process means the process that is designed to have objective and quality method to create added value in the implementation process. Based on the principle that “the outcome with quality appears from implementation process with quality” this process is related to the working method of the practitioners, tools, equipment, and organization to produce the expected outcome. This can be done by designing the relationship system of the activities from planning, creating standard

and implementation method for the activities to have higher effectiveness and efficiency to satisfy the stakeholders of the educational quality.

Quality Improvement means the ability to apply the basic tools for the quality implementation such as brainstorming, making diagram for cause and effects, and making the implementation plan. There is also analysis of weakness, strength of quality assurance, and creativity in improving the outcome to reach sustainable standards. The most challenging task is to create the high outcome and high standards with limited resources. The work process of Deming's PDCA emphasizes on the process of problem solving, continuous improving of process, and the learning process in the organization.

### **Concept on the system for educational quality assurance**

The researcher studies the concept on the system for educational quality assurance. It is composed of Total Quality Control (TQC), Total Quality Management (TQM), and Malcolm Baldrige National Quality Award (MBNQA). These components can be summarized as the followings.

#### **Total Quality Control (TQC)**

The principle for the Total Quality Control is controlling the quality based on the concept of Deming's PDCA. The administrators must determine, trust, and willing to know about the principle concept, including the implementation. The administration must follow the 14 guidelines as the followings (Office of Pilot Project of Educational Reform, 2001, p. 101).

1. Clear objectives in improving the quality.
2. Adjustment to new philosophy of administration.
3. Use statistically-related processes.
4. Not to run business that emphasizes on selling price only.
5. Continuous Improvement.
6. Regular Training for the personnel or practitioners.
7. Implant leadership to personnel.
8. Use consultation method more than command.
9. Working in team.
10. Clear implementation guideline.
11. Utilization of results to improve the implementation process to measure the outcome of the personnel.
12. Create pride and satisfaction in the work of personnel.
13. Consider that the training or new training as a long-term investment that affects the achievement of the organization.
14. Place the right men to right jobs and the administrators participate in parts of the teamwork so there is continuous learning together.

The total quality control in Japan is considered very important. The prize is given to the successful quality control called Deming Prize that has been identified by Union of Japanese Scientists and Engineers (JUSE). The criteria or indicators that are used for making frame for judging the award or used for evaluation (Woraphat Phucharoen, 1998, pp.37-46) are (1) policy, (2) administration of organization and implementation, (3) education, (4) gathering users and communication of information in the organization, (5) analysis of important problem, (6) working practice based on standards, (7) control over management by using statistics to control, (8) quality assurance, and (9) outcome.

### **Total Quality Management (TQM)**

Total Quality Management (TQM) is the systematic management with the intention to create quality in every step, every activity, every process, and every part of organization. The important objective of the total quality management is to improve the work continuously, to assure all the implementation have quality, to get the product or the quality management as needed and expected by the receiver of service. There are three main principles which are the followings (Office of Pilot Project of Educational Reform, 2001, p. 100).

1. Emphasis of importance of customers in every step of work aim for the customer's satisfaction.
2. Improvement of the work process to have more efficiency requires improving the work process regularly using the Deming's Cycle of PDCA (Plan-Do-Check-Action).
3. Allowing participation from everyone in the organization who has clear duties and must be responsible for the assigned work and the results of total implementation of the whole organization together.

The total quality management of the organization is the guideline for the integrated management that shows the good method for quality management. In the past this was created in the process of production of goods and services satisfy and create values to customers through continuous quality control in the internal relationship system of the process of good production and service. This system consists of the following components (Bounds, 1994, pp. 62-80 and Thongchai Wongchaisuwan, 1997, pp. 146-160).

1. Understand the necessity and the needs of customers. Organization understands what is the trend of customers by considering the benefit and loss in using the product throughout the shelf age. Besides, to satisfy customers the producer must be able to excite customers and enable them to use the organization product better.
2. Create strategy that is valuable to customers to respond to their changing needs and demands. Therefore the organization must have main strategy to create market and keep it in long term and general strategy that is not emphasizing only on

investment or on differences in unique specification of the goods or services but also on the customer-based strategy to create high satisfaction.

3. Improvement of the system in the organization continuously based on quality level which is acceptable or based on freedom from flaws that covers three aspects, i.e. quality of goods and services design, quality of production model, and the quality of use.

From the success in using the quality management system in the organization in to the business system to respond to customer satisfaction on quality there is attempt to use this system in education based on the 11 principles (Chalermchai Hankla, 2002, pp. 5-6).

1. Quality responds to the need of customers.
2. Quality is responsibility of everyone in organization.
3. Quality is continuous development.
4. Quality is leadership.
5. Quality is development of human resources.
6. Quality is working systematically.
7. Quality is working without fear.
8. Quality must be accepted and get reward.
9. Quality must create teamwork.
10. Quality requires measurement and evaluation.
11. Quality is solving problems systematically.

The components of Total Quality Management (TQM)

The important components for quality control in TQM can be classified into seven components (Office of Pilot Project or Educational Reform, 2001, pp. 100-104).

1. Leadership. Administrator creates understanding to be aware on quality for every personnel at every level.
2. Educational and training organization must have philosophy on human resource development as the valuable resource in organization.
3. Create supplementary structure that identifies policy and implementation guideline with emphasis on quality.
4. Communication changes the old thoughts or concept of everyone on the quality management.
5. Make judgment on promotion. The high executive administrators must support and express this judgment system formally.
6. Using the statistical process.
7. Work in team.



From the study of main component on Total Quality Management system it is composed by the following principles (Amornwit Nakhonthap, 1997, p. 200).

1. Quality is something the service receivers identify in order to create response directly between missions of the institution and the needs of market.
2. The word “service receiver” includes the service receivers inside the institution that the personnel in organization must be aware of the importance of other personnel as “service receivers”.
3. Participation of personnel at all levels especially at practitioner level is the key for the quality development that can be achieved by allowing the personnel to use their roles and importance in developing the quality of the work process in every step to build efficient process.
4. The for quality control of the work is the key to reduce the waste of investment, expenditure and mistakes in work
5. Work in circle to develop organization continuously based on the mechanism to give education training, communicate inside the organization, and give awards for efficient work to be tools in stimulating development continuously.

#### **Thailand Quality Award (TQA)**

Thailand Quality Award (TQA) is considered the award of standard level because it has the basis on techniques and decision making processes to give award as well as the Malcolm Baldrige National Quality Award (MBNQA). In the US it is the model to give national-level award on qualities that many countries around the world like Japan, Australia, Singapore, Malaysia and the Philippines apply ( Thailand Productivity Institute, 2007, pp. 3-6).

##### **Objectives**

1. Support to bring guideline for national quality award to improve ability in competition.
2. To announce honor for successful organizations within the world standard level.
3. Stimulate the learning and exchange of the best practices and methods.
4. Shortlist the countries to see determination in enhancing the standard level for excellence in management.

#### **Thailand Quality Award –TQA**

Thailand Quality Award (TQA) is considered as the world standard award. It has a background on techniques and processes on the award judgment process as well as the USA quality award or The Malcolm Baldrige National Quality Award (MBNQA). TQA is the model for national quality award which many countries around the world such as Japan, Australia, Singapore, Malaysia and the Philippines also apply (Thailand Productivity Institute, 2007, pp. 3-6).

##### **Objectives**

1. To support the guideline for national quality award to improve the ability in the competition.
2. To announce the honors to successful organizations which are successful according to the world standards.

3. To stimulate learning and exchange of best practice methods.
4. To show the determination of enhancing standard levels to reach the best administration practice among world countries.

#### Benefits for organizations

The government and private sectors of all types and sizes that use the criteria to implement for the excellence as the frame for evaluating the world standard level compare the criteria with their own management systems. They will get benefit in all steps starting from the self-assessment. The administrators will be aware of the real conditions of their own management system. They can notice what still lacks that they can direct methods and targets to set implementation plan. When an organization implements according to the plan until it is ready and determined to get the awards. The organization will receive specific evaluation and whether the organization passes the criteria to get awards or not. The organization will get feedback in data or report to identify strengths and weaknesses that need improvement after the attempts to improve the organization.

Organizations that get awards are accepted by organizations both inside and outside of country and have rights to use local symbols of awareness of the national quality which convey the meaning of excellence in management style. It is an advertisement to these organizations. Besides, the organizations have chances to promote and support the development of ability for the competition in the country by presenting the successful implementation methods to open opportunities for others organization. Other organizations can visit places of best establishment as good models for other organization to apply to be successful as well.

Criteria for national criteria award are the norms for self-assessment of the organization. The selection of the persons who get national quality awards and give feedback and data to organizations that apply them to get the award play three important roles to enhance abilities in the competition as the followings.

1. Help improving the methods for implementation ability and outcome of the organization.
2. Stimulate to have communication and sharing of information of the implementation method which is excellent among organizations.
3. It is the tool to apply in the management of the organization. Besides, it can be used as guidelines for planning and enhancing opportunities for learning.

Criteria for national quality award are made to help the organization to be able to use the guidelines that are integrated in the implementation results. This method may produce results as the followings.

1. Give good value to customers which will results in the market achievement.
2. Improve efficiency and holistic ability of the organization.
3. Learning for organizations and individuals.

#### Review of Literature

The researcher studies secondary data on educational quality assurance in the country and outside as the followings.

##### Research on Domestic Educational Quality Assurance

The researcher studied the research on the education quality assurance. This is composed of model for education quality assurance, the educational quality assurance

system, and synthesis of the findings of external quality assurance of the community college as what follows.

Kanjana Torung (2006) studied the development of indicators and the study on the quality of educational management in community colleges. Findings showed that the quality indicators on the educational management in the community college have been derived from the development of three aspects, which are input factors on process and on outcome (13 standards, 63 indicators), on identifying philosophy vision, objectives and work plan (5 indicators), and on the ability of professors (5 indicators). The curriculum management has two indicators. The qualification of administrators has 3 indicators and the instruction management of profession has 4 indicators. The network management has 3 indicators. The administration and personnel development have 5 indicators. The internal quality assurance system has 5 indicators. The qualification of learning has 15 indicators and creation of cooperating network in community has 3 indicators. Supports on religion, art and culture have 3 indicators. Satisfaction of the relevant people has 6 indicators.

Saowandee Phanmuang (2001) studied the model for the internal quality assurance in the schools under the technical college in the Northeast Region. The findings showed the model for structure of internal quality assurance is classified into three: (1) input factors (implementation plan, policy, personnel, environment and equipment), (2) process (instruction administration and quality assurance), and (3) output (result of instruction, evaluation on learners satisfaction, administration on technical service). The model on implementation has 6 steps which are prepare readiness for personnel, make implementation plan, implement according to the plan, audit and assess, bring the evaluation results to improve, and make report on self-assessment or annual report. The model on standards and quality indicators that should be set is the standards on learners (13 standards and 6 indicators), standards on the process (7 standards and 39 indicators), and standards on factors (11 standards and 35 indicators). The total standards are 31 (with 120 indicators).

Suchitra Phahongsa (2001) studied the model for internal quality assurance at Rajamangala Institute of Technology and found the opinions on the model for quality assurance in Rajamangala Institute of Technology. The found nine components of the Ministry of University Affairs (with additional 113 indicators) are (1) vision, mission, target, and strategic plan, (2) instruction, (3) activities to develop students, (4) research, (5) technical service to society, (6) maintenance of art and culture, (7) management, (8) finance and budget, and (9) system and mechanism for quality assurance. Most of quality indicators have appropriateness in high level, and the model for the quality assurance that should be emphasized the most is on the Process.

Somkul Tharwonkit (2000) studied the model for educational quality assurance in faculty of education, Rajabhat Institute. The findings showed that components and indicators for educational quality in the faculty of education Rajabhat Institute have four main components, which are administration, instruction, professors and personnel, and students and graduates. There are 38 sub-components and 112 indicators. The model for educational quality assurance is composed of principle on quality assurance, system and mechanism in administration, quality assurance, and the implementation methods for educational quality assurance. The model shows the most appropriateness and thus can be brought into use.

Jureewan Maneesaeng ( 2000) studied the development of the system for quality assurance in the private nursing education institutions. The findings point that the developed system for quality assurance is composed of the structure of system and administration of system, steps for the activity process in the system, and the component on quality, indicators and auditing reports. The steps for activity process in the system are both the internal quality assurance and internal quality assurance. The internal quality assurance is composed of (1) the process to control the quality which has three activities (activities to identify the components on quality and indicators to measure quality, activities to implement under the quality control, activities to improve quality continuously, and activities to prepare readiness for auditing and making self-assessment report), (2) the process for auditing and internal quality assurance which has three activities (study of the self-study report or SSR, implement of audit and evaluation of the internal quality and make the auditing report), and (3) the process to improve quality and preparation to receive external quality assurance as four activities (the study on report on auditing, improving quality, make self-assessment report, and implement following the identified step by external organization to evaluate, and give certification to the institute).

Vichian Puncreobutr ( 2005) studied the development of system on internal quality assurance of the private vocational schools. The findings show the internal quality assurance system in the private schools is composed of three subsystems which are the system for quality administration, system for quality management, and system for quality implementation. The systems for administration and for management are the systems that support the system for implementation or the systems that consider main mission of arranging the instruction to achieve the guideline for educational reform. The system for implementation on the quality is composed of three components which are component on the context and input factors, component on process, and components on outcome.

The outcome is composed of (1) context and input factor (philosophy and planning, administrative structure, budget and personnel management, curriculum, professor, and student), (2) components on process (instruction management, measurement and evaluation, student development, development of instruction, relationship with external organization), and (3) component on output (outcome of the school and reputation of the school).

Paiboon Paonil ( 2000) launched a research entitled “The Development of Educational Quality Assurance System in the Course of Educational Technology in Rajabhat Institute”. The findings showed that the educational quality assurance system was composed of five steps: identifying policy, developing the tools for quality assurance, controlling the quality, auditing the quality, and evaluating the quality. Each step needs identification of components that require implementation that leads to the certification of quality from Step 1 to Step 4. This process requires publication, reinforcement, and evaluation from time to time. The component to assuring the quality in the subject is composed of 6 components which are philosophy and objectives in the subject, curriculum, professor, students, instruction, and administration of course (with 71 indicators). The experts on educational quality assurance system agreed that the educational quality assurance system and each of the components and indicators show the appropriateness in the high level (up to the



highest level). The opinions of experts also show the correlation value in the highest level in all items.

Siri Thee-Asana (2006) studied the development of internal quality assurance in vocational education schools through action research principle or case study. The findings showed that the component of the internal quality assurance system has 11 standards and 126 indicators. The study on the internal quality assurance system in private vocational education schools is to study their present conditions, problems, strengths, and weaknesses. The schools that pass criteria and want to develop the educational quality assurance system in other school can try this set of criteria. The study shows that the component of appropriate quality assurance system that needs improvement is composed of 6 standards and 15 indicators. The researcher developed each of indicators through action research process which is composed of planning, implementation, observation, data collection, and feedback of implementation. The process applied the Balanced Scorecard, Total Quality Management, Result-Based Management, and Benchmarking to use in the step of measurement and evaluation of implementation as well as to check the correctness and feasibility of the internal quality assurance system in the private vocational education school through the principles of action research. The experts agree on the developed system that it is appropriate according to the subjects.

Uthai Dulayakasem (2006) studied the synthesis of reports on external quality evaluation results of a community college in the fiscal year 2006. An external quality evaluation of the college in first round by ONESQA showed a similarity between the frames of evaluation used by the external quality evaluation of the community college and those of the Institution in higher education level. Therefore the evaluation results failed to reflect reality or facts in the implementation of community college. Although this college is in higher education level but its targets and missions of implementation are different from the educational institute at bachelor degree. Therefore the external quality evaluation of community in round two by ONESQA should also consider review and revision that the implementation of the community college can represent the community college truly based on the purposes of its establishment.

### **Review of Literature on Educational Quality Assurance in Overseas**

Beas and Zarkesh (2003) studied and compared indicators used in 50 community colleges in the US in 2000 and 2003. They studied the annual reports of community colleges, interviews, and questionnaire through e-mails to the administrator and the committee of community college councils. The findings showed 20 indicators that are most popularly used which are (1) the rate of transfer of student, (2) the rate of employment, (3) ratio of students who study on vocational and get the vocational licenses, (4) number of students who complete education, (5) being evaluated by communities in duration of 1-3 years, (6) graduation rate, (7) participation between business establishment and community college, (8) satisfaction of employers, (9) number of students who get certificate, (10) amount of works and instructional hour of teachers, (11) main strategic plan, (12) achievement of set targets of students, (13) good administration, (14) capability in performance of students, (15) the area to give service of community college, (16) teacher per students ratio, (17) the ratio of student who maintain study for whole



course, (18) the ratio of students who get assistance until success, (19) quality of courses, and (20) evaluation of programs.

Joseph and Henrik (2004) studied the evaluation of indicators used in 101 community colleges in the US through the reports on the implementation of 29 states. The findings showed that indicators of community college can be classified into four aspects which are “Input” (personnel finance, resources), “Process” (arranging activities, services), “Output” (completion of study, duration of study), and “Outcome” (occupational license, employment). After comparing the average scores, this study revealed that the most used indicators are (1) certificate/degrees of professor, (2) employment, (3) completion of study, (4) efficient activities, (5) survey on employer satisfaction, (6) unique indicators of college, (7) survey on students satisfaction, (8) ratio of transfer/continuous curriculum, (9) training to apply into study, (10) curriculum that gets certification, (11) the pursuing of study among students (number of new students), (12) survey of alumni satisfaction, (13) best learning results, (14) best learning results on analysis and synthesis thinking, (15) diversity of subjects, (16) use of technology for long distance instruction, (17) external cooperation, (18) teacher burdens, (19) duration of study in each curriculum, (20) expenditure in management, (21) professors who get extra training, (22) pursuant of education in higher level, (23) tuition fee per unit, (24) the fund collected for outside to support external research, (25) SAT/ ACT scores of new students.

Thomas (2001) studied the quality of indicators used for measuring the efficiency of community college. The sample groups are the stakeholders in the educational system such as students, professors, administrators, personnel in institution, and the employers. Number of sample is 162 people. The tools used for research are questionnaires, with rating-scale composed of 60 indicators from various aspects which are on input factor, on process, on production, and on outcome. The findings show that the highest quality indicators for measuring efficiency of community college from the highest to the lowest are (1) ratio of occupational license, (2) student satisfaction towards teachers’ instruction, (3) promotion of analytical skills of students, (4) promotion of writing skill of students, (5) ratio between student and teachers, (6) percentage of students who achieve technical target, (7) employers’ satisfaction, (8) percentage of graduates who get jobs, (9) promotion of communication skill among students, (10) students performance, (11) number of teaching hours of teachers, (12) the ratio of completion of education at college, (15) ratio of application to study, (16) degree of professors, (17) diversity of courses, (18) trainings for professors, (19) research funds, and (20) learning achievement of students.

Denise et al. (2002) studied the indicators appropriate for evaluating efficiency of Jamestown Community College by analyzing the vision, mission, and target in the educational administration of the college and by classifying the indicators. These are (1) ratio of general registration, (2) registration of full time student, (3) ratio of students who complete the courses, (4) ratio of completion of education, (5) satisfaction of students, (6) satisfaction of graduates, (7) ratio of employment of graduates, (8) the one who pursue higher education, (9) satisfaction towards the college administration, (10) satisfaction on environment, (11) satisfaction on convenience, (12) employers satisfaction, (13) ratio of students per computer,

(14) satisfaction toward arrangement of learning environment, and (15) students satisfaction.

Joseph (1997) compared the indicators used in community colleges and universities in eight states. The study compared the stakeholders on values and classified the answers based on certain models. The findings showed that 70 percent of indicators were relevant to external stakeholders and 16 percent were relevant to internal stakeholders. Only 12 percent of indicator was applicable to both external and internal stakeholders. When classified into types, the indicators fell into input factors (13 percent), process (42 percent), production (21 percent), outcome (18 percent), and mixed indicators (6 percent). When classified based on their values, 40 percent of indicators is about efficiency and 18 percent about quality. The indicators that used the most are (1) the rate of application into study program, (2) degrees of professors, (3) amount of work for teachers, (4) partnership between business establishment and community college, (5) use of technology media in teaching, (6) expenditure in administration, (7) the rate of student staying in the whole course, (8) number of graduate who pursue studies in higher level, (9) scholarship from outside to research fund, (10) satisfaction of stakeholders, and (11) ratio of students per teacher.

Woodward (1990) studied indicators for efficiency of community college through a four-round Delphi technique through interviews with 24 experts in community colleges and executive administrators who are responsible for implementation of the community colleges. The findings showed eight important indicators arranged based on the weight of importance according to the expert opinion in this order: (1) quality of professors and personnel, (2) quality of program in institution and service of support section, (3) level of student success, (4) capability to induce students, (5) leadership of executive director, (6) economic and resource management, (7) supportive environment, and (8) clarity of mission based on objectives.

Sorensen (1998) studied and check importance of the use of indicators that are efficient for evaluating the outcome of the school and consistent with the changes and the feasibility of the community colleges in Northwest (145 people pass the process of certifying the ranks since 1990 through the survey on 13 indicators which show importance of steps of changes). The indicators are ranked from those chosen by 90 percent of respondents of questionnaire in the following manner: external indicators related to the graduates' level of employment and satisfaction of their employers, satisfaction of students or customers, and the levels of progress of the students.

The research on internal quality assurance in Thailand and overseas reveals that the models for internal educational quality assurance have four aspects, i.e., on input factors, on process, on production, and on output. The implementation process is composed of (1) quality control or identification of standards and indicators as target for implementation which covers mission, system, and mechanism in administration according to the implementation plan, (2) quality auditing is the check of the self-study report from the secondary data on implementation, and (3) quality evaluation or evaluation to improve and develop the educational quality continuously and prepare readiness for external quality assurance which is the evaluation to get certification on educational quality of the institution and then publication to the public.